

Memo

To: Plant Operations Committee
From: District Superintendent
cc: [Name]
Date: April 12, 2021
Re: Short and Long – Term Approaches to Repair and Replace Aging Infrastructure

Superintendent Ryan Rhoades has identified both immediate short-term priorities as well as long-term challenges the MCCSD faces given its aging treatment, collection, and recycled water operations. In addition, District residents, businesses and visitors face continued shortages of dependable and sustainable drinking water.

The District will need time and resources to address all of these challenges over the next 10+ years while considering the impacts of climate change.

Short-term and urgent priorities require immediate attention and present short-term funding challenges. Longer-term projects will need significant state and other funding to complete. The MCCSD could consider a comprehensive approach to planning and packaging the long-term upgrade and replacement of its wastewater infrastructure along with exploration of drinking water solutions. A comprehensive approach rather than piecemeal, could add value especially with respect to recycled water for fire suppression and greening of parks and schools as well as a potential community drinking water system.

It would be helpful to develop a timeline for all that follows.

Immediate short-term priorities:

--Replace Air Supply Line—Potential failure could compromise plant operation.

Cost: \$75,000-125,000—Possible support from county American Rescue Plan (ARP) funding or reserves.

--Outfall Repairs—Immediate need, different steps in process. Needs to be completed 2021-22 FY.

Cost: \$35,000-45,000—Equipment reserves, LAIF Fund, ARP funds, state or local grants.

--Additional staff or consultant resources to support planning and movement of long-term projects through conception, engagement with community and stakeholders, development of long-term funding sources, design, permitting, engineering, construction and completion. A key piece of this will also be an effective and fair approach to sustainable rate increases.

- grant writing consultant
- financial needs

Cost: \$50,000-100,000 per year. Potential funding sources: Planning grants and reserves.

Secondary short-term priorities:

Items that need to be done within the next year or two and can be done as funding is identified and secured. Perhaps to include:

--Confined Spaces—reduce and eliminate. Costs: Partial fix \$20,000. Total is significant and parts could be tied into new treatment plant, and or lift station upgrades (see below)

--Equalization Basin Pond Liner—Cost: \$50,000-150,000. Again, could potentially be addressed through comprehensive plan.

--Drying Beds—Cost: \$200,000. rehab with concrete lining and potential recycled water holding tank.

--New Roof—Cost: \$40,000. Possible combine with solar roof tiles.

--Solar Installation—Cost: unknown. Could pay for itself over 10 years through energy savings.

--Partial Collection System Repairs and Upgrades—Cost: Unknown. Costs likely increasing over short and long-term as system is nearly 50yrs old.

NOTE: Some of the above items could be addressed through a comprehensive approach to upgrades and replacement. Cost estimates are based on 2020 pricing and 2021 is proving difficult to predict with inflating materials costs.

Long-Term Priorities:

--**Complete New/Additional Treatment Unit—Cost: \$10-12+ million plus Outfall replacement--\$8-10 million.** Treatment plant replacement/upgrade. This could be the core of long-term comprehensive planning efforts. New treatment unit planning and funding approach could include many of the following items (some previously listed):

— New Treatment Unit to replace 47 year old one.

— New Outfall or other solution to excess recycled water— Horizontal Boring, Ponds?

— Upgrades to collection system

— Recycled Water System Upgrade—Fire suppression, schools and park irrigation, etc. to include storage and distribution

— Address Outstanding Confined Spaces

— New Air Supply Piping on Existing Treatment Unit

— New Sludge Press and Drying Systems

--Community Water System:

— Assess community need and support

— Identify potential water sources and prospects for water rights

— If community support, sources and funding are possible, secure funding and coordinate with collection system upgrades

Timeline for long-term priorities:

--April-June: Develop general proposal on key elements and timeline for the board to consider and approve at June meeting—This would provide a "board approved" document for planning and funding purposes.

--July-October: Research, assess, consult, plan, engage community and stakeholders, engineering firms, etc. to further **refine and develop plan**, cost out and id potential funding sources, etc.

--October-February 2022: Finalize plan and support needed, begin submitting proposals to funding sources. Continue on an ongoing basis whether comprehensive approach or piece by piece.

