



## MEMORANDUM

**TO:** Chair Marisa Perales and Members of the Environmental Commission

**FROM:** Michael P. Kelly, P.E., Managing Engineer, Environmental Resource Management, Watershed Protection Department

**DATE:** September 1, 2017

**SUBJECT:** The Barton Springs Pool Master Plan

In response to comments made during Citizens Communication regarding the Barton Springs Pool Master Plan at the August 16, 2017 meeting, Watershed Protection Department (WPD) provides this memo to address those comments.

### **Background**

The City Council-adopted Barton Springs Pool (BSP) Master Plan called for completion of several Short Term Projects to examine, among other things, issues of pool water quality, dam safety and pool flow conditions. WPD led the study efforts for these three items.

Prior to the adoption of the BSP Master Plan, WPD commissioned a 2006 study by Freese-Nichols of the main downstream dam that creates the pool to assess its structural integrity. A second study of the upstream and downstream dams was conducted by Datum Engineers and completed in 2013.

Next, WPD contracted with the University of Texas at Austin, Center for Water and the Environment to perform a Flow Modeling study of the Pool. The intent of the study was to understand how modifications to the downstream dam might impact the Barton Springs Salamander and sediment movement. This study was completed in June 2017.

Finally, WPD staff examined the issue of opening small gated apertures in the upstream dam to allow Barton Creek baseflows to pass through into the pool under certain conditions, rather than bypassing the pool.

### **Results**

The results of the Dam Safety study indicate that the dam is in good condition and that certain maintenance repair items should be performed to maintain its integrity. The items included patching small cracks in the dam and were completed in March 2013.

The Flow Modeling Study indicates that modifications to the downstream dam gates could have a small increase in the flow velocity along the bottom of the pool. These increases could result in

some local (close to the dam) increase in sediment movement if bottom gates were installed. WPD interpretation of the results of flow modeling is that there would be no significant improvement to the conditions affecting salamander habitat.

Staff discussions about allowing flow from Barton Creek into the pool focused on increase flow velocities and water quality chemistry. The conclusions were that the small amount flow from the upstream dam would not materially improve salamander habitat or sediment movement but would not harm habitat either. The openings would increase surface velocity in the upstream portion of the pool. In addition, operation of the upstream gates would have to be managed to exclude creek flow during periods of reduced water quality.

### **Recommendations**

Given the results of all studies, Watershed Protection does not recommend pursuing additional feasibility studies or dam modifications. There is insufficient evidence to support significant improvements to flow regime, salamander habitat and pool water quality. Given other priorities of WPD and greater benefits of improvements at other salamander sites, WPD will not be pursuing any further action on BSP dam modifications.

Should there be other drivers for dam modifications (e.g. future dam deterioration, desire to change conditions for swimmers), the Parks and Recreation Department would take the lead on directing the dam modifications. WPD would partner with PARD to optimize the dam conditions for salamander habitat, water quality and sediment movement.

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