

provide services as AF CURE's new coordinator with the state and EPA.

- TLWWTF can now stop sampling at its locations at Smith Creek near the mining museum and at Dirty Woman Creek by Old Denver Road, after creating a two-year existing ambient concentration baseline for many potentially toxic Monument Creek instream dissolved constituent organics, chemicals, and metals.
- Environmental attorney Connie King said that water wells in Widefield are less than 100 feet deep, making them more vulnerable to contamination from toxins like the perfluorinated chemicals (PFCs) in firefighting foam used at Petersen Air Force Base.

Wicklund said that MSD Environmental Compliance Coordinator Jim Kendrick, who is also vice chairman of AF CURE, attended the Nov. 13 Water Quality Control Commission Issues Formulation Hearing on the triennial

review of the Arkansas and Rio Grande basins, Regs. 32 and 36 (5 CCR 1002-32 and 5 CCR 1002-36). Wicklund also said Kendrick was attending the Nov. 14 Water Quality Control Division stakeholder meeting on Reg. 93 responsive prehearing statement negotiations on the Section 303(d) List of Impaired Waters and Monitoring and Evaluation List instead of the JUC meeting. Burks said Neuhart talked about prehearing statement issues including effects of the Waldo Canyon Fire and storm precipitation.

Wicklund said that currently, Monument Creek is on the Clean Water Act Section 303(d) list of "impaired" streams because of stormwater runoff from "non-point sources of E. coli" such as wildlife, cattle, and domestic animals. He said TLWWTF improves the quality of the stream by diluting it with TLWWTF's much cleaner discharged effluent.

Sharing resources

Burks thanked the Town of Monument for donating and delivering about 10

loads of used asphalt to TLWWTF for use in extending the driveway down to the new chemical TP removal tertiary clarifier expansion building. He was also grateful to contractor Lou Williams for his advice and to WWSO for the use of its backhoe to complete the work in-house.

Discussion of Don Quixote and OCN

Burks told the JUC that he stood by his statements made at the October JUC meeting regarding Fort Carson's wastewater treatment plant operation and lack of conservation of potable water. See www.ocn.me/v17n11.htm#tlwtfjuc.

Burks said that he found out through a third party that, after an OCN reader alerted Fort Carson staff to his comments, he is no longer allowed on Fort Carson's wastewater treatment premises.

Strom said, "You are on the right side of this issue, there is no doubt. I appreciate that you are Don Quixote

at the moment." But he and Orcutt said the JUC was not the forum to take on this issue. Burks said even the Fort Carson staff was disappointed at how much paperwork they would need to do to make needed changes at their facility.

At Burks' request, at 11:02 a.m. the meeting went into executive session to discuss personnel matters. Strom stated that he did not anticipate making any announcements after the meeting resumed.

The next meeting is scheduled for 10 a.m. Dec. 12 at the Tri-Lakes Wastewater Treatment Facility, 16510 Mitchell Ave. The JUC annual meeting, which is a public meeting, will be Dec. 13 at La Casa Fiesta in Monument. Meetings are normally held on the second Tuesday of the month and are open to the public. For information, call Bill Burks at 719-481-4053.

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Triview Metropolitan District, Nov. 14

Board hears central irrigation control proposal

By Jennifer Kaylor

The Triview Metropolitan District Board of Directors convened on Nov. 14, hearing Water Manager and Independent Conservation Consultant Evan Miles of Conservative Waters, Inc. present his recommendations for a centralized irrigation system controller that he said would ensure greater water, time, and energy efficiencies. Interim District Manager James McGrady updated the directors about well repairs, road and open space maintenance, staffing, and proposed 2018 budget details. The board approved a number of resolutions and heard several comments from residents.

Vice President Mark Melville ran the meeting in the absence of President Reid Bolander.

Triview is a Title 32 special district within the 80132 ZIP code that provides roads, landscaping, open space maintenance, and water and sanitation services to Jackson Creek, Promontory Pointe, Sanctuary Pointe, and several commercial areas. The Town of Monument provides land use planning, police, and general governance for the district's property owners.

Cloud-based smart irrigation considered

In an audit of Triview's landscaping irrigation system, Miles discovered that 14 out of 24 of the sprinkler system's clocks were malfunctioning to some degree. Triview has roughly 300 sprinkler zones and 4,000 sprinkler heads. The board affirmed Miles' estimate that 75 to 90 percent of the district's water consumption is directed to landscaping. Evapotranspiration (ET) is the loss of water from the earth and plants to the atmosphere, explained Miles. Common water wasters are overwatering (such as watering during or immediately after a rainstorm), improper nozzle design or placement, evaporation, and wind. Different plants and soils lose water at different rates, and Triview's current irrigation system does not address these differences.

