



TO: GCSB Board of Directors

FROM: Peter Kampa, General Manager

DATE: November 15, 2021

SUBJECT: Item 4C. Update Report on the Status of Current and Ongoing District Infrastructure Projects

RECOMMENDED ACTION:

This item is intended for information only, and potential Board direction. Should the Board desire to take action on any project discussed, it is recommended that the item be placed on the appropriate regular meeting agenda.

BACKGROUND:

A brief overview report covering the scope and status of all District infrastructure and engineering projects is attached and will be discussed at this workshop.



In Construction or Ongoing

1. Wastewater Treatment Plant Reservoir 2 Inundation Study and Emergency Response Plan (ERP) - \$53,000 estimated from Sewer Fund

This **state mandated** plan is required by the State Division of Dam Safety (DSOD) for the operation of our wastewater holding reservoir. The study maps and evaluates the area of potential impact should the reservoir dam fail, who would be impacted and GCSD's response should this unlikely event occur.

- a. Inundation study submitted to State – 8/26/2021
 - i. Received comments from state on October 22, 2021
 - ii. Emailed CalOES an update on the ERP 10/25/2021
 - iii. Revising model should be ready during the week of 11/15/21
- b. Draft letter to affected agencies and parties ready to be sent out once we receive DSOD approval
- c. New siren at Tank 2 may be used for emergency failure notification if approved by County Sheriff

2. Urban Water Management Plan Update 2020 - \$20,000 from the Water Fund

This **state mandated** plan evaluates the amount of water supply available to the District against current and future water demands, including water conservation targets and other related requirements. Completion and update of this plan every 5 years is required and a condition of receiving state grant money.

- a. **Completed** with final approval by the Board on November 9, 2021

3. Big Creek/2G Clearwell Project - \$3.4 million state grant funded

As discussed each month during our regular meeting, the contractor has completed the interior and exterior coating of the Big Creek Clearwell, and will have completed by mid November the 2G interior and exterior coating. The sound enclosure for the Butler Way Booster station was delivered to Farr Construction on November 5, 2021 and is scheduled for installation during the week of 11-15-2021, and at which time they will complete the air relief valve installation and punch list items. As has been normal with this project, we expect the contractor to not meet their project schedule. The project is being completed far below budget, and we are working with the state to determine if we can move the remaining contingency funds to complete a recoating of Tank 5.

4. Sewer Collection System Replacement Project - \$5.8 Million state loan (\$1.4 million) and grant (\$4.4 million) funded

This project involves the replacement or rehabilitation of 11,500 linear feet of existing sewer main, construction of 19 new manholes, resurfacing and rehabilitation up 46 existing manholes and the

number of main line spot repairs throughout the system. The construction contract was awarded to Moyle excavation of Jamestown in June, 2021 and the work will begin as soon as budget approval is provided by the state, which is estimated to be December 2021. The project is planned to be completed within one year, weather permitting.

- a. Pre-construction meeting – December 1, 2021.
 - i. Pine Mountain Lake Association and Tuolumne County officials will be invited to attend this meeting to answer contractor questions and address concerns in advance of construction
- b. Caltrans Encroachment Permit received
- c. Environmental Revisions for the PML rehabilitation work:
 - i. Draft Biological Memorandum has been received
 - ii. Draft Cultural Report due 11/10/2021
 - iii. Draft CEQA Documents due 11/10/2021
- d. Change order to be issued to contractor to install paddles/delineation showing sewer lines and easement locations on private property
- e. GIS Mapping for Project is completed for Board review and for working with public notification and potential meeting on easement access
 - i. Identified that several existing manholes are inaccessible due to highly developed yards, on easements. It has been determined that we can rehabilitate and recoat the manholes in lieu of full replacement and expect good performance and long life, without huge disruptions to neighborhoods.
 - ii. All new manholes will also receive an interior liner (by contract change order) to eliminate concrete corrosion caused by hydrogen sulfide gas levels

5. Feasibility Review and Cost Estimates for Long Gulch project - Developer funded

Staff and our district engineer have been working with representatives from the revised Long Gulch project on an evaluation of the feasibility and improvements necessary to provide service to three separately distinct areas of development South of Ferretti Rd just outside of the district boundaries near the airport. The project involves the potential for apartment units and a number of larger rural residential lots. The district is evaluating the timing of these projects for the purpose of determining phased improvements and relocation of the tank serving that area as well as water main extensions, fire hydrant spacing and connection points. After the feasibility letter is issued, the developer will determine whether they will proceed with an application to the county for the project.

