budget were both approved unanimously. Revenue to operate and maintain TLWWTF comes from the three owner districts, which contribute varying amounts based on percentages of biological oxygen demand (BOD), flow, sludge removal, and construction projects. Figures for 2017 and estimates for 2018:

- 2017 budgeted revenues were $1.24 million
- 2017 actual revenues were $1.15 million, about 7 percent less than budgeted
- 2017 budgeted expenditures were $1.21 million
- 2017 actual expenditures were $1.11 million, about 8 percent less than budgeted
- Estimated 2018 revenues were $1.19 million, about 4 percent less than budgeted for 2017
- Estimated 2018 expenditures were $1.15 million, about 5 percent less than budgeted for 2017.

Projected 2018 expenditures include several pieces of replacement capital equipment, repairs, maintenance, plant operator expenses, and special and chemical monitoring, but it does not include construction costs, since the chemical TP clarifier is complete. This 2018 budget also does not include costs for the chemicals needed to run the TP clarifier since Burks has already taken it offline, after a brief compliance testing period earlier this year. Burks has stated at several JUC meetings that he does not plan to operate the TP clarifier in 2018 in order to avoid chemical costs for alum, polymer, and/or sodium hydroxide which are used to chemically remove TP by the process of flocculation, saving up to $200,000 in 2018. See www.ocn.me/v17n11.htm#tlwtfjuc.

Managers' reports

Neither Orcutt, Shaffer, nor Wicklund had anything to report during the district managers' agenda item.

Burks presented the DMR for September. The facility is operating very well.

However, he said TLWWTF "had an issue" with the Ceriodaphnia dubia portion of the third-quarter Whole Effluent Toxicity (WET) Test. In the previous quarter, there had been a problem with the fathead minnow portion of the facility's WET test, but the plant is still in compliance, he said. The JUC discussed whether they needed to find a testing facility that would not give TLWWTF so many "false positives."

Also, there was a question related to BOD, which measures how much oxygen the organisms in the wastewater consume as they process the organic waste. In the flow and BOD analysis for influent from MSD, WWSD, and PLSD, the figures looked normal for September.

However, for October, Wicklund pointed out that the sampling numbers indicated a 20 percent jump in BOD, to 90.3 percent of TLWWTF's rated BOD capacity of 5,600 pounds of organic waste loading per day. Burks was not able to quantify the spike because it was so high, and he said he would change the testing dilution for the November tests so that it can be discussed in detail at the December meeting.

Even including this spike, the average for the year is 29 percent of hydraulic loading and 61 percent of organic loading, but the state only looks at one month at a time, Burks said. Note: the Colorado Water Quality Control Act requires that if a facility has more than three months in a row at 80 percent of either of these two designed capacities, it would be required to start engineering design for expansion construction to meet the higher influent treatment demand.

The proper amount of aeration from the blowers assists aerobic bacteria in the facility's activated sludge aeration basins to do their part in the biological decomposition treatment process. Wicklund said that the JUC may have to spend money to add to or change its aeration blower capacity in the future. The JUC discussed several options Burks could investigate in the meantime, including asking the Colorado Department of Public Health and Environment (CDPHE) to reclassify the plant's BOD capacity from 5,600 back up to 9,800 pounds.

After asking Burks what he thought caused the surge, Shaffer said he had a theory that he would first discuss with WWSD Assistant Manager Randy Gillette, before providing information to the JUC. His working theory was that when WWSD discontinued its ozone demonstration scale project in October and emptied the backwash waste holding tank, this might have added substantial extra organics to the TLWWTF influent from the South Woodmoor WSD collector line.

AF CURE update

Burks summarized the Nov. 7 meeting of Arkansas River/Fountain Creek Coalition for Urban/Rural River Evaluation (AF CURE). He said Brown & Caldwell Environmental Engineer Andrew Neuhart, who has replaced Sarah Reeves as the AF CURE coordinator, reviewed the Colorado Water Quality Control Division (WQCD) Oct. 10 rulemaking hearing on the Colorado nutrient Regulation 85 and Regulation 31 Section 31.17. The Division's decisions, which AF CURE supported, included:

- The stricter Reg. 31.17 interim values for phosphorus and nitrogen for rivers and streams were delayed to 2027.
- Colorado Nutrients Control Reg. 85 was extended through 2027.
- Implementation of the final nutrient limits for existing wastewater treatment facilities was postponed for five years to 2027.
- The nutrient incentive program, aimed at facilities that can already achieve effluent concentrations lower than the Regulation 85 effluent limitation, was adopted. This could benefit facilities by extending their compliance schedules to meet variances for phosphorus or nitrogen after 2027.

Burks said he had contacted Aimee Konawal, environmental data unit manager for the WQCD at CDPHE, to find out more about how to apply for the incentive program for nitrogen. Burks thought the facility could easily meet the current Reg. 85 15 mg/l limit for total inorganic nitrogen (TIN) and use the extended time frame to search for funding for treating nitrogen in the future if the far more stringent interim value limits for TP and total nitrogen in state Regulation 31.17 replace the Reg. 85 TP/TIN limits sometime after 2027. He did not want to pursue the phosphorus incentive program, though, because it costs so much to ratchet down TP levels well below the tight 1 mg/l limits in Reg. 85 that already take effect under the facility's current five-year discharge permit in November 2019, well before 2027, creating a need for much higher operational costs eight years early.

Other AF CURE topics Burks mentioned:

- AF CURE approved the 2018 contract for Brown & Caldwell, including $62,500 for nutrients modeling and $45,000 for Andrew Neuhart to