



# Keystone Dam

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG.

**CORPS UNVEILS PLANS FOR INNOVATIVE BRIDGE TO REPLACE AGING HIGHWAY 151 BRIDGE OVER KEYSTONE DAM. THE STRUCTURE WILL BE BUILT AT A COST OF \$15.6 MILLION.**

- **Speed of construction factored into every element of the innovative and atypical bridge system.**
  - Design implements precast concrete components to increase the speed of construction. Elements will be precast at fabrication plant facilities and shipped to the worksite, reducing the time on site it typically takes to form and cure elements.
  - Precasting allows for better quality because it is easier to control and monitor the environment at a plant rather than on site.
  - Elements can be constructed simultaneously, reducing lag time waiting for one element to be completed before starting the next.
- **The replacement of the Highway 151 bridge over Keystone Dam is necessary for the public's safety.**
  - An engineering analysis found the bridge, built in 1964, is at the end of its useful life.
  - This is an investment in the future because a new bridge will replace the existing structure.
  - Not replacing the bridge could risk an unplanned extended closure that could last longer than this planned project.
- **This bridge project is an excellent example of partnership between the federal and state governments.**
  - With limited federal funding available, the state contributed the needed funds to award the contract on schedule.
  - The Oklahoma Department of Transportation contributed \$6 million to the project after bid proposals exceeded available federal funds.
  - The Kiewit Infrastructure South Company of Omaha, Nebraska, was awarded the \$15,600,000.00 contract July 15, 2013.
- **The bridge closure will require detours.**
  - The bridge will be closed to traffic for up to 13 months beginning Oct. 28, 2013 through November 2014.
  - Kiewit will be responsible to implement traffic control measures.
  - Updated traffic information will be available on the ODOT traffic webpage [www.okladot.state.ok.us/newsmedia/traffic-advisory.htm](http://www.okladot.state.ok.us/newsmedia/traffic-advisory.htm) and at the Tulsa District webpage [www.swt.usace.army.mil](http://www.swt.usace.army.mil).

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- **Areas around Keystone Dam will experience construction traffic and some recreation access points may be impacted.**
  - Most day use and camping facilities will remain available to the public.
  - Fishing will continue to be available below the dam, however Kiewit will have construction equipment in the area and visitors should be cognizant of the clearly marked construction areas closed to the public.
  - Boating will continue to be available on Lake Keystone.
  - Keystone State Park will remain open.
  
- **The dam will remain fully functional during construction.**
  - The bridge replacement will not affect the normal operation of the dam.
  - The work will not affect the integrity of the dam.
  - Plans are in place which will allow time for the removal of Kiewit personnel and equipment in the occurrence of a high-water event that would require release.

### **Questions and Answers**

#### **Q. Why does the bridge have to be completely closed?**

**A.** Because of the fracture critical nature of the bridge, it cannot be replaced one lane or side at a time. There are only two girders supporting each span of the bridge. Removing one of the girders on one side will make the bridge unstable.

#### **Q. How is this going to affect the daily commute?**

**A.** It will affect motorists for as short a time as possible in differing ways and detour lengths will depend upon where the motorist is traveling from. The bridge will be closed for up to 13 months and detour routes will be clearly marked. The longest possible detour is approximately 18 miles if you are on one side of the dam trying to get to the other. If there's one thing to remember, it's that the bridge will be replaced as quickly as possible.

#### **Q. Can you give us any details about the contract?**

**A.** The contract specifies for the demolition and replacement of the Keystone Lake Dam Bridge including deck, superstructure, elements of substructure, catwalk, equipment platforms and supporting utilities. Solicitations were due to Tulsa District by 2:00 p.m., February 8, 2013. Kiewit won the contract bid and it was awarded in July.

#### **Q. Will this have a negative economic impact on businesses and the public?**

**A.** We are getting an improved, safer bridge. We will all have to cope with the inconvenience of the closure, including 8 USACE employees who work at the Lake Office. On the contrary, Kiewit will buy some materials locally. There will be 35-40 workers, about 20-25 percent hired locally, who will be eating lunch, buying gas, paying for lodging, which will put dollars directly into the local economy.

#### **Q. What type of precautions will be taken to protect the environment such as the water quality? Will debris get into the lake or the river?**

**A.** The contractor will be responsible for complying with all Federal, State, and local environmental protection laws and regulations. During the construction process, the contractor will be required to submit to the Government a comprehensive environmental protection plan, which will address issues such as air pollution control, contaminant prevention, wastewater management, etc. Additionally, the contractor will also be required to prevent debris from entering the lake or river through methods reviewed and approved during the construction process.