6. Water/Wastewater Master Plan Review - \$200,000 funded by the water and sewer enterprise funds

District staff and our engineering team conducted an extensive review of the second draft of the water and sewer master plan prepared by the engineering firm Wood Rodgers. We generated extensive comments and suggestions that have been compiled by our District Engineer to be delivered to Wood Rodgers staff for review early this week. We will look for them to return the draft

final masterplan for review by our committee within two to three weeks of receiving our comments. The plan takes an extensive look at the improvements that are necessary to both the water and sewer systems for maintenance and replacement purposes, as well as upgrades to meet regulatory requirements and future water and sewer demands. As you will remember the master plan also contains capital improvement plans for both water and sewer service that outline the recommended priority improvements out 20 or more years. The purpose of the capital improvement plan and long term cost estimation is for evaluation of options and priorities, our use in establishing rate plans, budgets and connection fees for new development into the future.

7. Community drought and DWR grants for water supply and conservation - \$8.545 grant application to DWR (11-01-2021)

District staff and our engineer have conducted a preliminary evaluation of water supply improvements necessary to be able to safely and effectively pump water from Pine Mountain Lake during extreme, long term drought conditions. We are also planning the relocation and permanent installation of the alternative water supply treatment plant (AWS) on district property and connection between the treatment plant and the new intake at Pine Mountain Lake. The third component of this project is the installation of a groundwater well to serve as a separate drought water supply for the community of Big Oak Flat. In the case of a loss of the tunnel water supply, and inability to draw water from Pine Mountain Lake, this well would serve to meet the full water demands of the community of Big Oak Flat. The project also includes the installation of a separate water storage tank and water main connecting the Big Oak Flat system to the new tank. An application in the amount of \$8.545 Million has been submitted to the state Department of Water Resources for hopeful funding out of the billions of dollars of drought funding assistance being rapidly moved through the state.

8. Airport estates closeout and GCSO acceptance of infrastructure – Developer funded

We are working with the airport estates development team to finalize the documentation for district acceptance of the infrastructure they installed as part of their residential development project consisting of eight new lots. We are also securing an easement through the property to allow the Tank 2 overflow drain line to discharge at Ferretti Rd rather than next to the airport taxiway. The project developers must provide a warranty bond to guarantee the function of the water system improvements, provide construction cost accounting and an easement grant deed prior to consideration of acceptance by the District. The acceptance should be before the board of directors by the December regular board meeting. The property still needs to go through the annexation process into the GCSO boundaries once LAFCO has completed and adopted the municipal service review for the district.

9. WWTP Improvements Phase 1 and 2 - \$1,785,640 funded from the Sewer Enterprise funds and \$1.5 million loan

The Phase 1 Improvements consisting of gravel road restoration, culvert installation, concrete slab and drainage improvements will begin construction as soon as the contractor can mobilize in November. Weather depending, we expect the Phase 1 project to be completed by early spring 2022. Final draft plans for the Phase 2 project are completed and we expect the final electrical plans and technical specifications by December 10, 2021, at which time we will begin public bidding likely in January 2022. This project has been two years in the works and due to severely outdated and worn out equipment, concerns with odor production and other factors, has evolved from a simple replacement of the WWTP headworks screen to replacement of the screen and solids handling equipment, installation of new headworks monitoring and flow control equipment, replacement and upgrade of portions of the recycled water irrigation system and renovation and standardization of

lift station No. 2. Construction of the entire project should be completed by the end of summer 2022. This project will reduce odor production at the treatment plant, improve operating efficiency and safety, standardize controls and equipment, and assist with continued regulatory compliance.

10. AMI water meter upgrade project design and funding application - \$1.5 million grant/loan applications

Grant and loan applications have been submitted to USDA and the Bureau of Reclamation for funding to upgrade all of the water meters in the system to an automatic metering interface that allows for remote reading of water meters around the clock. This much simplifies utility billing, provides significant water and bill management features for customers, as well as providing a significant water conservation tool for the district to meet regulatory requirements and water demand reduction targets. Due to cellular technology improvements, the project cost estimate has reduced in half from over \$3 million to approximately \$1.5 million.

