

CITY COUNCIL WORK SESSION
MARCH 25, 2004
7:00 PM
RANSOM CANYON CITY HALL

A special work session for the city council of the Town of Ransom Canyon was called by Mayor Robert Englund to discuss various water issues that were under consideration.

Mayor Englund called the meeting to order. Council members Leon Whetzel, Inez Speed, Dick Hulslander, David Peterson and Glen Robertson were present. Engineers Bernie Gradel and Jimmy McDaniel were present. Fire Chief Rand McPherson and Police Chief Wayne Rawls were present. Guest Alderman-elect Ron Cox was present. Operations manager Harold Needham was present. Melissa Verett was not present. Minutes are produced from recording.

Police Chief Wayne Rawls told the council that Ransom Canyon did not get the Cops Fast Grant. The COPS grant program is not accepting new applications. Equipment for a third officer is budgeted. The need for a third officer has not changed. Robert asked the council what they wanted to do. Leon suggested that this is a budget time discussion. Glen agrees that the need is there, but believes that this is a budget decision. Inez had no opinion at this time. David wanted to look at budget numbers. Dick believes data shows a need for a third officer. He also wants to see budget numbers. The officer is probably affordable, but he would like to see trending into next year. Robert asked Wayne to put together the cost for 1 officer for next meeting. The industry standard suggests 2 police per thousand people.

The council discussed the latest issue of the TML legislative update; specifically Gov. Perry's proposals regarding tax increase limitations, and other unfunded mandates. Glen Robertson commented that the appraisal district would adjust to raise revenues from commercial property, so the commercial property will take a hit. Ransom Canyon will not do well if this happens. Glen commented that tax dollars come from commercial, and freezing residential will not be good for Ransom Canyon, (because we have no commercial.) Inez suggested alternative lake based revenue raising projects.

Glen commented regarding the police officer that there is \$7k already in this year's budget and \$14k next year. This money is already in budget. We would be coming up with \$7k. Just a thought.

Jimmy McDaniel and Bernie Gradel had graphs and charts and tables here and there and they initiated discussions about each scenario that had been proposed for the water tower improvement project. Bernie went immediately to the summary page, and worked his way back to review each scenario. There were several variables in the study, fire hydrant flow pressures, booster pumps at Buffalo and at the water house, ISO required fire hydrant and water supply minimum requirements, maximum capacities and maximum demands. The system summary tables. Fire flow trends. And finally, the effect of the water quantity and psi provided from the City of Lubbock.

Some data was based on theory. but they did run actual flows on fire hydrants. Some were actual, some were calibrated. The fire flow models assumed actual demand in worst case.

(ISO) Insurance requirements were discussed. 1,000 gpm used. Rand and Bernie are still trying to find out what the ISO requirement meant. ISO tests psi. It does not take into account number of residences, per Chief Rawls.

Rand explained that the requirement describes the requirement for the delivery of water specified rate of flow for specified period of time. Minimum is 500 gallons per minute (gpm) for residential with houses 10-20 feet apart. Commercial max of 1000 for 2 hours. Ours would be the minimum for residential.

Bernie said they are trying to find out for sure what that magic number is. Glen asked how many times would ISO check during times of a worst-case scenario? If ISO checked it, it would be lower than at total peak demand. The engineers made these common assumptions. 1000 gpm demand, worst-case scenario throughout. Booster pump is 500-gpm capacity, from City of Lubbock contract.

There were many references to charts, and promises for color charts for the next council meeting.

Some questions remained unanswered such as the same passive lows on power tests given different Ground storage, elevated storage, same 2004 maximum.

In the report produced for the council by Hugo Reed these scenarios were proposed.

Based on the results from scenario 3, an elevated storage tank with a capacity of 350,000 gallons could be used to meet both the minimum elevated storage volume and total storage volume required by the state regulations.

Five scenarios were presented. Scenario one compared field data to compare with model results. Fire hydrant pressure readings were taken. The inclusion of the booster pumps was not necessary because this was winter. The pressures varied from 68 psi to 115 psi static, and from 8 to 18 flowing. The model results and the actual results differed by less than 5 percent. There was a problem with the pressure reducing valves. The modeled pressures correspond well with the actuals. But there are unexplainable differences that cause pump discharge discrepancies. This could be because of incorrect assumptions, differences in pipe diameter. After all of the studies, the model for a 350,000 gallon elevated storage tank was believed to be sufficiently accurate.

Scenario 2 operates marginally for 2004 maximum demands. The minimum pressure remains at 40 psi on top. On the bottom is 57 psi. But the psi's drop for future demand scenarios.

Scenario 3 includes new storage tank of one 350,000 tank that replaces the town hall pumping and ground storage facilities. This new 350,000 tank would be sufficient for all assuming it would stay 50% full. Minimum pressures are above 57 and 52 Pounds per Square Inch (psi) in upper and lower pressure zones for all demand scenarios. Additional capacity at the booster pump station will be required to serve the towns ultimate demand while maintaining enough storage for non-fire emergency situations.

Fire flow analyses in each scenario were performed for each demand condition. The elevated storage tank scenario meets the assumed fire flow constraints. The study charted distribution system alternatives for improved fire flow performance. Percent passing assumed constraints were best with upgrades to mains and laterals. The next highest percent passing were from the Creation of main loops.

