

**WRRDA 7001 Submissions Package**  
**U.S. Army Corps of Engineers**

Proposal Name: CAVE BUTTES DAM PROJECT DAM SAFETY IMPROVEMENT/MODIFICATIONS

Submission Date: 09/16/2016

Proposal ID Number: 8c7eb20a-e934-4f16-8e2f-6419b16e5379

Purpose of Proposal: The Cave Buttes Dam and its three dikes are located North of AZ 101 and West of Cave Creek Road. The dam and dikes were completed in 1980 by the US ACE as zoned earthfill structures. At the spillway the reservoir contains 46,600 acre-feet of storage. The maximum structure height is 109 feet above Cave Creek stream bed and 2260 feet long.

Cave Buttes Dam was constructed without a downstream seepage collection system and with single 45 inch diameter outlet. Seepage appeared at the left abutment groin when the reservoir reached 22 feet below the spillway in 1993 flood event. The reservoir has never reached maximum impoundment levels. With the single outlet the maximum time to draw down the reservoir is greater than a month. FCDMC has identified a need to remediate Cave Buttes Dam by constructing a downstream seepage collection system comprised of a filter-drains with relief wells and an additional outlet (to be gated). The filter-drain system will prevent piping from developing and the new outlet will cut by half the time impoundment water is allowed to flow through and below the earthfill structures. The District is seeking federal funding for the proposed seepage collection modifications. The District is however moving ahead with its own funding with the proposed new outlet for the dam as an important “first step” risk reduction measure. That project is at 60% design level and the District is working with the USACOE for approval of the new outlet project through the 408 permitting process.

In summary, Cave Buttes Dam and Dikes requires the near term implementation of structural dam safety improvement measures in the interest of public safety, and the District is actively working toward this goal.

*1. Administrative Details*

**Proposal Name: CAVE BUTTES DAM PROJECT DAM SAFETY  
IMPROVEMENT/MODIFICATIONS**

**by Agency: Flood Control District of Maricopa County**

**Locations: AZ**

**Date Submitted: 09/16/2016**

**Confirmation Number: 8c7eb20a-e934-4f16-8e2f-6419b16e5379**

*Supporting Documents*

<b>File Name</b>	<b>Date Uploaded</b>
WRDA Cave Buttes Seepage.pdf	09/19/2016

**2. Provide the name of the primary sponsor and all non-Federal interests that have contributed or are expected to contribute toward the non-Federal share of the proposed feasibility study or modification.**

Sponsor	Letter of Support
Flood Control District of Maricopa County(Primary)	The Flood Control District of Maricopa County (FCDMC) fully supports the proposed modifications to Cave Buttes Dam. As the agency responsible for the safe and proper operation of Cave Buttes Dam, FCDMC considers the proposed modifications to be; reasonable, prudent and cost effective measures and important risk reduction measures that should be implemented for this Project.

**3. State if this proposal is for a feasibility study, a modification to an authorized USACE feasibility study or a modification to an authorized USACE project. If it is a proposal for a modification, provide the authorized water resources development feasibility study or project name.**

[x] Modification to an Authorized USACE Project : This Project is for a modification to the USACOE water resource development project, Cave Buttes Dam Project, for which FCDMC is the local sponsor.

***4. Clearly articulate the specific project purpose(s) of the proposed study or modification. Demonstrate that the proposal is related to USACE mission and authorities and specifically address why additional or new authorization is needed.***

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5. To the extent practicable, provide an estimate of the total cost, and the Federal and non-Federal share of those costs, of the proposed study and, separately, an estimate of the cost of construction or modification.

	Federal	Non-Federal	Total
<b>Study</b>	\$1,300,000	\$700,000	\$2,000,000
<b>Construction</b>	\$7,800,000	\$4,200,000	\$12,000,000

Explanation (if necessary)

***6. To the extent practicable, describe the anticipated monetary and nonmonetary benefits of the proposal including benefits to the protection of human life and property; improvement to transportation; the national economy; the environment; or the national security interests of the United States.***

The following; population, infrastructure and development located downstream of the dam benefit by the flood protection the Project currently provides: • Tens of thousands of downstream residents protected by the dam • Total number of buildings = 323,195 • Hospitals = 16 • Schools = 375 • Airports = 2 • Fire Stations = 45 • Law Enforcement Facilities= 39, includes 7 jails • Federal, State, County and local courts • Water and Wastewater treatment plants • Arizona Capital Building • Maricopa County Tax Assessor, Treasurer, Transportation Department, Flood Control District • Railroads • Utilities – Southwest Gas, Transwestern Gas, Communications Companies, Kinder Morgan, AmeriGas, Central Arizona Project, Salt River Project (electric, water and irrigation), and Arizona Public Service • Major Highways (I-17, I-10, US60, Loop 101, MC85) and a large number of major roadways

**7. Does local support exist? If 'Yes', describe the local support for the proposal.**

Yes

### **Local Support Description**

The proposed dam safety improvements for Cave Buttes Dam are supported by City of Phoenix representatives. In addition the Project has been well notified on the District's public website with no objections noted to date.

