



FACT SHEET

SUBJECT: Cherry Creek Dam Safety Evaluation Report, Denver, Colorado

PURPOSE: To provide background and general information to the public.

1. The Cherry Creek Lake project was authorized by the Flood Control Acts of 1941 and 1944 with construction completed in 1950. It was operated as a dry-dam (without permanent pool) until 1958. The project consists of an earthfill embankment with outlet works located on Cherry Creek southeast of Denver, Colorado. An existing spillway hydraulically connects the Cherry Creek basin with the adjacent Toll Gate and Sand Creek basins. Located about 12 miles upstream from the confluence of Cherry Creek with the South Platte River, the project controls 386 square miles of the 410 square mile Cherry Creek basin.

2. Corps of Engineers dams located upstream from populated areas are designed to pass a Probable Maximum Flood (PMF) without overtopping the embankment. The PMF is that flood discharge which would result from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region. It is not easily expressible in terms of a percentage of probability of occurrence in any one year since it represents a physical upper bound for precipitation. The current PMF is estimated using a site specific probable maximum precipitation estimate developed by the National Weather Service for the Cherry Creek basin. The project can safely control 75 percent of the PMF under existing conditions with adequate freeboard. The previous 1993 report indicated 63 percent of the PMF could be safely controlled. For the site specific precipitation the flood water would pass approximately two feet over the "top" of embankment if the water was unconfined. If the dam could be raised and the water confined, the water would be nine to ten feet above the current "top" (El. 5644.5) of embankment. The current Colorado Department of Transportation (CDOT) agreement allows for nine to ten feet of dam raise without impacting CDOT's Parker Road interchange plans.

3. The probability of overtopping of the Cherry Creek embankment is very remote. The maximum elevation of floodwater contained by the dam to date was El. 5565.8 on June 3, 1973 as compared to the spillway elevation of El. 5608.7. However, the consequences of such a failure would be catastrophic. The population within the potential Cherry Creek flood area downstream from the dam is estimated to be 100,000. Potential flood damages are in the range of \$15 – 20 billion for the with-dam-failure condition downstream from the dam. In addition the dam failure flow would inundate 39 schools, three hospitals, three police stations, and one fire department.

4. A 1993 reconnaissance report recommended that a Dam Safety Assurance Evaluation report be prepared to further evaluate the alternatives. As part of the study process, we are preparing an Environmental Impact Statement (EIS) to comply with the National Environmental Policy Act (NEPA). The initial scoping meeting was held in Aurora on March 4, 1997. Additional scoping/information meetings were held in Parker on July 23, 1997, in Aurora on April 21, 1998, in Denver on April 22, 1998, at Cherry Valley Elementary School on November 9, 1998, and at Campus Middle School in Greenwood Village on November 10, 1998. Another series of scoping/informational meetings, including two formal and five workshops, were held on March 8 through March 11, 1999 at various locations around the project.

The following alternatives were contained in the 1993 Reconnaissance Report and were considered for further evaluation:

Widen the existing spillway	Construct a spillway in the dam	Harden the dam face
Construct a new dam upstream	Raise the dam crest	Breach dam
Combination of the alternatives	Increase the outlet works capacity	No Federal action

Note: The above alternatives have multiple sub-alternatives.



The following alternatives were added based on the scoping meetings:

- ◆ Increase downstream capacity of Cherry Creek
- ◆ Deepen lake to increase storage capacity
- ◆ Use abandoned quarry pit to store floodwater
- ◆ Construct several smaller dams upstream with or in lieu of the one larger dam upstream.
- ◆ Non-structural alternatives
- ◆ Operational alternatives
- ◆ Flood proofing
- ◆ Flood Warning System
- ◆ Tunnels and Pumps
- ◆ Diversion Channels

5. Alternatives still being evaluated are as follows:

- ◆ No Federal action.
- ◆ A stand-alone dam raise on Cherry Creek Dam of approximately 15 feet in height.
- ◆ A stand-alone spillway on the Cheery Creek Dam embankment with possible spillway crest elevations varying from 5600 feet to 5623 feet in elevation.
- ◆ A spillway in combination with a dam raise on the Cherry Creek Dam. The dam raise will be of a height ranging from 3 feet to 12 feet. The best spillway crest elevation, spillway width, gates, etc., will be determined during the detailed analysis at the remaining alternatives.

6. At the time of the 1997 and early 1998 meetings, the Corps had preliminarily dismissed investigating solutions requiring upstream dry-dams. However, as investigations regarding cost and downstream loss-of-life progressed and as downstream entities concerns became known, the need to further investigate an alternative that included an upstream dry-dam became necessary. As a result, the Corps attempted to organize and conduct additional public meetings that were targeted at upstream stakeholders. Those meetings were not highly successful, due to a problem with the mailing of meeting notices. The Corps, with local stakeholders assistance, further developed its list of stakeholders and conducted additional public meetings and workshops on March 8, 9, 10, and 11, 1999. Based on comments from the March 1999 meetings, the NWS has been requested to conduct a public meeting with the Corps on June 22, 1999 in the Denver area.

7. Preliminary studies indicate that no permanent changes to the current lake levels or recreation facilities are anticipated to result from any of the alternatives currently being evaluated. Possible modification(s) to the dam and/or spillway structures would only affect the ways in which stored water may be released from the project during and after extraordinary flood events.

8. Additional information on the Cherry Creek Dam Safety Study can be viewed by visiting our web page at: <http://www.nwo.usace.army.mil/html/gis/hydro/cherrycreek.html>

9. Written comments can be submitted on the Project, please mail your letter to:

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