11. AWS design and funding application - \$3.5 million grant/loan applications

As discussed above this project involves the relocation of the alternative water supply treatment plant to the district property and connection of the treatment plant with the pipeline to the Pine Mountain Lake intake. A separate funding application to the USDA has been submitted for this project (in 2019) The operation of the AWS in the parking lot of the Pine Mountain Lake association maintenance yard is a maintenance, operational, and safety concern and was never intended to be a long-term installation. This project makes the move for this installation to be permanent on district property to improve the ease of operation significantly and to ensure the reliability of water supply during drought and tunnel outage.

12. Wastewater plant pond 1 renovation project - \$300,000 from sewer enterprise funds

This project is necessary for operation safety, efficiency, and regulatory compliance, and was approved by the Board on November 9, 2021. It involves the replacement of the failed liner on wastewater treatment pond #1, which to save money was installed previously using a liner of low strength and quality for the exposure to wastewater, the environment, and animals such as deer and bear. Exposure to these factors have caused the existing liner to prematurely rip and fail. The new liner will be installed as quickly as we can get a contractor on board following completion a project plans by the district engineer. This pond is used as an emergency storage location for untreated sewage in the event of treatment plant upset, storms, or high flows from the system. The pond must be lined so that the untreated wastewater does not soak directly into the ground. The project also includes the following:

- a. Concrete pad design to handle mass grease and debris from lift stations
- b. Perimeter fence
- c. New thick liner similar to that used in the WWTP Equalizing (EQ) basin
- d. Grading work to reduce stormwater inflow from surrounding area

13. Main Hub Lift Station floors and debris – Estimated to be included in \$5.8 million SWRCB funded Collection System Project in #4 above

This project is currently being planned and involves the installation of concrete in the bottom of lift stations that were previously improved in 2005. The project plans at that time in 2005 included the

installation of this concrete, however for some reason the work was never completed, and the bowl in the bottom of the lift station results in a buildup of solids that can be difficult to remove. The solids generate odor which is a priority to address with these improvements. This project involves bypassing, draining, cleaning, installing the concrete floor and then lining the lift stations; and will be completed using Sewer Collection System Renovation Project contingency funds under contract change order with Moyle Excavation, in the spring or early summer of 2022.

Engineering, Feasibility Analysis and Condition Assessments

14. Water Distribution system evaluation-unusual operating conditions

Our district engineer is working with district staff to evaluate abnormal operating conditions within the water distribution system. We have found that there is very little complete documentation about some of the work and maintenance records from the past in the distribution system. By operating fire hydrants and taking pressure readings, as well as customer reports of low water pressure or no water at all during operation of fire hydrants, we have determined that there are abnormal conditions that have existed for many years. Our engineer is developing a testing strategy to identify the possible causes of these pressure and flow anomalies so that we can implement improvements as soon as possible.

15. WWTP Air system evaluation/upgrade – Estimated \$10,000 evaluation costs

The wastewater treatment plant is operating on its original compressed air distribution system, which is beginning to show signs of extreme corrosion and failure both underground and inside the treatment plant basins. We were having difficulty locating replacement parts because of their age and are considering self-fabrication to ensure that the treatment plant continues operating correctly while we determine if a complete treatment plant replacement/upgrade is necessary and possible. We are also looking to design a simpler system for removal and cleaning of the air distribution system within the equalization basin. There are currently no means to remove these air diffusers without attempting to fish them out with a long pole from the bottom of the pond. Proper air system operation is critical to finished wastewater quality and odor control throughout.

16. Big Oak Flat/Groveland Water Distribution System Replacement project - \$5 Million grant and loan applications to SWRCB and CDBG through Tuolumne County

Downtown Big Oak Flat/Groveland water distribution system replacement project design currently stands at 90% complete. Our funding application to the State Water Resources Control Board is complete and we are waiting and hopeful to be placed on the funding priority list. As soon as we get an indication that the project is moving into a fundable status, our engineer will complete the final project plans and specifications for bidding. We have heard no more on the community development block grant (CDBG) money through the county, as the procedures for that funding program have significantly changed as a result of COVID-19. If we are awarded those funds in the amount of \$3.4 million, we will have to be prepared for public bidding within 90 days of contract award. Staff and our District Engineer are pouring over newly released funding programs as they become available and are closely monitoring the federal infrastructure bill and its allocation in hopes of securing grant funds for this project as well.