Miles emphasized that he is an independent consultant and has worked with a variety of irrigation companies. He recommended a cloud-based smart irrigation system developed by the company ETwater (see <https://etwater.com/> for more information about the company). ETwater is Smart Water Application Technology (SWAT) certified and its system would include:

- Centralized control.
- Scientific irrigation scheduling (as opposed to an intuitive system) from every zone within the district' boundaries that replenishes only what is necessary. Zone microclimates are assessed on temperature, soil radiation, soil type, wind, plant type, root zone, slope, and exposure.
- Communication provided by a cloud-based 4G network (not Wi-Fi) that is available to staff via cell phones, tablets, and laptops. Can incorporate redundancy to prevent massive water loss.
- System automatically alerts district employees about specific problems in specific locations that then serve as work orders for staff and hone manpower efficiency. Before/after photos can be stored in the cloud to confirm completion of

work orders. If problems are not addressed, the alert is given greater priority.

- Monitoring of water use and flow control (as opposed to water pressure) to automatically shut off water when malfunctions occur.
- Responsiveness to weather forecasting.
- Easy access to hardware that is protected from the elements.
- Mapping of stations and zones on Google Maps for easy location.

In response to questions from the board, Miles added that the system does not place water sensors in the ground because they clog easily and deteriorate quickly, and the system could use reuse water as well as potable water. When asked about new developers building in Triview, Miles affirmed that the district could establish new standards to fit the needs of smart irrigation. (However, the Town of Monument makes all land use and final site plan approval for development within Triview.) There is also no limit to the amount of additional capacity that can be incorporated into the smart irrigation system, he said.

Miles cited a conservative water savings estimate of 20 to 50 percent annually and added that he has not seen savings less than 40 percent in Colorado Springs. Miles quoted a cost estimate of \$66,000 for materials, \$50,000 for analysis, installation, training, and initial intensive monitoring, and then \$5,000 per year for the 4G data cell plan monitoring the system. With \$50,000 allotted to water system in the 2018 draft budget, the board considered splitting the cost between the 2018 and 2019 budgets. McGrady cautioned against the split because of the severity of the need and problems associated with a "Band-Aid" approach. The board also considered the pros and cons of hiring one or more contractors to deal with alerts from the system.

In summary, Miles stated that he believed ETwater would provide "the most bang for the buck" by providing the highest potential for increased efficiency and aesthetic value while simultaneously providing greater control and decreasing infrastructure stress. If approved, preliminary installation work could begin as early as January 2018 with the goal of testing for uniformity in April and achieving full functionality by May. The final decision will be made when the directors vote on the 2018 budget at the Dec. 12 meeting.

Discussion lends clarity to 2018 budget

McGrady informed the board that because the public announcement about the 2018 budget was not officially published prior to the Nov. 14 meeting, the public hearing on the budget will be conducted at the Dec. 12 board meeting, but the board could review the budget at the current meeting as originally planned.

McGrady focused first on capital expenses. Under the general fund, the budget included \$1.2 million to "catch up" on street and open space improvements. Funds have been prioritized to hire contractors for fertilizing and weed control, maintain equipment, and employ additional staff to support the irrigation system. Calculating \$387,000 to mill and overlay one

mile of road with a plan to complete 2 miles per year, McGrady suggested an annual estimate of \$700,000 to \$1 million for street improvements for following years. A well-laid road should last 15-20 years, McGrady commented, and Triview has "20-plus" miles of road.

The budget included \$25,000 in matching funds for Public Works Superintendent Gerry Shisler to apply for a \$75,000 Great Outdoors Colorado (GoCo) matching landscape master plan grant. The grant would likely cover consultant fees for the new irrigation control system. A second \$350,000 grant is a potential source of funds once the master plan is complete.

McGrady summarized that the district needed to streamline road maintenance, create a good mapping system, and coordinate repair and maintenance bids with the Town of Monument to capitalize on economies of scale. The primary goal of the landscape budget is to employ a corps of staff and contractors to attack the spring workload, get ahead—and stay ahead—of maintenance, and manage the irrigation system.

Under the enterprise fund expenses, the board discussed the current and anticipated rising cost of treating wastewater at Donala, including \$1 million needed in 2018 for an arsenic treatment system. McGrady reported that the truck yard had been cleaned and will be reconfigured to make room for the newly purchased Conex, an outdoor storage unit. Shisler praised the temporary workers who cleaned the yard, tested and winterized the snow removal equipment, and prepared the spring/summer equipment for storage.

Director Jim Otis asked if there would be more discussion about many items in the budget that had not been specifically discussed yet and were usually spread out over the whole year. McGrady asked the directors to email him with specific questions before the Dec. 12 final budget discussion and approval.

McGrady proposed possible uses for assets in the water and wastewater enterprise fund such as well improvements, permitting to jump-start the reuse system, funding an Integrated Water Resources Plan, or purchasing renewable water. McGrady commented that the backwash water hasn't been metered accurately, which makes it difficult to account for all water use, and Water Superintendent Shawn Sexton confirmed that is a regulatory requirement. McGrady closed the budget discussion stating that the enterprise fund is strong on assets but begs the question of how to knit all of the needs and resources together. A less detailed version of the draft budget is posted on Triview's website at <https://www.colorado.gov/pacific/triviewmetro/triview-metropolitan-district-proposed-2018-budget>

McGrady reminded everyone that the 35 mills that Triview residents pay in property taxes is strictly to service debt. The operational budgets have to survive on sales tax and water and wastewater rates and