

Memorandum



Date: September 10, 2026
To: Buchanan City Commission
From: Tony McGhee
Subject: **Gosling Czubak Professional Services Agreement**

Background

As has been discussed previously with the City Commission, the City has been working through issues with the ultraviolet, or UV, treatment system at the Wastewater Treatment Plant since last summer.

Initially, the problems were believed to be related to an electrical surge that impacted several properties throughout the community. An insurance claim was opened, and Xylem, the manufacturer of the UV system, was brought in to evaluate the equipment. During that evaluation, issues were identified with several ballasts and a control board, which were subsequently addressed. The performance of the system improved for a period of time following those repairs, but the City again began experiencing operational problems with the UV system.

Staff reengaged Xylem to further evaluate what was occurring. Following that evaluation, staff was advised that corrosion within the system was contributing to the problems and that addressing the situation could require approximately \$200,000 to replace the existing equipment.

Given the significant cost associated with that recommendation, along with concerns that corrosion may not fully explain the problems the City has been experiencing, staff believed it was appropriate to obtain an additional engineering evaluation before moving forward with an expenditure of that size.

Purpose of the UV Disinfection System

The UV system serves an important role near the end of the wastewater treatment process. By the time wastewater reaches the UV system, it has already gone through the various physical and biological treatment processes at the plant. The UV system provides disinfection of the treated wastewater before it is ultimately discharged.

Unlike chemical disinfection, ultraviolet treatment uses high intensity UV light to inactivate bacteria and other microorganisms that may remain in the treated water. The UV light disrupts the genetic material of those microorganisms so they are no longer able to reproduce. This allows the plant to meet required treatment and discharge standards without relying exclusively on chemical disinfection.

For a UV system to work properly, however, a number of components need to operate together. The lamps must produce the required level of UV light, the electrical ballasts and controls must function properly, and the protective sleeves surrounding the lamps must remain sufficiently clean for the UV light to effectively penetrate the wastewater. Electrical problems, equipment failures, corrosion, fouling, or problems with the control system can all impact the effectiveness and reliability of the disinfection process.

Because the City continues to experience issues with the UV system, staff has been utilizing chlorine to assist with the final disinfection process and ensure the plant continues to meet its treatment requirements. This has allowed staff to maintain compliance while the underlying UV issues are evaluated. While this provides an operational tool for staff in the short term, the goal remains to restore the UV system to reliable operation and address the underlying cause of the problems rather than continuing to depend upon supplemental treatment.

Additional Evaluation

Because the problems continued and the potential cost of the repair had grown significantly, staff contacted Gosling Czubak Engineering Services. Gosling Czubak was the engineering firm responsible for the design and construction of the City's current wastewater treatment system and therefore has significant familiarity with the plant and how the various treatment processes were designed to operate together.

On September 1, representatives from Gosling Czubak visited the Wastewater Treatment Plant and reviewed the UV system with City staff. During that visit, the engineer observed conditions that raised additional questions regarding whether the problems may still be connected to the previous electrical surge. Based upon that initial evaluation, staff was advised that the City should reopen and continue the insurance claim associated with the electrical event.

The next step is to engage Gosling Czubak to conduct a more detailed evaluation of the UV system, assist the City in determining the cause of the continuing failures, evaluate potential solutions, and provide technical support as the City works through the matter with its insurance company.

Proposed Engineering Services

Gosling Czubak has provided a proposal to perform these professional engineering services for an amount not to exceed \$15,000.

Staff believes this is a prudent expenditure considering the potential cost of repairing or replacing the system. Before committing approximately \$200,000 to a proposed solution, the City should have a clear understanding of what is actually causing the problems, whether the previously proposed replacement will resolve them, and whether some or all of the necessary repairs may be associated with the prior electrical surge and therefore eligible for insurance coverage.

The involvement of Gosling Czubak is also beneficial because of the firm's familiarity with the original design and construction of the Wastewater Treatment Plant. This puts them in a strong position to evaluate not simply an individual piece of equipment, but how the UV system is functioning within the overall treatment process.

Recommendation

Staff recommends that the City Commission approve the proposal from Gosling Czubak Engineering Services, Inc. for professional engineering services related to the ongoing issues with the ultraviolet disinfection system at the City's Wastewater Treatment Plant, in an amount not to exceed \$15,000.

Attachment A: Gosling Czubak Professional Services Proposal

Attachment A

