



PD&E STUDY
CORTEZ BRIDGE
From SR 789 (Gulf Drive) to 123rd Street West



Financial Project Number: 430204-1-22-01

NO-BUILD/REPAIR ALTERNATIVE

Construction started on a bridge repair project in May 2014 designed to keep the Cortez Bridge safe and operable for up to 10 years. While no one can precisely predict how long a repair will last, the no-build/repair alternative is intended to keep the bridge safe and operable for as much as another 10 years, or until 2035. After the 10-year repair life, the bridge will need to be replaced.

Repairs include partial replacement of the deck to address beam deficiencies, requiring a temporary bridge to maintain traffic during construction. The no-build/repair alternative will keep the same functionally obsolete, substandard roadway width. This alternative will remain viable throughout the alternatives analysis and evaluation process.

REHABILITATION ALTERNATIVE

FDOT also evaluated the rehabilitation alternative after an extensive inspection and testing program. Rehabilitation would include making major repairs to the fixed and movable portions of the bridge. While no one can precisely predict how long the repairs will last, the rehabilitation is intended to extend the bridge's service life by up to 25 years or until 2050. After the 25-year rehabilitation life, the bridge will need to be replaced.

Rehabilitation includes replacement of the entire superstructure to address the condition of the beams and improve their reliability. However, the extreme corrosive environment would continue to affect the original piles and foundation. The piles would require additional repairs, including concrete repairs, pile jackets, and possibly the need for crutch bents to support the new deck and beams.

While rehabilitation would extend the service life by up to an additional 25 years, the foundation, piles, and pile caps will have exceeded their design life by over 60% in those 25 years. The rehabilitation will keep the same functionally obsolete, sub-standard roadway width since widening to accommodate additional shoulder areas is not possible due to the existing structural capacity and the capacity of the electrical and mechanical systems of the movable span. A temporary bridge is required to maintain traffic during construction.

BUILD ALTERNATIVES

The Department is studying low-level and mid-level drawbridges and high-level fixed replacement alternatives. Evaluation of all build alternatives included a center alignment, a north alignment, and a south alignment. The project length is not significantly different for the alignments; therefore, construction costs will not be significantly different between the north and south alignments. The north alignment is 9 feet north of the existing bridge, and the south alignment is 15 feet south of the existing bridge. Since the center alignment requires a long detour or an expensive temporary bridge, FDOT dropped it from further consideration.

The existing vertical clearance of the bridge is 17½ feet at the Intracoastal Waterway. The U.S. Coast Guard establishes minimum navigational guide clearances for the Gulf Intracoastal Waterway at this location. They are a 21-foot vertical clearance for a new drawbridge and a 65-foot vertical clearance for a new fixed bridge. The horizontal guide clearance for all bridge replacements is 90 feet perpendicular between fenders. However, FDOT is considering a 100-foot wide channel, which is a 10-foot increase over the existing condition.

FDOT developed the following conceptual bridge designs:

- Low-level drawbridge, similar to the existing bridge, with 21-foot vertical clearance when the bridge is closed.
- Mid-level drawbridge with 45-foot vertical clearance when the bridge is closed. This clearance allows 50% of boats that currently require the bridge to open to pass underneath without requiring the bridge to open, reducing delays for vehicles and vessels.
- High-level fixed structure with 65-foot vertical clearance allows 98 percent of all vessels that currently use the channel to pass under the bridge.

