

Fort Smith Regional Water Supply Project Update

Winter 2003

Highlights:

- Construction progress continues along roadways
- Erosion controls put in place
- Preparation of borrow areas nearing completion
- Acquisition of impervious fill is ongoing
- Preparation of Contract 2 plans and specifications continues
- Almost all engineering decisions have been made for the design of the dam and spillways
- Cultural resources dating back to 6000 B.C. have been found in the project area
- Archaeological excavations will start again in early spring

Preparations for Dam Construction Continue

Preparation of the foundation for the dam continued as clearing and grubbing were completed along the base of the existing dam and abutments. Grouting to seal joints in the bedrock beneath the foundation is approximately 60 percent complete. Rock bolting and concrete spraying are proceeding to stabilize the excavated rock faces.

Excavation of overburden for the outlet works tunnel portal is roughly 50 percent complete, and work on the 66-inch casing excavation across Lake Fort Smith Road at the south end of the Warloop Creek Bridge is nearing completion.

Road Work

Expansion of the dam requires the relocation or improvement of several roads. The portion of God's Ranch Road that runs along the east side of the existing dam is being relocated farther east to accommodate the larger dam. At this time, the removal of dirt and loose rock from the new alignment is approximately 25 percent complete. (See the map on page 2 for the locations of active construction sites.)

Lake Fort Smith Road is being improved, in part to handle the demands of construction traffic. The installation of reinforced concrete pipe storm drains, curbs, and guttering with inlets and widening of the asphalt sur-

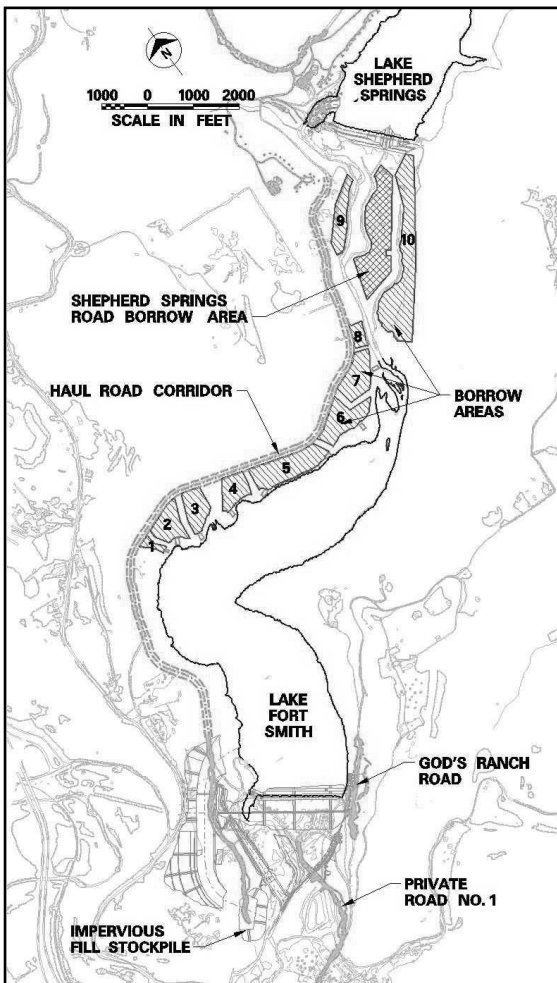
face has been completed on Lake Fort Smith Road. Improvements to the Warloop Creek Bridge have been completed, and the detour around Warloop Creek Bridge has been removed.

Clearing for the realignment of Private Road No. 1 is complete. The intersection of Private Road No. 1 and Lake Fort Smith Road was covered with asphalt and is complete. Excavation for a box culvert across Private Road No. 1 is 50 percent complete. This road will be the main contractor access road during construction of the new dam. When the project is complete, the road will provide service access to the dam.

Impervious Fill Acquisition

The central feature of the new Lake Fort Smith dam is a core made of impervious fill. This material is being mined from areas above Lake Fort Smith and transported to a stockpile just below the dam site. To contain runoff from the stored fill material, erosion control has been placed around the stockpile area and construction of the sediment trap has been completed.

Clearing and grubbing for the haul road was completed and construction of a haul road to Borrow Area 5 has been completed. Erosion control was put in place along the west side of Lake Fort Smith reservoir to contain stormwater runoff from the haul road and borrow areas.



Location of current construction efforts

Contract 2

The work to be completed under Contract 2 will include the building of the dam and spillways. Design decisions for the dam have been made and the preparation of final drawings is in progress.

A major design challenge has been the auxiliary spillway. The structure is designed to carry water safely around the dam in the event of 100-year or greater floods. The geologic investigations revealed additional inactive, ancient faults and other features, some of which appear unique to the Boston Mountains. Specialists have been brought in from across the country to help analyze the rock formations.

After several rounds of investigations and design revisions, almost all of the design decisions for the auxiliary spillway have been made. The design process was facilitated by the development of a computer-aided drawing and design model of the spillway and underlying geology.

Designs for dam safety monitoring are also nearly complete. The state-of-the-art monitoring system will include piezometers (water level observation wells), inclinometer (to detect changes in slope), and movement sensors. Data from these monitors may be transmitted directly to the water plant so the status of the dam can be continuously monitored and rapidly evaluated. This type of monitoring system is standard equipment for any large, modern dam.

The final bid documents for Contract 2 are expected to be released by the end of March.

Cultural Resources Moves to the Next Phase

At the beginning of the project, 98 cultural resources sites were recorded. Of these, Phase 1 testing indicated 23 sites were potentially eligible for listing on the National Register of Historic Places. During the fall of 2002, the field work for Phase II testing was completed for all of these 23 archaeological sites. The purpose of Phase II testing is to provide a definitive evaluation of a site's eligibility for listing.

The Phase II work used a grid system and a combination of shovel testing and hand excavations of one-meter square units. The last site to be tested was a prehistoric cultural material scatter. This site contains components from at least two time periods. The earlier of these occupations dates to the Middle Archaic period (6000 to 3000 B.C.) and the later to the Fourche Maline phase, which dates from around 300 B.C. to A.D. 800. Results of the Phase II testing indicated construction of the new lake will impact seven sites eligible for National Register protection.

A new phase of excavation, Phase III mitigation, began in the later part of 2002 with the excavation of three eligible sites (Fort Smith Update, fall 2002). "The next round of excavations is set to begin in the early spring and continue well into the summer. The remaining four sites are all prehistoric, and the crew is enthusiastic about the work," said Jason Roberts, crew chief of the archaeological investigation.



Test pit at a bluff shelter site



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