Fort Smith
Regional Water Supply Project Update
Summer 2000

Highlights:

- Study to examine feasibility of using the new Lake Fort Smith to support a trout fishery in Frog Bayou
- The Arkansas Department of Environmental Quality will require a minimum flow downstream of the new dam
- Plans for new state park becoming more clear
- Fort Smith to trade land with the U.S. Forest Service

Trout in Frog Bayou's Future? Study to Determine Feasibility

Few recreational pursuits generate more devotion in their practitioners than trout fishing. As a result, trout are among the most highly sought-after and managed game fish species in the world. Trout are cold water species that do not tolerate water warmer than 70 degrees Fahrenheit. The natural habitat of trout, therefore, is typically lakes and streams in northern latitudes or high elevations. The construction of large reservoirs, however, has extended the range of trout into areas such as the southeastern United States that would usually be too warm.

During the winter, reservoirs are generally the same cool temperature from top to bottom. As the days become longer and warmer in spring and summer, sunlight entering the lake is absorbed by the water and the temperature of the water near the surface, where most of the light is absorbed, increases. The warm water is less dense and floats on the cooler water below. With the help of wind, the warm water creates a layer that isolates the colder water in the bottom of the reservoir from the atmosphere.

Water released from the cold bottom layer of water in a reservoir can provide water cool enough to support trout in streams or rivers downstream of the dam. Arkansas has a half-dozen such streams. The only natural trout habitat in Arkansas is downstream of Mammoth Springs.

Some citizens in the region around Fort Smith, with support of the local Arkansas Game and Fish Commission office, have expressed a desire to have releases from the new Lake Fort Smith managed to support a trout fishery in Frog Bayou. The Board of Directors of the Fort Smith Utility Department has agreed to investigate this potential benefit from the new lake and has hired Burns & McDonnell to conduct a feasibility study.

The feasibility study will have several major components:

- Compare the new Lake Fort Smith to reservoirs in Arkansas and other states that have downstream trout fisheries
- Determine how much water would need to be released from Lake Fort Smith to support a trout fishery in Frog Bayou
- Estimate the amount and temperature of the cold water in the new lake and determine the rate at which this water can be released
- Model the temperature of the water in Frog Bayou based on input from tributaries and other releases of water from the new lake
- Estimate the cost to implement a trout fishery in Frog Bayou

The estimated completion date of the feasibility study is November 2000.

Minimum Flow Release

To construct the new dam, a permit to place fill material into waters of the United States is required from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. A necessary prerequisite for receiving this permit is a Section 401 Water Quality Certification from the Arkansas Department of Environmental Quality (ADEQ). According to Arkansas Pollution Control and Ecology Commission regulations, all streams in the Boston Mountains Ecoregion with watersheds greater than 10 square miles should have a discharge greater than or equal to 1 cubic foot per second and should support a Perennial Boston Mountains Fishery. Because the watershed for Lake Fort Smith is approximately 70 square miles, the ADEQ has stated issuance of a Section 401 Certification is contingent on the new lake providing a minimum flow release to restore the perennial nature of Frog Bayou that was lost when the lake was constructed in 1936.

The city of Fort Smith has proposed to meet this requirement through a combination of the discharge of clarified filter backwash water from the Mountainburg Treatment Plant and intentional releases of lake water through the intake structure.

Rainbow trout

Park Plans

Planning for the new state park focuses on an approximately 90-acre area just west and north of the Lake Shepherd Springs dam. Preliminary plans show a visitor information center, boat ramp, marina, swimming beach, recreational vehicle camping sites, a lodge, and cabins. Numerous shelters for day users are also shown. A new section of the Ozark Highland Trail will loop around the north end of the new lake and connect the new park with the existing trail. Considerable additional area is available for future expansion.

Flow down Lake Fort Smith spillway (Approximately 100 cubic feet per second).

Land Exchange

The outline of the new Lake Fort Smith and State Park will overlap land currently owned by the U.S. Forest Service. To provide better protection of water quality in the new Lake Fort Smith, the city is seeking to acquire these properties. The Forest Service will not sell its land. Rather, the service will exchange its land for equivalent parcels. The Forest Service has stipulated it will not exchange parcels smaller than 40 acres.

The city of Fort Smith has identified 540 acres of Forest Service land around the new Lake Fort Smith it wishes to acquire. Forest Service lands are being inventoried so that the city can exchange lands of similar quality. The transfer of land from Forest Service to municipal ownership is a federal action with potential environmental impacts. This action will trigger requirements of the National Environmental Policy Act, specifically, the preparation of an Environmental Assessment (EA). This document will disclose to the public the impacts of the land trade on the environment. During preparation of the EA, the public will be provided the opportunity to comment on the proposed exchange of land.

The City of Fort Smith ARKANSAS

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