Meeting of 2004-12-6 SPECIAL MEETING

MINUTES
LAWTON CITY COUNCIL SPECIAL MEETING
DECEMBER 6, 2004 - 6:00 P.M.
WAYNE GILLEY CITY HALL COUNCIL CHAMBER

Mayor John P. Purcell, Jr. Presiding
Also Present:
Larry Mitchell, City Manager
John Vincent, City Attorney
Kathy Fanning, City Clerk

Mayor Purcell called the meeting to order at 6:10 p.m. Notice of meeting and agenda were posted on the City Hall notice board as required by law.

ROLL CALL
PRESENT: Bill Shoemate, Ward One
Rex Givens, Ward Two
Glenn Devine, Ward Three
Robert Shanklin, Ward Five
Stanley Haywood, Ward Seven
Randy Warren, Ward Eight

ABSENT: Amy Ewing-Holmstrom, Ward Four
Jeffrey Patton, Ward Six

BUSINESS ITEMS:

1. Consider discussing construction alternatives for transferring water from Lake Waurika and Lake Ellsworth and authorizing staff to prepare plans and specifications for the preferred alternative. Exhibits: Memo from Public Works Director dated November 17, 2004.

Jerry Ihler, Public Works Director, presented an Engineering report giving several alternatives for transferring water within the existing system from Lake Waurika to Lake Ellsworth to Lake Lawtonka. The report evaluates the cost benefits and the additional duration that could be added during a prolonged drought period to be able to continue to provide a water supply to the citizens.

Ihler stated the operation of Lake Lawtonka is by gravity flow to the Medicine Park treatment plant. When the lake elevation gets down to 1,341, or approximately 4.5 feet down from the top of the gate, pumps are activated at Lake Ellsworth sending water through a 12 mile, 42 pipeline to Lawtonka. The pumping policy provides that when Lake Ellsworth gets down ten feet from the top of its gate, pumps are activated at Lake Waurika sending water through a 42 pipeline to the Lawton relift station, and then to the east side of the dam at Lake Ellsworth. The first use is from Lake Lawtonka, then Lake Ellsworth, then Lake Waurika.

Ihler said Lake Lawtonka is the primary water supply for the Medicine Park treatment plant. The normal pool operating level elevation is based on the Oklahoma Water Resources Board dam safety requirements to be able to pass a 500-year maximum probable flood. To do that through our dam and when those storms occur, we must have the operating pool levels at those elevations shown in Table One, 2.2 feet down at Lawtonka and 2.5 feet down at Ellsworth. Lake Lawtonka contains 37,000 acre feet; Lake Ellsworth contains almost twice as much as Lake Lawtonka, and Lake Waurika has about five times that of Lawtonka, but the City receives only 60% of that so our actual usage is 110,000 acre feet at Waurika.

Ihler presented Table Two showing the present water supply and durations. If drought conditions exist and no additional runoff is received, the water supply would run out at Lake Lawtonka after a 14-month period. With the ability to pump from Lake Ellsworth, it increases that duration from 14 months to 27 months, and with the ability to pump from Lake Waurika, it increases that duration for a period of 43 months. Ihler presented Table Three showing existing conditions and explaining how improvements would increase available water supply depending on water supply levels and drought factors.

Ihler stated the weak link in the system is at Lake Ellsworth when the water elevation gets down to 1213 and the

pumps can no longer be used to transfer water to Lake Lawtonka. Attempting to pump after that level is reached would cause damage and cavitation to the pumps. Ihler said there is a similar problem at the water treatment plant; at elevation 1320, which is about 25 feet down from the top of the gates, water can no longer gravity flow from Lake Lawtonka into the Medicine Park water treatment plant and provide enough head to be able to push it through the water treatment plant with a gravity system, so there would be serious trouble in that water could not be treated and sent to town.

Ihler provided and discussed five alternatives, with one being to do nothing which would not have any associated cost but would also not correct the problems.

