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Peter Hurley, Treasurer
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VISTA WASTEWATER TREATMENT PLAN

TO: Nathan Moore, CDPHE

FROM: Justin O. Ramsey, PE

CC: Senator Cleave Simpson; Andrea Phillips Pagosa Springs Town Manager;
Glenn Walsh PAWSD Board Member, Aaron Burns

DATE: May 9, 2023

RE: Vista Wastewater Treatment Plant

INTRODUCTION

The Pagosa Area Water and Sanitation District

The Pagosa Area Water and Sanitation District (PAWSD or District) owns and operates the Vista Wastewater Treatment Plant (Vista WWTP or WWTP), which serves Pagosa Lakes, the Town of Pagosa Springs and nearby areas in Archuleta County. Archuleta County is a rural, mountainous area consisting of 13,807 residents. The current permit referenced throughout this text is the "Authorization to Discharge Under the Colorado Discharge Permit System" Permit Number CO0031755, last renewed on June 28, 2019.

The District was initially organized to provide water and wastewater service to the extensive Pagosa Springs Lakes Property Owners Association. Through an inclusion election held in 1992, the Town of Pagosa Springs and areas served by the former Archuleta Water Company were included into the District's boundaries for potable water service.

The District's water enterprise now serves approximately 12,000 residential and resort-related commercial customers via 6,330 connections. For over 30 years, the District and the Town have worked cooperatively to expand and improve water service to the Town. Presently the District is finalizing details for the construction of a new \$40M Snowball Water Plant, which will expand and improve the potable water supply for the Town and adjacent customers.

The PAWSD wastewater enterprise services 3,622 sewer connections. In addition, the Pagosa Springs Sanitation General Improvement District (PSSGID), which is managed by the Town of Pagosa Springs, collects and conveys approximately 460 million gallons of wastewater annually through its pumping system to the Vista Wastewater Treatment Plant for treatment and discharge. This arrangement was the result of a set of intergovernmental agreements between the District and the PSSGID.

The Pagosa Springs Sanitation General Improvement District

The PSSGID originally provided sewer collection and wastewater treatment for the Town of Pagosa Springs. The PSSGID was organized by the Town Council of the Town of Pagosa Springs pursuant to § 31-25-601, et seq., C.R.S. For decades, the PSSGID operated and maintained a three-celled aerated lagoon which discharged directly to the San Juan River.

In 2016 the District and PSSGID entered into a partnership whereby PAWSD receives and treats Town wastewater, which allowed the PSSGID to abandon the aging lagoons. The removal of these lagoons and lagoon discharge to the San Juan River was required by the CDPHE in part due to a water intake structure just downstream from the lagoon discharge and concerns regarding nitrogen discharge. This intergovernmental agreement also stipulates the town's proportionate financial responsibility for any WWTP upgrades.

The PSSGID provides sewer collection services to residents and businesses within a defined district that encompasses approximately five-square miles, mainly the downtown commercial and residential core of Pagosa Springs.

The wastewater generated within the PSSGID boundaries is delivered to the PAWSD Vista WWTP through a seven-mile force main. The two in-series pumping stations used to provide pressure for the force main have been plagued with problems since operations began. Although the system was engineered and approvals were provided by CDPHE, the pumping conveyance operation has been challenged from the start due to several design factors. First, the system was never provided with adequate storage volume to store wastewater in the event of a system failure. There was no emergency overflow contingency at either of the major pump stations and the accepted solution prepared by the engineer and approved by CDPHE should the pumps fail to operate was to hire pumping trucks to collect wastewater and haul it to the treatment plant. Even if the trucks were running continuously, this solution could not keep up with the volume. An emergency overflow vault holding 250,000 gallons was installed by the PSSGID at Pump Station One in 2017 with the assistance of a state grant to help mitigate this issue. The overflow vault is used regularly, and while it is helpful to have some emergency storage, it can only handle up to 20 hours at our average daily flow of 300,000-350,000 gallons per day. Due to imminent failures of the poorly specified pumps, and lack of adequate emergency storage,

the PSSGID has taken steps to prepare to establish emergency overflow open lagoons to hold wastewater before it enters the San Juan River at Pump Station One. The eight Sulzer pumps at these in-series pumping stations that were specified and originally installed have experienced failure after failure. The impellers and seals failed due to cavitation and other issues. The PSSGID hired a forensic engineer to review the construction and design of the system. This showed several items that were either not designed correctly or overlooked in the system from the beginning. After replacing costly pumps many times over at the stations and running into supply chain availability issues, the PSSGID engaged with another engineer in 2022 to study the pump failures and recommend new pump solutions. The original eight Sulzer pumps (which were supposed to be interchangeable between the wet well and the dry pit) were replaced at a cost of \$900,000 in summer of 2022. Thanks to a grant of \$400,000, the PSSGID's cost was \$500,000 including station retrofits, programming, electrical, etc. Engineering analysis showed the original pumps did not meet adequate positive net pressure levels and the pumps continued to experience cavitation. Additionally, odor issues generated complaints throughout the community and high levels of hydrogen sulfide gas have caused serious corrosion in the wet wells, electrical equipment, and force main. The PSSGID installed odor scrubbers at each of the stations to help remove this gas build up; however, the long-term sufficiency of this solution is questionable.