PRIORITY ITEM:	COST:	PRIORITY: S/T (ABC)	PRIORITY: L/T (ABC)	TIMELINE AND NOTES:	QUESTIONS and NEXT STEPS:
<p>Short Term Priorities:</p> <p>1) AIR SUPPLY LINE to treatment unit: Replace 250 ft. of 10" air supply pipe from blower room to treatment unit.</p> <p>-Consider the price to add another blower in the backwash control building, delaying the urgency of pipe replacement.</p> <p>-One diffuser still needs replacement, and two need maintenance</p>	\$75,000 Estimate ???	6- month A-level	Needs to be replaced in 2021	<p>-Materials estimate is \$20-25K 304/stainless schedule 10. -Contractor fabrication estimate is \$25,000 -Labor to excavate and install could be done in house. \$25K estimate if done by contractor</p> <p>One estimate was provided by local contractor. Wahlund construction has expressed interest in the project. SHN is unable to provide cost estimate at this time.</p> <p>-If over 25K project will need to go out to bid.</p> <p>Funding Ideas: Most likely equipment reserves /LAIF fund. Further investigation could be done for small, state or local grants.</p> <p>-We have the material to repair, replace, and maintain the diffusers. We need to schedule a day for the crane operator, Mike Kelley, and Steve Acker to help.</p>	<p>-Investigate total cost if work is done in house. -Investigate RFP/bid process/time line. -Investigate engineering time line and costs.</p>
<p>2) OUTFALL: Repairs. Nov 2020 report recommends replacing last 6 hold down brackets and continued annual inspections.</p>	\$20,000 bracket installation \$10-16K Annual inspection	1-Year A-level		<p>- Brackets fabrication has begun. - Seek Board Approval May or June for to authorize bracket install.</p> <p>Funding Ideas: Most likely equipment reserves /LAIF fund. Search state and local grant opportunities.</p> <p>-Recommend we approve install job this year. Maybe wait a year on the next inspection. Begin serious work on replacement planning rather than continued inspection and repairs. Consider as part of larger upgrade project.</p>	<p>- Consider inclusion in 2021-22 budget. Schedule project for next fiscal year. How vital are annual inspections? Could we inspect every other year?</p>

				disadvantaged community) CA Dept. of Water Resources Grants?	
10) NEW ROOF: for Office Building The roof is near the end of its useful life. Maybe 5 more years at most. -Good opportunity to add solar array or photo cell shingles. No current estimate on costs for solar	\$39K Estimate in 2020 Unknown for solar	5-Year B-Level		-Redwood Roofers observed the roof condition in summer of 2020. Stated it needs replacement and estimated the job. -If roof is being replaced it might be the time to explore solar installation and energy independence. -MHRB issues? -Coastal Commission issues? -Engage Bruce at Mendo Solar to get preliminary assessment. Funding Ideas: Maybe LAIF/District reserves, or maybe included with a few other short term projects with access to USDA or State grants. State energy rebate funding?	
PROPOSAL: a) Complete projects 1&2 in 2021	\$45-100k?	A-level 2021		Projects 1 (airline) and 2 (outfall repair) need to happen this year. They are both essential pieces of equipment. Funding most likely be from LAIF/Equipment replacement reserves. May be ready for Board approval in April.	-Can the airline be replaced from under 25K?
b) Complete Project 3a by end of 2021	\$13,000	A-Level 2021-22		Reducing confined spaces is the top plant safety priority. Ladder cost estimates are \$2,000 each. We need 5, funding might be LAIF reserves, or a local safety grant.	-Likely to see Board approval in March or April.
c) Complete Project 3b by the end of 2022	\$1 Million ???	A-level 2022		Removing the confined space and upgrading the lift stations is a top priority short term project for 2022. Costs and funding sources are still uncertain.	-Investigating options and costs with engineering firms.
d) Complete Projects 4 and 5 by 2023	\$350k			Pond liner needs to happen, drying bed rehab is a good idea but not necessary. If Phase II funding comes easy, this project happens soon. If phase II is delayed, how is pond liner funded?	-Depends on reality of Phase II funding.
e) Combine Projects 7-10	\$ 1.5 Million	5-Year B-Level		Consider combining short term projects, 7-10 into one mid-sized project with a goal of completion in 5 years. New sludge press, sludge dryer, treatment unit airlines.	-Important equipment purchase, maybe included new plant?
Short Term Equipment Needs				NOTES:	Plan:

