Memorandum

Public Works Department

DATE: **April 14, 2016**

TO: **Mayor and Members of Council**

FROM: **Craig Caggiano, Water Utilities Operations Manager – Tempe Town Lake**

THROUGH: **Don Bessler, Public Works Director**

SUBJECT: **Tempe Town Lake Management**

On April 12th, 2016, the City of Tempe entered a new phase of Tempe Town Lake Management. On this date, water once again flowed into Tempe Town Lake. This time however, the waters of Tempe Town Lake will be contained behind the world's largest hydraulically operated steel gate dam. Also for the first time, the lake, dam, and associated infrastructure will be managed by a single point of contact, the Water Utilities Operations Manager assigned to Tempe Town Lake.

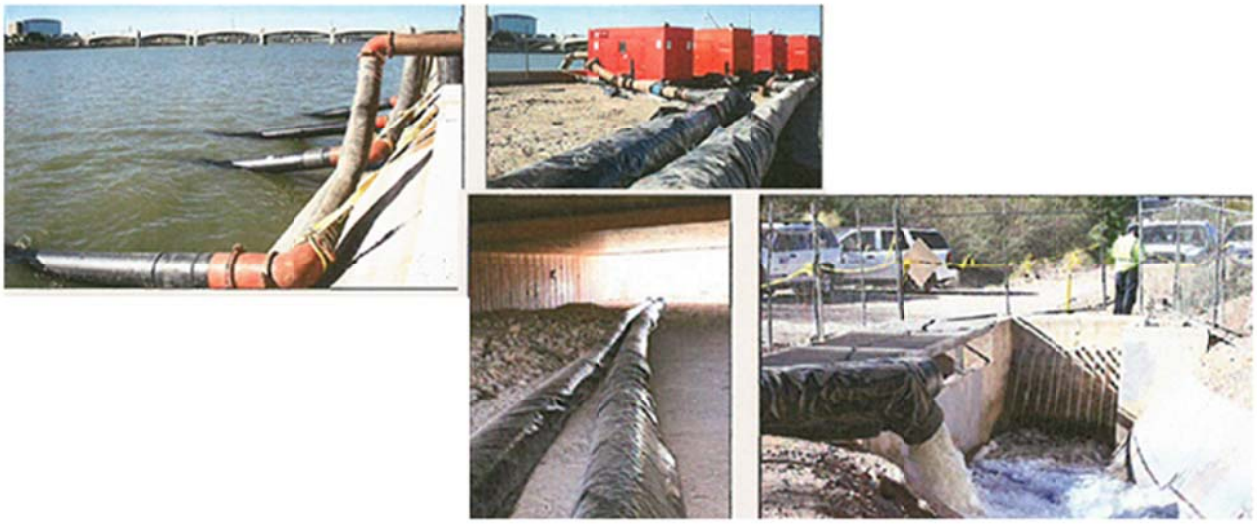
Background

After nearly two and half years of construction, Tempe Town Lake opened to the public on November 7th 1999. Since that time, it has become a regional attraction for outstanding recreational opportunities, and economic development. In 2010, an unexpected release set the stage for development of the new hydraulically operated steel gate dam. Once funding was determined, Tempe's Engineering team worked efficiently and effectively to select the contractors that would be associated with this massive infrastructure project.

2015 and Moving Forward

Once again, after almost three years of construction, Tempe Town Lake is nearly ready for its grand opening. The new dam, constructed of eight hydraulically operated steel gates (each gate is 106' long, 17' high, and weighing nearly 300,000 pounds) will hold back the waters of a new and improved Tempe Town Lake for many years to come.

To facilitate removal of the existing rubber bladder dams, it was necessary to dewater the lake. The City of Tempe takes great pride in its commitment to sustainability; and the approach to this project was no different. To accomplish this, the City worked collaboratively with many partners. The City's partnership with Salt River Project was essential in ensuring that our water resources could be preserved during this necessary process to the best degree possible. The City of Tempe and Salt River Project worked together to divert ~1200 acre Feet of water from the lake to Salt River Project's canal system. Once in the canals, the water was put to beneficial use – and could be later returned to the lake once construction was completed.



Additionally, Tempe partnered with Arizona Game and Fish Department, the United States Fish and Wildlife Service and Tempe's contractors to ensure the ecological system of Tempe Town Lake was also preserved. Game and Fish and Tempe contractors worked collaboratively to relocate fish from the lake to the marina, and continually monitored local wildlife.