These ongoing failures have drained the PSSGID's available reserves, and the enterprise fund, which has an approximately \$1 million annual budget, is close to decimation. Despite annually raising all sewer collection monthly rates and Capital Investment Fees (tap fees), expenses for this small rural system continue to outpace revenues. All available fund reserves have gone to address the continuous issues with this original pumping conveyance project. Without the assistance of state grants to complete some of these additional repairs and replacements, the PSSGID would not be able to operate. All other capital projects slated for completion within the district, such as expanding lift stations, replacing aging collection lines, and buying maintenance equipment have been delayed indefinitely. In the short seven-year time span of this system, it has caused expensive and seemingly a never-ending series of emergencies. The threat of a wastewater spill from the stations into the San Juan River or surrounding areas is constantly present. With the ongoing band-aids to this pumping conveyance system, lack of funds for collection line replacements, and the potential of having to pay 25% in sunk costs to the Vista WWTP upgrade to meet Regulation 85, the PSSGID is in serious operational and financial trouble. The PSSGID is currently evaluating whether building a new wastewater treatment facility is necessary in order to address the ongoing issues that is facing with the pumping system. This would mean two treatment facilities in our community of 13,000 people.

Community Growth

Archuleta County's population has been growing steadily in recent years. The growth can be attributed to several factors, including its natural beauty, and outdoor recreational opportunities. The COVID pandemic has increased the growth the county has been experiencing, putting additional pressures on the Districts Vista treatment system. There are growth pressures that include a new major subdivision and an expansion of the Springs Resort and Spa, adding more users on the system. Any significant capital projects surrounding the Vista WWTP should address this on-going growth in order to provide safe, environmentally responsible treatment of increasing volumes of community wastewater.

PRINCIPAL REGULATORY DRIVERS FOR THE VISTA WWTP

The receiving streams for the effluent discharge from the Vista WWTP are Stevens Draw, Martinez Creek, and Stollsteimer Creek (consecutively in that order). These streams are located in the Piedra River Sub-Basin of the San Juan River Watershed. These streams typically run dry, except during spring runoff, storm events, or due to effluent discharge from the WWTP. Therefore, there is no available assimilative capacity (dilution) to consider when CDPHE develops discharge limits for the WWTP. Effluent flows via an ephemeral stream to Stevens Draw, which is designated as Use Protected. Stevens Draw feeds Martinez Creek and Stollsteimer Creek, which are classified as Aquatic Life Warm 2, Recreation Class P (potential primary contact use), Agriculture. Martinez Creek and Stollsteimer Creek are designated as Reviewable for Anti-Degradation purposes and are also considered drinking water supply sources.

The District is obligated to meet the compliance schedules outlined in Part I(B)(6) of the permit. The two compliance requirements that have the greatest financial impact on the District are as follows:

1. Meeting a daily maximum total inorganic nitrogen (TIN) limit of 10 mg-N/L by 2025.
2. Complying with a running 12-month median total phosphorus (TP) limit of 1.0 mg-P/L by 2026.

The above-noted TIN and TP limits are respectively driven by drinking water protection and Regulation 85 compliance. The additions and modifications needed to meet these limits are herein termed the Phase 1 Improvements.

The Vista WWTP NPDES permit will be up for renewal in 2024. The revised permit will likely require further upgrades to the discharge limits (Phase 2 Improvements) to meet Regulation 31.

CDPHE Regulatory Relief

The PSSGID is currently soliciting an engineer to provide a feasibility study for the long-term needs of the PSSGID. There are multiple options the engineer will analyze prior to recommending a preferred option.

Option 1: Continue the operation of the pumping system and provide financial support to the Vista WWTP upgrades as required per the existing IGA between the PSSGID and PAWSD. This option might be less costly in the short run but would effectively keep in place the existing pumping system with all of its attendant issues as detailed above.

Option 2: Abandon the pumping system and design and construct a new wastewater treatment plant to be operated and maintained by the PSSGID located in the location of the previously abandoned lagoons. This option may not be economically feasible given the small-Town customer base and a timeline which would force the Town finance the new plant while paying off the debt on the existing pumping infrastructure and contributing to PAWSD Phase 1 improvements until such a plant can be engineered, financed and constructed.

Option 3: Partner with PAWSD for the design and construction of an entirely new WWTP to be located in the location of the previously abandoned lagoons. The new system would be sized to meet the long-term growth of the community along with meeting requirements of Regulations 85 and 31. PAWSD is not currently under a compliance schedule for Regulation 31. The District's existing discharge permit is set for renewal in 2024 and the new permit will likely have a compliance schedule for Regulation 31. The new plant being designed to meet Regulation 31 would almost certainly bring PAWSD and the Town into compliance with the regulation well ahead of the yet undetermined compliance schedule.

The District has requested on multiple occasions a modest delay in the implementation of Regulation 85. The District has requested these delays to allow time to develop a plan that can (1) comprehensively comply with Regulation 85 and Regulation 31, (2) assure a wastewater system is constructed that will meet increasing community wastewater flows and (3) alleviate the issues the PSSGID is having in regard to the force main they operate and maintain. At this time no delays in implementation have been approved by the CDPHE.

We wish to emphasize that PAWSD is not asking for permanent relief from these regulatory obligations. We are simply asking for a modest extension to the compliance schedule to allow the two Districts to develop a rational and comprehensive plan to meet the regulatory requirements of CDPHE, alleviate existing issues the community has along with assuring we maintain the safety of the public and protect the environment well into the future.

PAWSD and PSSGID reached out to Senator Cleave Simpson to request his aid in allowing us time to develop this requested long-term plan. Mr. Simpson spoke with Nicole Rowan who suggested our two Districts contact you to explain the challenges we are experiencing.

SUMMARY

Any aid you can provide by granting PAWSD and the PSSGID adequate time to research the most appropriate upgrades or replacement of our integrated wastewater systems would be greatly appreciated. We respectfully request an extension of 18 months on this timeline. Again, the District is not seeking to abandon our obligations. We are simply requesting adequate time to assure the investment we make in our treatment system provides the most comprehensive and enduring protection of public health and greatest and most permanent environmental benefit to the community and the river basins in which we live.