<p>1) Additional Turbidity Meter</p>	<p>\$10,000</p>	<p>6 months A-level</p>		<p>SHN engineering reported 4/12/21 that State is going to require additional turbidity monitoring to approve our Title 22 report and allow continued transfers of recycled water.</p> <p>Funding Ideas: LAIF Equipment Reserves.</p>	<p>Seek Board approval at April BOD meeting.</p>
<p>Long Term Priorities List</p>				<p>NOTES:</p>	<p>QUESTIONS:</p>
<p>1) OUTFALL: A new outfall to the ocean. -Top priority long term project, based on reported condition. -996ft Pipe -Cost estimate is rough</p>	<p>\$ 8-10 Million</p>	<p>S/T Repair only</p>	<p>8-10 year A-Level</p>	<p>-8 to 10 years for planning, design, funding , permitting, ENV review -Consider horizontal boring. -Possible alternative: pond system on the headland. -Already spent \$280K on inspections and repairs since 2006 -Funding and permitting are top concerns -SHN engineers estimated replacement at \$5 million in 2018, per Mike Kelley, but can't locate estimate. -Could be combined with a new treatment unit as larger project</p> <p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants?</p>	<p>-What do other coastal WWTP due to replace/repair their outfall? What design firms have they used and what funding sources? -Reached out to Avila Beach CSD, no response</p>
<p>2) SECONDARY/NEW TREATMENT UNIT: Construction of the second treatment unit as originally designed, to replace/supplement our 47-year-old unit.</p>	<p>10-12 million at last estimate</p>	<p>Short term N/A</p>	<p>10 Year A-level</p>	<p>-WWTP are typically designed with 200-300% redundancy. MCCSD doesn't have this, creating increased risk with aging infrastructure. Current treatment unit was designed to operate for 30 years, we are almost 20 years past life expectancy. If something breaks we can divert flow for 3-5 days. Not much time to repair. A second unit would allow for maintenance to old unit, provide a backup in the event of problems, and be likely more efficient.</p>	<p>-Do we have the space? -Is the original design still the most efficient? -Should be hire a consultant</p>

<p>Only secondary to outfall because of outfall condition.</p>				<p>-Can or should the outfall replacement and a new treatment unit be combined into one large project? -Unsure of best location on property for the new unit.</p> <p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants?</p>	
<p>3) RECYCLED WATER SYSTEM UPGRADE: phase two of the WWTP upgrade, recycled water system improvement (about \$2 million per SHN engineer's last estimate). -Good P.R. good for the community -Reduces discharge into the ocean. -Could supply recycled water for fire hydrants in town, increased athletic field irrigation, and more recycled water for school district use, thus reducing the school's need to pump so much potable water up Little Lake Road.</p>	<p>\$2 million</p>	<p>If GHD can secure funding this could become a high priority short term project</p>	<p>10 Year B-Level</p>	<p>Roughly 5-10% of treated water is currently recycled...big challenges on water quality. Phase two project is tied to school upgrade and fire suppression. Potential to help recharge aquifer but serious challenges. Total outflow averages about 33 million gal. per year.</p> <p>-Currently consulting with GHD engineering on funding sources and a project timeline. -GHD says we need to put out a RFQ (request for qualifications) GHD believes MCCSD may qualify as a DAC (disadvantaged community) allowing up to 75% grant funding).</p> <p>Recycled water use is good for the school, and can help with fire suppression resources.</p> <p>https://casaweb.org/renewable-resources/water-recycling/ https://www.ppic.org/blog/californias-growing-demand-for-recycled-water-has-ripple-effects/ https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_01.pdf</p> <p>-Recycled water transfers create a lot of extra work and liability for the District, testing, reporting, and managing.</p>	<p>State requires another turbidity monitor and alarms to approve future transfers.</p>