During dewatering and the brief time the lake bottom was dry, Tempe assembled crews from a variety of workgroups and sections performing numerous maintenance activities: Engineering coordinated inspections and improvements to critical infrastructure (docks, bridges, beaches, etc.), Water coordinated monitoring for levels of insects and preservation of the ecosystem, and Parks, Transportation, and Solid Waste provided crews to periodically clear the lake bottom of debris.

On April 12th, 2016 at approximately 7:30am, water once again flowed into Tempe Town Lake. Deliveries of exchange water from Salt River Project entered the lake at approximately 90 cubic feet per second. This rate is equivalent to adding approximately three average-sized swimming pools full of water each minute to the lake. Additionally, this flow is anticipated to be sufficient to raise the level of the lake by approximately one foot each day.

During refill of the lake, the seepage recovery wells will be activated as soon as practical.

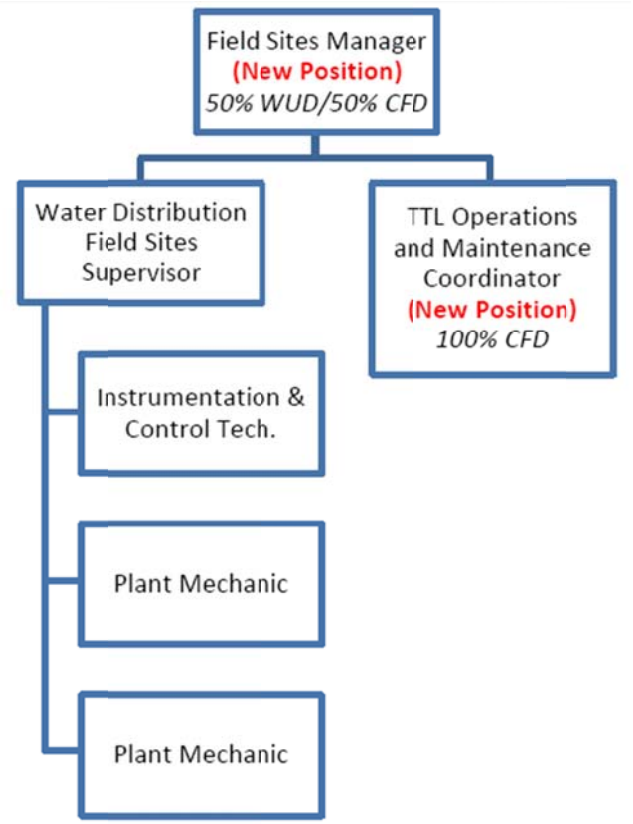
Activating these wells will assist in expediting the refill of the lake and help to prevent rises in the water table in the area immediately adjacent to the lake.

When refill of the lake is complete, the City of Tempe will assume control, operation, and maintenance of the dam for the first time, and the lake will be increased in size.

Due to the decommissioning and removal of the upstream rubber bladder dams, the lake will extend 1850' upstream to the Maricopa County Flood Control District's grade control structure located just east of McClintock Drive.

Since formation of the Rio Salado Project Management Team in 1998, Tempe Town Lake has consistently been managed by a team of dedicated professionals. The primary goals have always been to provide a unique and unequalled recreation resource for Tempe residents while leveraging economic development around Tempe Town Lake. The focus of staffing has evolved over the years as the lake has matured and aged. With the deployment of the new dam, Tempe staff will work in shared stewardship but with well-defined roles and responsibilities. Operationally, Public Works manages the physical infrastructure and aquatic resource to ensure the lake and the dam are operated safely, environmentally and efficiently. Community Services manages the rules for use and associated permits as well as recreational programs and special events. Community Development manages the land-use elements necessary to ensure smart growth and economic prosperity. This mission has remained virtually unaltered regardless of the changes in management structure throughout the years.

Beginning in 2016, management of the dam, lake and associated infrastructure will be handled by the Water Utilities Operations Manager assigned to Tempe Town Lake and the Field Sites Group.



This combination of Town Lake with the Field Sites group blends two areas of similar responsibilities and duties. Operation and management of the field sites consisting primarily of drinking water production wells and booster pump stations, and sewer metering and lift stations both require similar skills to the operation and maintenance of the new hydraulically operated steel dam and lake. Both groups require knowledge of pumps, water, and electrical systems; as well as the ability to operate independently at remote sites.

As with previous management of Tempe Town Lake, the Water Utilities Operations Manager assigned to Tempe Town Lake will have the following primary focus:

- Serve as single-point of contact for TTL
- Support active stakeholder involvement
- Ensure TTL continues to provide recreational and economic development opportunities
- Manage the lake and associated infrastructure as an aquatic resource, safely and efficiently