Fort Smith Regional Water Supply Project Update

Fall 1999

Highlights:

- Federal permitting and the National Environmental Policy Act.
- Areas of potential environmental impacts.
- Additional field investigations for soils, wetlands, and cultural resources.
- Flood flows and spillway design.
- Designs for the new state park focus on the west side of Lake Shepherd Springs.

More Field Work Conducted at New Lake Fort Smith Site

The decision to provide new water supply by expanding Lake Fort Smith to a normal pool elevation of 911 feet above mean sea level (msl) has cleared the way for the start of permitting and design.

Because construction of the new lake would require placing materials in Frog Bayou and inundating some wetlands, a permit is required from the U.S. Army Corps of Engineers (the Corps) under Section 404 of the Clean Water Act.

Granting this permit constitutes a "federal action" for which the environmental impacts must be publicly disclosed in accordance with the National Environmental Policy Act. Much of the information regarding the environmental impacts of the project has already been incorporated in a preliminary draft environmental assessment. The assessment, however, was based on an enlargement of Lake Fort Smith to a pool elevation of 885 feet msl. Additional data is being gathered to determine the impacts of raising the pool to 911 feet msl and constructing a new state park. The draft environmental assessment should be completed in the next few months.

Facets of the project that would affect areas around the lakes include:

- Construction of the dam and spillway
- Materials and equipment staging area
- Downstream channel modifications
- Treatment plant modifications
- Haul road
- Construction of the new state park west of Lake Shepherd Springs
- Access roads from the state park west to Highway 71

The areas where impacts to the environment could occur are shown on the following page. Because the exact routes of the haul and access roads have not yet been determined, the areas shown as potentially impacted by roads are much larger than they will actually be. Where appropriate, additional data will be collected from within the potentially impacted areas to assess the effects the project will have on natural and human environments.

Wetland Survey

Burns & McDonnell biologists mapped the locations of wetlands that would be inundated by the new lake, damaged by construction activities, or affected by changing the water level in Lake Shepherd Springs. The biologists also identified areas where new wetlands might develop and replacement wetlands could be constructed. In total, the project would inundate nine acres of

wetlands when the level of Lake Fort Smith is raised and change the hydrology of 18 acres of forested and shrubby wetlands currently around Lake Shepherd Springs. The Corps requires that each acre of lost wetlands be replaced with one or more acres of new wetlands. Recently collected data indicated the wetlands around Lake Shepherd Springs will naturally relocate to the new water level, and enough additional acres may develop to offset the wetlands that would be inundated above Lake Fort Smith.

Cultural Resource Survey

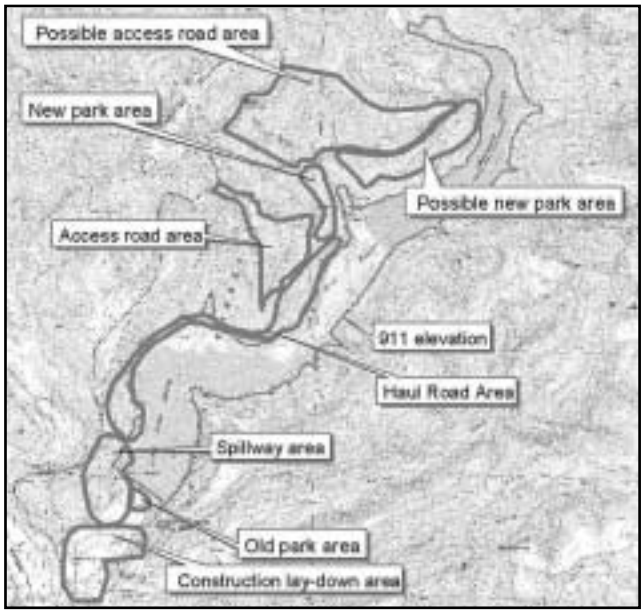
Construction of the new lake and park would impact several known historic sites including two old burial sites and park facilities built in the 1930s. The loss of undiscovered prehistoric sites is also possible. In accordance with the National Historic Preservation Act of 1966, Burns & McDonnell archaeologists will survey the potentially impacted areas for previously undiscovered archaeological sites. Known and newly discovered historic and prehistoric sites will be evaluated for their eligibility for the *National Register of Historic Places*. An architectural historian will evaluate the old park buildings. If eligible cultural resources are identified in the impact area, a mitigation plan will be developed in cooperation with the State Historic Preservation office. This plan could include the excavation of archaeological sites and the documentation of historic structures.

Errata

The previous Update incorrectly stated the volume of new Lake Fort Smith and Lake Shepherd Springs combined. The correct comparison is 3.2 times larger. Other descriptions of the new lake were accurate.

Soil Testing

The new dam will contain a water-tight core of high clay-content soils to prevent water from filtering through the structure. Some of this material will be obtained from the Lake Shepherd Springs dam; however, a large amount of new core material will be needed. Geotechnical engineers from Shannon and Wilson, Inc., sampled the soils between Lake Fort Smith and Lake Shepherd Springs. These samples are being evaluated to determine the amount of available core material. If additional soil is needed, promising areas within the basins of the two lakes, particularly around the north shore of Lake Fort Smith, will be further investigated.



Areas around Lakes Fort Smith and Shepherd Springs potentially impacted by construction. Only one access road to the park will be built; however, the location of this road has not yet been decided.

Dam Design

A critical design feature of the new dam is the spillway. The spillway must safely pass the largest possible flood event and not increase downstream flooding during flood events as large as those that occur once every 100 years. Analysis of the watershed and historic rainfall data indicated the flow during a 100-year flood is approximately 1 million gallons per minute, and the probable maximum flood would flow at nearly 73 million gallons per minute. Based on these flows, extensive hydraulic studies are being conducted on the spillway design to assure the new dam will meet regulatory requirements and will not increase downstream flooding. Such assurances are necessary for the Corps of Engineers to approve the project.

New State Park

Merlin E. Seamon Associates has been retained to assist the city and the Arkansas Department of Parks and Tourism in the design of the new park. Preliminary designs are under way for a park that would include a swimming pool, cabins, day-use areas, camping areas, a visitor center, marina, and trails for hiking, biking and horseback riding. Initial plans show the park on what is now the west shore of Lake Shepherd Springs just north of the dam. The specific locations of the facilities are being evaluated based on characteristics of the available land and buffer zone requirements for water supply lakes as required by the Arkansas Department of Health.

The City of Fort Smith ARKANSAS

For more information, please contact:

Utility Department
3900 Kelley Highway
Fort Smith, AR 72904
(501) 785-2801

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