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**Q. Can you tell me more about the engineering analysis? Who did it and when was it completed?**

**A.** The engineering analysis was a multi-year effort, which consisted of in-depth inspections of all bridge components, concrete durability and strength testing, non-destructive weld testing, a load rating and posting to determine the maximum safe vehicle, and an economic analysis to determine the most cost effective solution to fix the bridge deterioration. Corps engineers, consulting engineering firms, and testing companies all contributed to this comprehensive analysis.

**Q. How many miles is the detour going to be?**

**A.** The detours will depend upon where you are coming from and heading to, and will likely add only minutes to the drive. The longest possible detour is approximately 18 miles if you are on one side of the dam trying to get to the other. Detour maps are available at the ODOT web site and on the Tulsa District webpage.

**Q. What do people do if they have a medical emergency?**

**A.** The Keystone Bridge on Highway 151 is not considered a lifeline route. A lifeline route is one in which no alternate route is available for emergency vehicles. A clearly marked detour route will be provided which will provide access to medical vehicles and facilities.

**Q. Why did ODOT have to contribute money?**

**A.** This bridge project is an excellent example of partnership between the federal and state governments. With limited federal funding available, the state contributed the additional needed funds to award the contract on schedule. The Oklahoma Department of Transportation contributed \$6 million to the project after bid proposals exceeded available federal funds.

**Q. Why did the Corps select an out of state contractor?**

**A.** Kiewit successfully bid for the project and met the requirements of the contract. We believe their bid provided the best value, experience and quality required to successfully complete the project and fulfill the contract. They will provide this community an innovative, safer structure that will last for the next half-century.

**Q. Why did you let the bridge get into such bad shape?**

**A.** About 7,400 vehicles cross this bridge every day. Considering the age of the bridge, that is quite a load. All of our nation's infrastructure has a finite lifespan and will require replacement or repair. That time is now for the Highway 151 Bridge over the Keystone Dam and we look forward to completing this as quickly as possible.

**Q. Have we been driving on an unsafe bridge?**

**A.** ODOT and the Corps have conducted regular inspections of this bridge. When it was determined that the strength of the bridge had decreased due to its condition, the bridge was load posted with vehicle weight limits to ensure its continued safe operation. The Corps then began to explore the best, fastest, and most cost-effective way to rehabilitate the structure. An economic analysis indicated that replacement of the bridge was the most economical solution.

**Q. Is the bridge in danger of failing before the work begins?**

**A.** No. Public safety is the number one priority and all precautions are in place to insure the safety of the Highway 151 Bridge over the Keystone Dam. The USACE continues to monitor the bridge condition. In-depth inspections are being performed on a 6-month basis with interim walk-through

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inspections every 3 months. These inspections will continue to be performed until the bridge is closed for construction. The bridge was last inspected Wednesday, August 28, 2013.

**Q. What are safe loads that can cross the bridge?**

**A.** The bridge is load posted as follows: H20 truck = 15 tons; HS20 truck = 25 tons; 3-3 truck = 41 tons. Trucks over these weights cannot cross the bridge.

**Q. How long will it be closed?**

**A.** Speed of construction factored into every element of the innovative and atypical bridge system, and we anticipate a closure lasting no longer than twelve months.

**Q. Is there a monetary incentive to complete the work ahead of schedule?**

**A.** The federal contractual process does not allow for that, but it is important to note that there is a “disincentive” for not finishing on time. Kiewit will be working hard to meet their contractual requirement and avoid liquidated damages penalties (disincentive) and will adjust their shift work according to their progress and phase of construction. Kiewit is allowed to work 24 hours per day 7 days per week.

**Q. How will the progress be tracked? Web-site, ODOT bulletins?**

**A.** Progress updates of the bridge construction will be available at the Tulsa District webpage and on social media. Additional information such as traffic information and various detours will be available at the Tulsa District site and on the ODOT traffic page.

**Q. Will any of the downstream recreation areas be affected?**

**A.** Areas around Keystone Dam will experience construction traffic and some recreation access points may be impacted. Day use and camping facilities will remain available to the public. Fishing will continue to be available below the dam, however Kiewit will have construction equipment in the area and visitors should be careful. Boating will continue to be available on Keystone Lake.

**Q. When can we notify our Emergency Staffs and local businesses? Today?**

**A.** Yes. The information is available to be shared today. If there is any way the Corps can be of help with this distribution of information we stand ready to do that. We are in this with the community. Our employees at the Lake Office are also affected by this and if we can come together and get through this bridge closure, we will all benefit with a new bridge.

**Q. Is the Corps going to hold Keystone Lake’s level higher during construction of the Highway 151 Bridge?**

**A.** The bridge replacement will not affect the normal operation of the dam, and there are no plans for changes to the lake’s normal level or scheduled releases.

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