17. Evaluation of Odor Control Filtration and Chemical Addition Systems for Lift Stations - \$35,000 per lift station for permanent installations

We have identified manufacturers of relatively simple air filtration systems that can be placed on lift stations to remove hydrogen sulfide, methane and other gases that occur from the natural decomposition of organic waste in sewage. These filtration systems operate continuously to remove

odors from the air in the lift stations and contain carbon filters. Also, we have been pilot testing liquid products that reduce grease buildup and neutralize sewer odors at the molecular level, not as a fragrance additive. We are currently manually dosing the lift stations but are planning to pilot test over the next few months a continuous chemical feed storage/pump system to more effectively dose the wastewater based on flow volume, and measure odor reduction. We were excited (and surprised) to find that the main hub sewer lift stations that were renovated in 2005 contained expensive wastewater flow meters installed into the wiring and physically laying in electrical cabinets. These important devices that monitor, store and transmit wastewater flow volume real-time through our SCADA system were also not completed in the 2005 project, and we are in the process of completing the installation in-house; thanks to our amazing IT staff! We expect that by next March or April we will at minimum have the pilot projects installed for evaluation and if effective, will make permanent installations following budget approval and as soon as the equipment can be specified, ordered, and installed. There are disadvantages to each of these systems, with the air filtration system having constant noise production similar to a large shop vac unless a full building is installed for noise control. The chemical injection systems are relatively inexpensive; however the continuous use of chemical is estimated to be relatively spendy on an annual basis. We will evaluate the advantages, disadvantages and cost of each in our presentation to the board following our pilot study. A pilot study including a temporary installation is planned at 3 main lift stations to determine how well the systems function, their noise and nuisance production, odor reduction and to ensure that elimination of lift station odor alone is adequate based on inflow of treatment plant odors and the particulars of the lift station sites. The air filtration system rental cost is \$5,175 first month rental per lift station, \$1,000 monthly thereafter

18. Emergency Power Generator Replacements - \$584,600 in grants from the State Budget allocation to districts, and DWR through the Tuolumne Stanislaus IRWM

The District operates over 23 emergency power supply generators that run critical infrastructure such as water pump stations, sewer lift stations, the fire department, administrative office, water treatment plants and wastewater plant during times of power outage. The total run times for all GCSD generators between October 2020 and October 2021 was 1195 hours, with an average power outage time of 52 hours in that year. Without generators, the District would receive hundreds of thousands of dollars annually in state regulatory fines for sewage overflows, as well as customers without water for days on end causing health and safety concerns. Many of these power generators have been in service since the 1970's and are beyond their reasonable, serviceable life. The district aggressively sought after and received grant funding for replacement of several critical emergency power generators including \$286,600 from the state for public safety power shut down relief projects, and \$290,000 from the department of water resources through our Integrated Regional Water Management program. All of the generators have been ordered and will be delivered between December 2021 and March 2022. We have already received the funding from the state and will receive reimbursement from the department of water resources following the purchase and installation of the generators. By next summer all generators should be installed and operational, significantly streamlining our operation and making for more reliable water and wastewater services during power outages.

19. Preliminary planning and potential property acquisition for relocation of Tank 4

District staff has begun the planning with our engineer for the relocation of tank #4 to a higher location where we can eliminate the hydropneumatic system at the current Tank 4 location and provide water supply for future development in the area near the revised Long Gulch Ranch project proposal. This tank relocation has benefits to both existing customers and creates capacity available for purchase by future connections to the system. The new tank location at its higher elevation will provide for significantly increased fire flow in the Unit 12 area of Pine Mountain Lake and eliminate the need to operate the costly and maintenance intensive pump and pressure tank system located

at the current Tank 4 site. We are currently planning at the concept level to identify parcels that are ideal for the location of the tank and will be working with property owners to determine availability and cost. The Long Gulch development project and any future connections to the system will pay proportionally toward the cost of the tank and connecting pipelines.

20. WWTP plant evaluation for overall reconstruction

The existing wastewater treatment plant is over 50 years old and is beginning to deteriorate rapidly. The type of treatment system coupled with open basins and extensive aeration result in significant odor production which then migrates offsite to the residential community. Our wastewater treatment plant permit is from 1984 and will most certainly be up for renewal in the very near future. State regulations have significantly tightened since 1984, and it is highly likely that the wastewater plant will need to be completely rebuilt to meet new Regulatory standards. In addition with WWTP upgrades, there is a significant opportunity for the district to put its reclaimed wastewater to beneficial use in irrigation of the adjacent baseball field, park and greenbelts between these facilities for fire prevention, cooling and beautification. In the near future the district engineer will provide an overview of the process of upgrade and permitting of a replacement wastewater treatment plant and it's estimated costs and schedule.