Scenario 4 assumes the existing ground storage tanks at city hall act as elevated storage to connections in the lower pressure zone. It also includes a new elevated storage tank that serves the upper zone. . The town's ultimate demand was determined to be 300,000 if the tank remains 50% full. Additional capacity will be required at the booster pump station. Under this scenario pressures would fall below 35 Pounds per Square Inch (psi).

Scenario 5 assumed the town hall pump station and ground storage tanks fed water to the bottom. A new tank serves the top. 300,000 gallons is okay if it remains 50% full. Additional capacity will be required to serve the towns' ultimate demand. 1500 gpm is the model to meet ultimate demands. This scenario is better equipped to meet fire demands than scenario 4. This assumes the town will reach 771 connections. Pressures remain above 35 psi. But the tank levels decline rapidly while the ground storage tank is filling.

Half recommends that RC proceed with design plans and specs for a new tank of 350,000 gallons. A smaller tank would still meet state regs. Hugo Reed recommends that the town hall pump station be decommissioned for simplicity sake and to reduce operation and maintenance cost. Some level of supervisory control and data acquisition SCADA software should be provided with the elevated storage tank.

Future capacity upgrades will be required for the booster pump station. Timing depends on Ransom Canyon growth. This is expected to happen at 771 connections.

Hugo reed also recommends the elevated storage tank and increased capacity at the booster pump station, but upgrades to the distribution system piping will also be required to supply fire flow demands at flow rates equal to the flow rates required by the City of Lubbock. Half recommends that the town review the fire flow levels they desire. If fire flow protection is a priority RC should budget for replacing 2,000 t 3,000 linear feet of undersized pipe each ear in its water capital improvements program. Different approaches to this were suggested, but half recommends that Ransom Canyon adopt a minimum line size of 8 inches for all new pipe constructed in the town.

Half also recommends that Ransom plan begin planning for increased redundancy in its water supply system. These additional recommendations are made based on possible weaknesses observed in Ransom Canyon's water supply system. At present Lubbock supplies water to RC via a single 12-inch line. It is not known if Lubbock has sufficient delivery capabilities to maintain at least at 35 psi at the town's connect at ultimate demands. RC and Lubbock may both benefit from

the addition of a parallel supply main. If a failure occurs in one line, the other can continue to provide service. The additional main should also reduce Lubbock's pumping costs. It is suggested that RC review its contract with Lubbock and take steps to plan for a dual supply line. Also RC should plan to upsize its 6inch supply main. If the parallel 10-inch line fails, head loss across the 6 inch main will be too high to maintain service. Also the booster pump station should include sufficient redundancy to meet the town's maximum demands with one pump out of service.

Glen thinks there might be a skew because some lots are unbuildable. Some estimates will be too high. Leon, in the past, used 600 lots. Some legwork, get the maps and look. What lots are buildable? Big question about how many lots. Glen suggested that the model could be reduced by 10%.

Leon remembered that numbers seemed to have been 500 gpm in 1998. There are 453 water connections now. 800 ultimately.

Is 1000 gpm too much? Rand says how close buildings are to each other. Proximity good, but with USO 60% wood roofs hurt us. There was a lively discussion about fire fighting capacity, supply and demand, and fire hydrants to feed trucks.

Glen Robertson said scenario 3 is best; perhaps adjust the build out down, and in the future upgrade lines.

Bernie says state minimum calls for 50% floor in storage tanks. The original engineer estimate was for a 100,000 gallon tank plus pump station = \$335,000. The prices go up, 232,000 gallon = 250k, 320,000 gallons \$500,000. 517,000k

The engineers need to find 10%? 50 or 100 fishing lots? Robert asked Bernie to attach a price tag to the tank sizes, as he put the scenarios together.

2 weeks. Detailed studies show 1000 gpm is needed for fire requirements. ISO is now at 7. Buffalo is a six. The wood roofs hurt us. No guarantees.

Some question about full built out scenario. Bernie reminded us to continue to take advantage of power now being supplied by Lubbock.

Both lines are being run at this time.

Before council meeting they will recount the build out and take it off the scenario.

Try to find 700 lots.

Tower will be 50 feet in the air to get 50 psi.

What could be done with extinct tanks? Storage? Discussions about how to reach budgeted \$330,000. Tanks are standard sizes.

Harold is concerned about the recommendations for minimum water lines and the contract with the City of Lubbock. If Buffalo had a big fire, response from Lubbock could shut Ransom Canyon down. Fire is a big consideration.

Leon says as we look at the water system, we should also take a hard look at the sewer system lines. Over 40 years, much erosion is bound to have occurred. Glen asked if larger size tank would create as much pressure as elevation. Bernie says South Rim is ripe for build out, and thinks some of the questions are created because the model does not take the south rim into account.

Glen said do the big lines first. Some discussion about water lines and plans for line replacement.

The agenda moved on.

Cory Needham accepted the job per our guidelines. \$28000, plus \$500 for each license. Melissa is seeking to fill receptionist job. City hall has been busy starting Incode system. Melissa saved the city 4k, but is requesting a cash collections program, must go to council. Request for 300 motorcycles in a parade permit. We have no parade permit. For family outreach. 10 minutes for drive through. Future parade permits requirements?

Glen Robertson moved to adjourn; Inez Speed seconded the motion, all approved.

Melissa Verett
From recording.