

## FREQUENTLY ASKED QUESTIONS:

### Q1: What was the final conclusion about what happened to the western dam when it burst?

**A:** According to the independent analysis done by the city after the July 2010 collapse of one of the four rubber western dam bladders, the cause was attributed to “intra-carcass pressurization” which means that the laminated rubber layers of the bladder split apart. Get more details from the report listed at [www.tempe.gov/damreplacement](http://www.tempe.gov/damreplacement).



WESTERN DAM REPLACEMENT

### Q2: The rubber dams out there now on the western end of the lake are new – why can't you just leave them there?

**A:** According to the agreement, Tempe is required to have another western dam installed and the current rubber bladders rendered inoperable by Dec. 28, 2015. The contractual penalty to the city for not meeting the agreement by then is \$300,000 per month paid to Bridgestone. The fee may be waived if there are weather delays.

As a result of testing, the City of Tempe discovered that the rubber dams it had purchased from Bridgestone had a shorter-than-expected lifespan. Before the rubber bladder failed in July 2010, the City of Tempe had already negotiated with Bridgestone to have the replacement bladders manufactured and installed at Bridgestone's expense. The bladders were intended to be an interim solution until the city could find a long-term option for the western dam.

### Q3: What is the cost of the steel gate dam and how will the city pay for it?

**A:** Total project costs are estimated to be \$40.8 million. The city will pay for the cost using cash reserves and the sale of bonds, which are repaid over 20 years through secondary property taxes.

### Q4: Why are you going with a steel gate this time and not a rubber dam? Why was this technology chosen over other options?

**A:** An alternatives evaluation was completed that included a review of possible technologies and comparison of each technology to a defined criteria considered to be necessary for success of the project. Twenty potential alternative configurations were evaluated relative to the project criteria. The list included alternatives considered prior to the original design of the Town Lake dam, alternatives evaluated during a study performed in 2008 and additional alternatives proposed since then. All alternatives were discussed by the project team to assess their ability to meet the criteria, based on preliminary hydraulic analyses and on other technical considerations associated with the structure including cost.

The hydraulically operated steel gate system constructed approximately 100 feet downstream from the existing dam was selected to replace the rubber bladders and satisfy the operational and hydraulic capacity constraints at the existing dam site and provide a high degree of reliability, durability and value. The steel gate dam system was among the lowest costing options, lower than the price of replacing the rubber bladders.

### Q5: How will the new dam work, how will it be maintained and how will it look when completed?

**A:** The dam will have an overall length of 950 feet, with eight hydraulically operated steel gates, each 17 feet high and 106 feet in length. There will be two new riverbank abutments and seven mid-lake reinforced concrete piers. The gates will be anchored to a new foundation slab and will be operated by hydraulic cylinders attached to each end of the steel plates to independently, or in unison, raise and lower the gates.

A detailed operation and maintenance procedure list is being developed to safely maintain and operate the new dam.



## Q6: Where else are there steel dams like the one that will be in Tempe?

**A:** Oklahoma City Maps Projects, (Brum, Eastern and May Dams) Oklahoma City, OK  
Coon Rapids Dam in Coon Rapids, MN  
Sissonville Hydroelectric Project, Boralex Sissonville NY  
Allens Falls Hydroelectric Project, Brookfield Power Potsdam, NY  
South Glens Falls Hydroelectric Project, Boralex Glens Falls, NY  
Boot Mills Hydroelectric Project, Enel North America Lowell, MA  
Museum Reach/Alamo Street, San Antonio River Authority, San Antonio, TX

## Q7: Why not just build a solid concrete dam? Wouldn't that be easier?

**A:** The concrete dam option was unable to meet the criteria established for Town Lake. These included: maintaining the waters of Town Lake, handling flows from storms and regular water sources, returning the lake to normal after floods, handling water from extreme flood events smaller than 210,000 cubic feet per second (cfs) and meeting regulatory requirements.

## Q8: What value does Town Lake have that merits this expense?

**A:** In 2012, the City of Tempe estimated its return on investment using a number of figures including the initial construction cost, the repayment of debt, tourism revenues and estimates of the value of buildings built around the lake since its opening. The resulting estimate showed that Town Lake has provided a return on investment of more than \$800 million in approximately its first 12 years. Read a full explanation of this calculation at [www.tempe.gov/damreplacement](http://www.tempe.gov/damreplacement).

The lake is commonly referred to as the second-most popular tourist attraction in Arizona behind the Grand Canyon, according to the Business Journal Book of Lists. Each year, 2.7 million visitors flock to the lake to watch fireworks, attend special events and arts events, take part in boating activities, and participate in high-profile marathon and triathlon events as well as smaller charity walks. Thousands of people now live and work around Town Lake, too. It has become an invaluable community resource that has enriched lives and prompted economic development opportunities.

In May 2013, it was announced that the largest commercial development in Arizona history will be built on the south shore of Town Lake with State Farm as its prime tenant. These types of successes demonstrate the lake's value as an investment that is paying off.

## Q9: What happens to the old rubber dams that you won't need anymore? Will they be recycled?

**A:** Those options are being considered. According to the city's contract with Bridgestone, the manufacturer of the rubber dams, Tempe must render the old dams inoperable after the installation of the new dam. This could mean cutting the rubber bladders so they no longer inflate and leaving them in place or it could mean taking the rubber bladders out.

## Q10: What changes should I be aware of as a boater or recreational user of the lake and its paths?

**A:** The construction will not change the use of the lake for boaters.

Through summer 2014, the path on the south bank of Tempe Town Lake in front of Tempe Center for the Arts will be impacted by the relocation of a stormwater line. The path may also be impacted due to construction traffic on occasion through January 2015. While there may be detours along this portion of the path, people will likely still be able to access to the Town Lake Pedestrian Bridge, the Tempe Center for the Arts and the parks surrounding Tempe Town Lake.

## Q11: Why is the western dam moving to the west of where it is now?

**A:** The hydraulically-operated steel gate system will be constructed approximately 100 feet downstream from the existing dam to make the construction process easier, create a bigger, wider riverchannel that will allow floodwater to pass and satisfy the operational and hydraulic capacity constraints at the existing dam site.

This new location for the dam will mean that water will be on the both sides of the Town Lake Pedestrian Bridge, making for a more aesthetically pleasing experience for visitors.

## Q12: How long will the dam last?

**A:** The expected lifespan of the steel gates is 50 years. With proper comprehensive maintenance, we expect the gates to last many decades.