21. Supplemental Groveland CSD standards for hydrant spacing, minimum main sizes, etc.

The district is working with its engineer in the development of construction standards for new development within the district boundaries, and that inform county land use development policies and projects. This would apply to projects that occur in close proximity or adjacent to the district boundaries and infrastructure and where connection is possible and in the best public interest. In providing services to the community within GCSO, it is solid utility and service planning practice to look at where service demands may occur close to but just outside of district boundaries. For example, if multifamily or commercial development is proposed within the county just outside of the GCSO boundaries, the project would certainly be receiving the benefit of GCSO provided fire and park services, and in accordance with the policies of the state and drought contingency planning, public water and sewer is always encouraged and in some cases mandatory even though a project is not directly adjacent to a water or sewer main. The purpose of this effort is to establish certain standards that can be applied in the design and approval of new development projects both inside the district boundaries and those likely to require annexation into the district boundaries. The district currently has adopted standard drawings and details which shows how things should be constructed, but currently does not have supplemental standards to identify a minimum distance to water and sewer mains to trigger mandatory connection, or size of new development project that would require annexation to the district and connection to the public systems. These standards would also prescribe the minimum size of water and sewer mains to be extended, spacing of fire hydrants for the various land use types, and other related requirements so that developers understand what is expected for construction in, and adjacent to the district where utility connection will be required.

22. Park Improvement Project Planning – Potential \$10 million in grant applications

For over two years now the district has been evaluating the function and condition of its existing park assets and equipment, as well as reaching out to receive input on desired park improvements from the public in general and from the various established groups and organizations in the community. The board has on a number of occasions reviewed the array of potential park improvements identified through the public engagement process, and the district is now reviewing these identified priorities throughout the community in various venues to finalize a potential park improvement project. The stated goals of any park improvement project planned are to improve outdoor activities for the health of the community, increase opportunities for outdoor socializing

and community events, as well as constructing improvements that support revenue generating activities in support of district park facility operation and improvement as well as community enhancement and enrichment. On a parallel track, state proposition 68 has infused hundreds of millions of dollars into park and recreation facility development and improvements in the form of grants to local cities, counties and districts. Federal funding, further increased by the recent infrastructure package, is planned to become abundant in support of public improvements that increase hazard mitigation, enhancement of emergency services and public safety, improvement of public health through trails and enhanced outdoor activities, and projects that sustain communities' economic wellbeing during times of general economic impact due to emergencies such as the recent pandemic. By the end of December 2021, the district will have publicly vetted a master plan of improvements that function together in support of the above goals and in consideration of the large amounts of funding available immediately. As the Board is aware, the community identified potential improvements on the District's 287 acre parcel including creation of:

- a sports activity center near the softball field that contains a relocated basketball court and skatepark, BMX or Pump Track, improvements to the existing ballfield and its supporting infrastructure, parking, lighting, security and room for additional facilities in the future as community needs change
- A paved, accessible trail system connecting the Sports Activity Center with the PML entrance, Groveland Resilience Center, Mary Laveroni Park, Downtown Groveland and Deer Flat Rd. The trail can also serve as an emergency evacuation/ingress/egress route avoiding downtown and the Ferretti Rd/Hwy 120 intersection
- A secondary and tertiary trail system and related amenities such as benches, viewing areas/overlooks, interpretive signage located throughout the District's 287 acre parcel and which can provide a venue for hiking, walking and organized running, biking and related sporting events
- Infrastructure in Mary Laveroni Park to support a wide variety of activities such as enhanced public uses and accessibility, community events and private rentals. Improvements potentially include a hillside amphitheater/outdoor classroom and stage for concerts, theater and classes, large covered gathering space, sheltered benches and paths connecting amenities
- Yosemite type adventure area including bouldering areas, nets and climbers, nature areas in the creek bed, swings, slack lines and other amenities incorporated into the terrain
- New restroom and trailhead facilities within the existing park
- Potential RV Park/Campground located off Deer Flat Rd on GCSD property
- Competitive Disk Golf course located between the existing park and GCSD office adjacent to the main trail segment