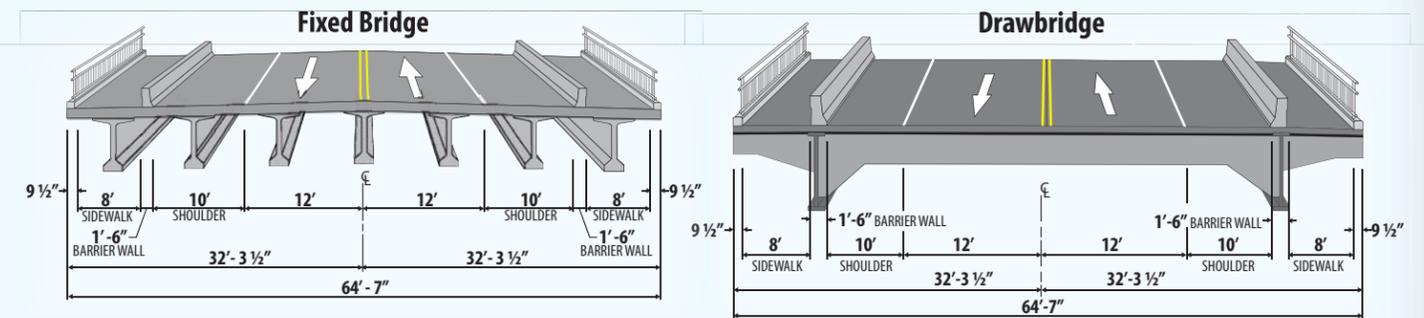
All bridge replacement alternatives use the existing bridge to maintain traffic during construction and include the removal of the existing bridge once traffic shifts to a new bridge. There are currently no plans to leave any portion of the existing bridge intact for recreational or any other use. All replacement alternatives are designed to last up to 75 years.

VIALE REPLACEMENT ALTERNATIVES

In order to quantify the costs and potential effects associated with the alternatives, FDOT is analyzing the no-build/repair alternative, rehabilitation, and build alternatives that include two alignments and three bridge replacement heights. We will present an alternatives matrix with results of the analysis at the public meeting and display aerial photographs with the alternatives for your review. We will also show renderings of the proposed bridge heights on photographs.

HOW THE BRIDGE WILL LOOK

If the bridge replacement option is selected, the new bridge includes two 12-foot lanes and two 10-foot shoulders, which can accommodate bicyclists and disabled vehicles. Eight-foot sidewalks are included on both sides of the bridge. The design speed is 40 miles per hour.



TUNNEL ALTERNATIVE

FDOT analyzed a tunnel alternative. The estimated construction cost for a tunnel ranges from \$75 million to \$125 million, not including additional costs for design, right-of-way, construction engineering inspection, operations and maintenance. Based on the estimate, the tunnel alternative cost far exceeds the cost of the rehabilitation or replacement alternatives.

The study team evaluated environmental effects associated with the tunnel alternative. We eliminated this alternative from further consideration based on possible effects to the natural environment caused by dredging and the high cost of a tunnel, among other factors.

ENVIRONMENTAL EFFECTS

The study evaluates potential environmental effects associated with the proposed build alternatives. Detailed analyses of wetlands, floodplains, threatened and endangered species, water quality, hazardous materials, recreational sites, noise, air quality, historic structures, and archaeological sites are an important part of this study. Based on our studies to date, we do not expect significant effects associated with the proposed build alternatives.

WHAT HAPPENS NEXT?

Following the alternatives public meeting, FDOT will review comments received and, together with engineering and environmental analyses, refine the viable build alternatives. We will complete a thorough analysis of potential environmental effects and document findings in several reports. We will also continue coordination with local government entities.

FDOT will present the no-build/repair alternative, rehabilitation alternative, and recommended build alternative at a formal public hearing where we will solicit people's comments. The hearing is tentatively scheduled for spring 2015.

Following the hearing, we will submit the recommended alternative for approval to the Federal Highway Administration, the lead federal agency for the study. Following approval, the project is eligible to advance to design, right-of-way acquisition and construction phases as funding becomes available.

PUBLIC INVOLVEMENT

Public involvement is a very important part of this PD&E study. FDOT uses several ways to provide information to and receive information from public officials, agencies and interested people. They include newsletters and presentations to neighborhoods, small groups and organizations. Following development of options, we hold an alternatives public meeting.

FDOT will conduct a formal public hearing to present the no-build/repair alternative, rehabilitation alternative and recommended build alternative. A project website www.cortezbridge.com is available for you to share comments with FDOT and the study team. Please review the schedule on the back page for future public involvement events.