**8. Does the primary sponsor named in (2.) above have the financial ability to provide for the required cost share?**

Yes

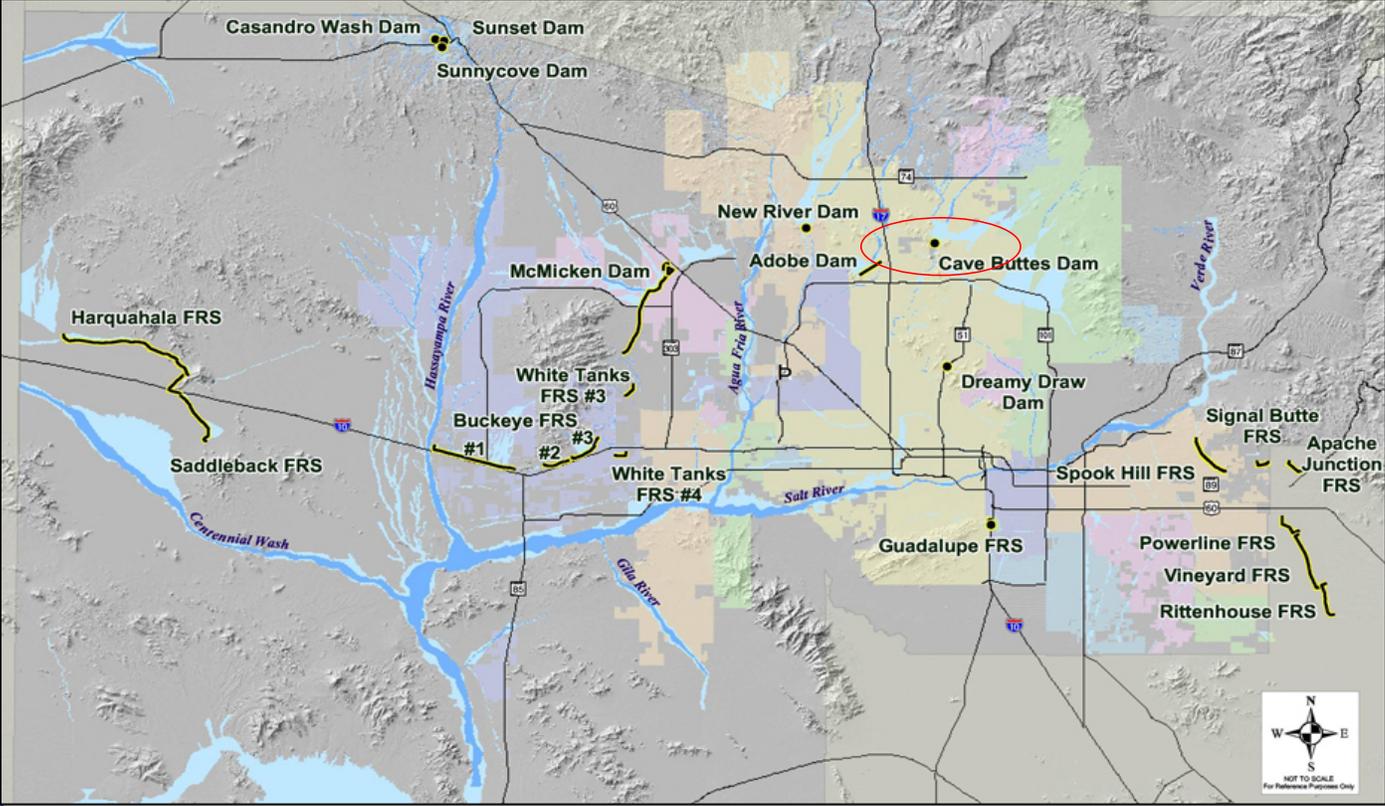
# Additional Proposal Information

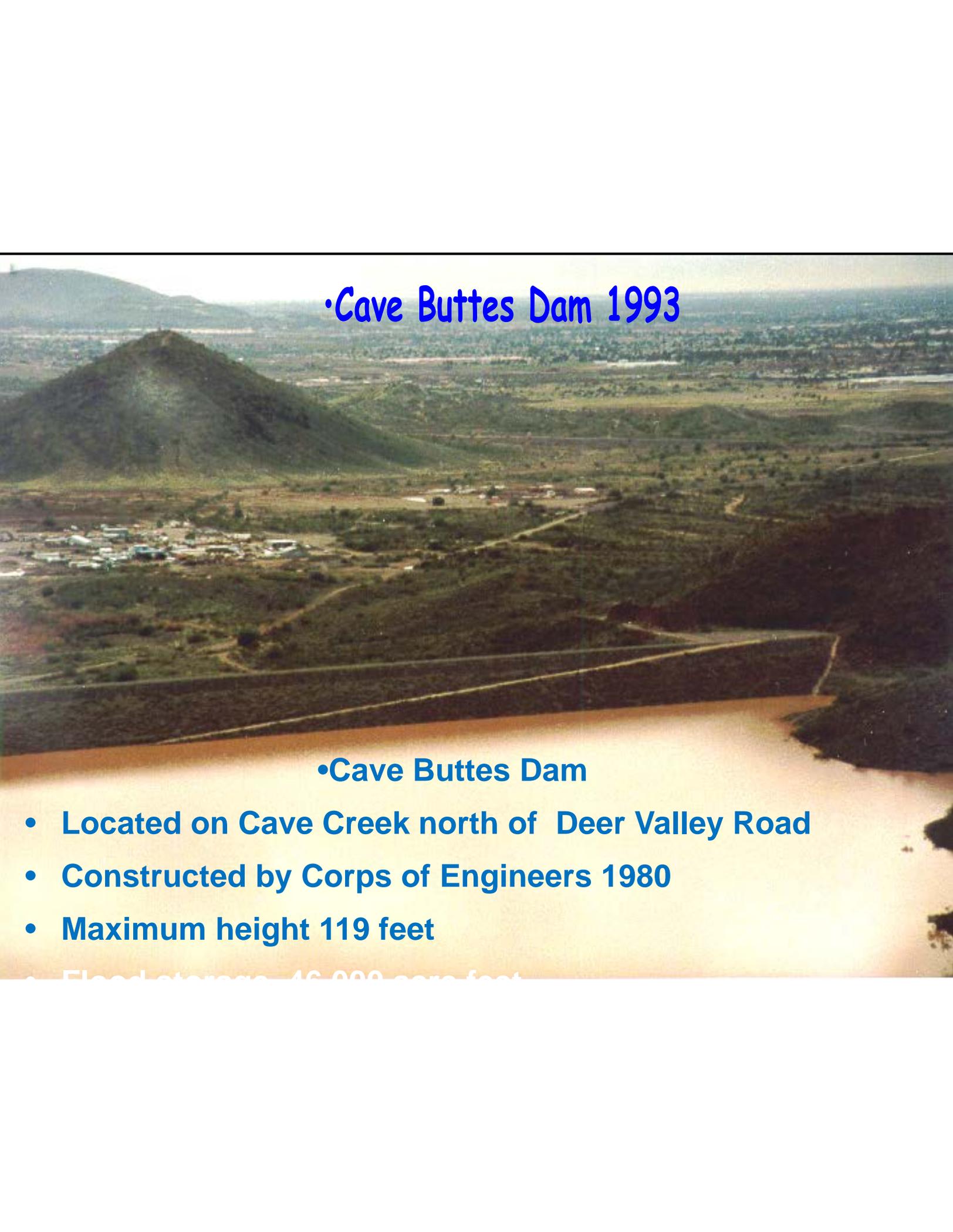
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**WRDA Cave Buttes Seepage.pdf**

# CAVE BUTTES MODIFICATIONS PROJECT

## Flood Control Dams



An aerial photograph showing a large, brownish reservoir in the foreground, with a dam structure visible. The background features rolling green hills and a small town or village. The sky is clear and blue.

## •Cave Buttes Dam 1993

### •Cave Buttes Dam

- Located on Cave Creek north of Deer Valley Road
- Constructed by Corps of Engineers 1980
- Maximum height 119 feet

• Flood storage 46,000 acre feet

# CAVE BUTTES DAM PROJECT Inundation Area