Alternative 1A: The 42 raw water line from Lake Waurika enters Lake Ellsworth on the east side of the spillway. The Fort Sill National Cemetery will connect to the Waurika pipeline downstream of the surge tank 900 feet south of the spillway. This alternative would construct a new 36 line connecting the proposed 36 line to be installed by the cemetery. Once inside the pump station, the new pipeline would transition above grade and connect to the existing 36 line leading from the intake structure at the pump header, connecting directly to the existing pumps. Estimated cost is $391,000.

Alternative 1B: Construct a new 36 line connecting the proposed 36 line to be installed by the cemetery. Once inside the pump station, the piping would transition above grade and continue through the pump station and down the corridor leading to the intake structure, parallel to the existing 36 pipe. The ultimate connection to the intake structure would be through a 36 wall sleeve installed with the original construction. Estimated cost is $513,000. There was a little concern about the velocities coming through the pipe, it was an engineering function to look at it and we added a second pipe to be able to reduce the velocities where one pipe takes water to Lake Lawtonka and then the other pipe would gravity flow to the Southeast Water Treatment Plant. The benefits are not that different so this alternative is not recommended.

Alternative 2: Provide two low-lift/high volume booster pumps attached to the intake structure. Cost estimate is $281,000. The advantage is the lower cost but a major disadvantage is that when we get around 1200, we will no longer be able to pull out of the lake and we are back to the same situation we are in, we just have about 13 more feet that we could pump, but if we have a really severe drought, we still could not use the Waurika water if we get below that level.

Alternative 3: Provide a new 36 line from the Lake Ellsworth outlet structure and proceed along the face of the dam spillway to the intake structure. 40 diameter holes would need to be drilled through the outlet and intake structure walls and most of the construction would have to occur at or below the water surface elevation. Estimated cost is $489,000. Major disadvantage is the cost associated with extensive construction, most of which would take place under water. This would also create problems in future inspections and debris could damage the line when the gates are operated. This alternative is not recommended.

Ihler summarized the alternatives shown.

Shanklin asked if the 42 line comes in at a sluice gate. Ihler said no, this slide is on the west side where the pump station is located but it is the same configuration on the east side on the bottom except you do not have these draws at an upper level so we will have to modify the east side for part of the Southeast Plant to be able to pull out at different levels of the lake and improve the quality, and that cost is shown as $100,000. Ihler said that must be done even if the do nothing alternative is chosen.

Ihler said Alternative 1 is at a lower cost but long-term maintenance and operation costs would be higher due to the need for a diesel-powered generator. He recommended Alternative 1A as the most cost effective measure, when construction, maintenance and operational costs are considered.

Shanklin said years ago we went to Waurika and they made the statement they could pump the water all the way to Mount Scott, which was not true evidently. He asked if we have to use the relift pump station to take it on to Lake Ellsworth. Ihler said yes. Shanklin said those three pumps alone could not get it there. Ihler said we cannot pump from Lake Waurika to Lake Ellsworth without using the relift pump station.

Ihler said eight inches of rain were received during November, causing Lake Ellsworth to rise about five feet. Drought conditions have existed for the prior three years; the lowest point at Ellsworth was on October 6, 2004, where it was down 15.55 feet, but is now up 18.4 feet, so October and November have been very generous to Lake Ellsworth in runoff. The lowest point at Lake Lawtonka occurred a year ago today and that was 1338.4 so in the last year it has risen 4.6 feet.

Ihler explained previous CIP expenditures, project deferments and savings. Recommended funding source is the 2000 CIP. He said $4 million in water line projects had been deferred and may be able to be reinstated if revenues and interest are good. Design will not be completed until March and at that time the amount of funding available will be known.

Warren asked if the choice would still be 1A if it were not for the funding difference. Ihler said yes.

MOVED by Warren, SECOND by Shanklin, to direct staff to move forward and prepare plans and specifications for Alternative 1A. AYE: Givens, Devine, Shanklin, Haywood, Warren, Shoemate. NAY: None. MOTION CARRIED.

There being no additional business to consider, the meeting adjourned at 6:40 p.m. upon motion, second and roll call vote.