				<p>Providing recycled water increases District expenses and liabilities for limited benefits. I love the concept, but the board should be aware of the concerns.</p> <p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants?</p>	
<p>4) COLLECTIONS SYSTEM REPLACEMENT:</p> <p>Current collections system is in decent condition. A few areas need repair. System is 47+ years old, at some point it will need to be replaced.</p>	Unknown		10-30 Year B-Level	<p>Update video inspection with annual sewer main cleaning.</p> <p>-Short term, 2-5 years a few section of the collection system will need to be replaced. Long term most of the system should last another 20 years barring no significant disasters.</p> <p>-Evergreen St.; Little Lake between HW1 and Lansing; and a section of Main st.; need to be replaced.</p> <p>-County repaving schedule has nothing in town scheduled prior 2036.</p> <p>-This could be basis of comprehensive plan over 10-30 years to redo the whole system...and perhaps tie in Municipal potable water system....</p> <p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants?</p>	
<p>5) COMMUNITY WATER SYSTEM:</p> <p>The current system of GWM is not perfect</p>	Unknown	S/T Low Priority	Long Term 20-30 Year, B or C level	<p>MCCSD Looked into creating a municipal water system in the 1990's. It was cost prohibitive, politically divisive, and no great water source located.</p> <p>Problems:</p>	

<p>but it works for the majority of customers.</p> <p>District has limited financial resources, and many higher priority projects.</p> <p>Still no good water source.</p> <p>Current customers to be surveyed through 2050</p> <p>Climate changes needs to be considered.</p>			<p>No good water source was found or secured.</p> <p>Very political, "water wars" many private properties have good wells and don't want to pay for a municipal system.</p> <p>No current funding for design or source search. How do you force all members to join and pay for water? Water use would still be restricted during drought years.</p> <p>Process: survey, have the majority of users deem it a priority. Locate and secure a source. Find funding for preliminary engineering. Develop a plan, design storage and infrastructure, search for construction funding.</p> <p>Secure funding, secure permitting. RFP's, go out to bid. Begin construction.</p> <p>Raises key questions of do we proceed bit by bit or explore and pursue a comprehensive plan... Big issue is exploratory, planning funding in \$2-5 million then \$40-100 million to upgrade whole thing with potable water or some other solution to groundwater issues...long-term big approach...I think worth discussion and some estimates on timing and costs... could be tied to a replacement of collections system.</p> <p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants? Loans with State matching funds.</p>	
<p>Proposals: 1 Combine L/T projects 1&2 (outfall and new treatment unit)</p> <p>Proposal: 2 Combine L/T projects 4&5 (new collections system and municipal water system)</p>	<p>\$25 million ???</p>	<p>10- Year goal A-level</p>	<p>-Design and funding might come easier as one project.</p>	
			<p>-If all the roads in town are going to be dug up for a new collection system, it would be the time to lay pipe for a future community water system.</p>	

<p>Proposal: 3 Phase II Upgrade, recycled water system.</p>	<p>\$2 million</p>		<p>2-10 year B-Level</p>	<p>-Project 3, recycled water upgrades is closely tied to the school project. With assistance to funding it becomes a priority short term project, with difficult funding it becomes a long term project/priority. Further discussion with GHD engineering will help determine potential funding sources and work load for the District, resulting in how the project is prioritized. GHD motivated to help.</p>	<p>Is recycled water a priority for the community?</p>
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<p>3) CONFINED SPACES: Reduction and/or elimination of confined spaces.</p> <p>a) moving two lift stations above ground, modernize equipment, and supply back up power sources.</p> <p>b) on-site (WWTP) 5 confined spaces are the top priority to eliminate/improve, by adding more access points and or moving equipment.</p> <p>Most cost effective fix to these 5 spaces is providing additional access points. 5 new, fixed ladders.</p>	<p>Unknown. Waiting on cost estimate from engineers for lift stations. Pre-fab or remodel existing? \$2,000 per ladder plus install. \$10,000 In ladders Maybe \$3000 to install.</p>	<p>2 -year, A-Level</p>	<p>Needs to happen soon. Top District safety concern</p>	<p>-MCCSD does not have the staff, training, or equipment to safely conduct confined space entries to maintain equipment. -From a safety and liability stand point reducing and eliminating confined spaces is a level —A, top priority. -The lift stations function, but are almost 50 years old, and in need of both equipment upgrade and backup power, this can be accomplished while removing the confined space with modern design. -Unknown cost, design, and permitting time. Assumed to be less than 1.5 million. -Starting point is a request for qualification form the engineering firms, then look for funding sources, and discuss design. District may have to pay out of pocket for PER. Two years is sort of a minimum time line. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants? Safety grant, or back up power grant? Rater payers, increase in service fees? https://www.mcmaster.com/ladders/wall-mount-ladders-with-welded-on-cage-8/</p>	<p>-Request qualifications from engineering firms to help with search for planning grants, design, project funding grants, and project admin. -Secure funding based on engineers estimates, and go out to bid. -What are other small WWTP's doing to address this problem and what is their funding source?</p>
<p>4) POND LINER: for equalization basin. The old liner has multiple holes with weeds growing through. Replacement was cut from the most recent plant upgrade</p>	<p>\$50-150K</p>	<p>2-year B-Level</p>	<p>Level B priority for L/T</p>	<p>-The pond still functions as designed. 100% of effluent flows through this pond. The pond needs to be drained and cleaned to eliminate plant life. The current liner will likely not survive this cleaning process. -GHD Engineers looking to help MCCSD find funding for recycled water upgrades. Might be able to include this as part of Recycled Water Upgrade.</p>	<p>-See how realistic Phase II funding is. Can pond liner be included? -Should pond liner be included as part of greater plant upgrade project? Can we wait that long?</p>

