**Mendocino City Community Services District**

# Memo

**To:** Board of Directors

**From:** District Superintendent

**cc:** Jim Jackson

**Date:** June 15, 2017

**Re:** Mendocino Wastewater Treatment Plant Upgrades

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The District is in the process submitting a USDA loan/grant application for *Wastewater Treatment Facilities Improvements and Recycled Water System Expansion* at the Mendocino Wastewater Plant. There are 5 segments of the proposed system improvements:

- Disinfection System Upgrades—replace the existing plant effluent disinfection system with an onsite chlorine generation system. New chlorine feed pumps and electrical controls will be installed. The existing dechlorination system will be replaced. A chlorine generation building will be constructed to house the onsite chlorine generation system and the dechlorination systems. A 50,000 gallon underground tank will be installed under the new building to store recycled water and plant water (#2 water). The new building will also be used to park the District's service truck and forklift. $1,283,700.

- Recycled Water Distribution System Expansion—the new building will also house a new #2 water pressure system and recycled water pressure pumps and controls. A fill station will be installed next to the new building. District property owners will be able to pick up tank loads of recycled water for outside irrigation, and contractors will be able to fill water trucks with recycled water for dust control and soil compaction. A new 6-inch purple C-900 recycled water main will be installed from the treatment plant to the existing 30,000 gallon redwood and 50,000 gallon concrete tanks at the High School. Two 500 gallon per minute recycled distribution pumps and controls will be installed in the new building. 4 fire hydrants will be installed in the recycled water main to provide additional firefighting water capacity for the Mendocino Fire Protection District, which may lower property owner's fire insurance. $357,750.

- Equalization Pond Liner Replacement—the equalization pond liner is the original liner that was installed when the plant was constructed in the mid-1970s. It is at the end of its useful life, and needs to be replaced to prevent plant effluent from infiltrating into the aquifer if it fails. $49,500.

- Backwash Programmable Logic Control Replacement—the existing backwash controls are original equipment. The controls are obsolete and are at the end of their useful life. They will be replaced with a programmable logic control. $133,100.

- Sludge Drying Bed Rehabilitation—sludge is a byproduct of the sewage treatment process. The original plant was designed with sludge drying beds. Due to high rainfall in the area that made the beds unusable in the winter, belt filter press dewatering equipment was

installed at the plant in 1990. A sludge drier was installed in 2005 to increase the level of sludge treatment. Biosolids (processed sludge) must be dried on a weekly basis. The belt filter press and dryer are 29 and 12 years old respectively. The *Sludge Drying Bed Rehabilitation* component of the Project will provide a redundant sludge handling system if there is a sludge processing equipment breakdown. The new beds will be cleaned with a tractor instead of by hand as well, which will reduce sludge processing costs. $297,000.

The total cost of the Project, which includes legal counsel, environmental reports, and engineering services is $3,072,270.

Drying Beds Upgrade Concerns

Several neighbors have attended recent meetings to voice concern about the upgrade of the drying beds. The June 22, 2017 special meeting was scheduled by the Board to look at possible alternative sludge handing systems that could be used to replace the existing drying beds.

Existing Sludge Handling Processes

The sludge drying beds were part of the original design of the Mendocino Sewerage system constructed in 1975. The District's belt process/dryer sludge processing equipment is now the primary sludge processing system. The belt press was installed in 1990 and the dryer in 2005. The drying beds now serve as the redundant sludge handing system.

The existing drying beds have only been used occasionally over the last 27 years, since the belt press and dryer were installed. The last time sludge was pumped into a drying bed was in 2012 for the installation of new sludge pumps. Grease and other raw sewage debris vacuumed from sewer manholes and wet-wells has been air dried in the beds over the last 27 years as well.

The overflow pond was normally used to air dry sludge when necessary, since the dried sludge could be harvested with a tractor. Prior to 1990, up to four feet of sludge was stored in the overflow pond. The last time sludge was placed in the overflow pond was in 2005 during the construction of the dryer building. Sludge was dried in the overflow pond for a period of six months during that construction in 2005. In 2013, the overflow pond was lined, so sludge drying and storage was no longer an option. The drying beds are the only remaining alternative for temporary sludge drying or storage.

Proposed Use of Drying Beds

Following the plant upgrades, the drying beds will continue to be used in the event of a belt press/dryer breakdown or during a prolonged maintenance period of that equipment. The upgrade of the drying beds is necessary to allow mechanical cleaning of sludge from the beds, and to protect groundwater from any infiltration of water that is removed from the sludge during the drying process. The existing beds are currently unlined.

In response to neighbors' concerns about the drying beds upgrade, The District asked SHN Engineering to investigate possible alternative sludge handling systems that could be used as a redundant backup sludge handing process to replace the drying beds. The Technical Memorandum is attached. SHN will make a presentation of the information in the Memo at the June 22nd meeting.

USDA Application

The Board has approved both the Preliminary Engineering Report (PER) and submission of the USDA application. Although SHN is ready to submit the application immediately, they have been asked to submit it after the June 22, 2017 special meeting. At the meeting, SHN will make a presentation on

possible alternatives to the drying beds. The public will have an opportunity to ask the engineers and Board questions about the drying bed upgrade and any other segments of the project.

If the Board instructs SHN to revise the PER and the Environmental Report to eliminate the drying beds, the cost to revise the PER and Environmental Report is approximately $7,000, and would take about a week. The application would not be submitted until around July 1, 2017 or later.

The Board may make a motion to proceed with the application as is, and SHN will submit the application as early as June 23, 2017. Eliminating the drying beds upgrade after approval of USDA funding is possible and would cost the District nothing, since the Board has the option to not include the drying beds upgrade in the bid documents. If upgrade is removed from the project, the existing drying beds will be used as they are currently designed.