<p>project due to funding.</p>				<p>Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community). Consult other small WWTP's.</p>	
<p>5) Drying Beds: Rehabilitate two beds by pouring a concrete slab in two of the three old beds. -One of the three beds is the proposed site for the new 50,000 gal recycled water contact/holding tank.</p>	200K	2/3-year B/C-Level		<p>-All three (3) drying beds are permitted and usable as is. -Beds are how this plant operated from 1973-2003. -Beds are lined with sand and have a French-drain water collection system. -Neighbors strongly object to beds being used. -District has no desire to ever use drying beds again. -Beds are an essential emergency backup for plant operations. -If the belt press or dryer break, drying beds are the only real option to maintain plant operations until equipment is fixed. -Trucking wet sludge out of the area is not practical financially or with local resources. -Rehab of beds would reduce the chances of any potential contamination to a neighboring well. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community)</p>	<p>-Discussion with neighbors is a necessary first step. -Continue to explore alternative solutions. -Check how realistic phase II funding might be.</p>
<p>6) WATER SOURCE SEARCH: Locate and Secure rights to a strong, dependable, and reliable source, or multiple sources.</p>	???	3/5 Year A/B Level		<p>-if we are going to have discussion or develop future plans for a community water system we need to start with finding a source and securing the right to that water. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) CA Dept. of Water Resources Grants?</p>	<p>-Start by surveying consumers as to the interest level in a community water system.</p>
<p>7) AIR SUPPLY PIPING in Treatment Unit: Top of treatment unit is a maze of metal air supply piping. The</p>	\$75,000	5-7 Year A/B Level		<p>-These pipes are old and rusting, staff does a lot of painting and preventative maintenance. Some may last two years and others a bit longer.</p>	<p>-Could this repair be part of a greater upgrade project, or does it need to happen sooner?</p>

<p>pipes are 47 years old. Some in worse shape than others, some valves are frozen or rusted. Will need replacement soon. Totally unknown cost. Estimated around 75K</p>				<p>-These air pipes, the belt press, and dryer are all essential pieces of equipment. It is hard to say one is a priority over another. If the airlines fail we have hours to repair before we have major operational problems. If the press or dryer fail we have maybe a week before needing to use the drying beds. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) Consider equipment replacement reserves, LAIF fund.</p>	
<p>8) SLUDGE BELT PRESS: Replacement of the 31 year old sludge press.</p>	<p>\$200-400K</p>	<p>5-Year B-Level</p>		<p>The press machine was purchased in 1990. Company is out of business. Unit is 31 years old, parts are hard to find, technology has improved. The unit works ok at this point and is used one day per week. If it breaks we would be forced to use sludge drying beds. Problems with neighbors. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a disadvantaged community) Consider equipment replacement reserves, LAIF fund. Consider grouping it together as a larger project with the dryer, air piping, and or drying beds.</p>	
<p>9) SLUDGE Dryer: Fenton Sludge Drying Unit added in 2003 Is 18 years old, still functional, used weekly, has some issues.</p>	<p>\$700-900K</p>	<p>5 -Year B-Level</p>		<p>Unit is great but getting old, used two days per week. Company went out of business, no more service tech's. If something breaks we have about one week before we have to start using drying beds. Big problems with neighbors. Newer or more efficient options may be available. Funding Ideas: State grants, USDA Grants/Loan (SHN states we are eligible for 45% USDA Grant funding) (GHD believe we may qualify for 75% Grand Funding as a</p>	