

SDIC Annual Managers Report

2/13/2023

Infrastructure:

-Evans Pump #1 repairs are coming to completion. The pump and motor was removed and hauled in for repairs on 9/14/2022. Reed Electric completed the rebuild of the motor with minor machine work that needed to be done to the bearing journals. After the pump was disassembled the wear and damage was worse than anticipated. Beside the standard shaft bushings replacement there were other repairs needed. The most severe, was the cavitation damage to the diffuser housing. It required a multi stage repair using a buildup of Belzona 1111 Super Metal resign epoxy to fill the current cavitation pitting to standard propeller clearance, then machined down several thousandths of an inch and build back up with Belzona 2141 ElastoMeric Resign to give a layer of cavitation protection. Then the diffuser was externally wrapped with Belzona Super Wrap II with carbon fiber to reinforce the weakened structure. The bowl shaft and both main shafts had to be replaced. The propeller did require bronze brazing and balancing. At this point the pump and motor has been reinstalled with the dresser coupling and all electrical components reconnected. The last few steps to complete is the repositioning of the suction umbrella and start-up balancing.

-Bay Valve while completing the repair to the Evan's #1 pump, also completed a sump configuration analysis. The report indicates that with the current sump configuration the cavitation umbrellas could actually be a detriment more than benefit. Though the umbrellas in a correct configuration can help with alleviating minimum submergence requirements, in our case they are obstructing the minimum sidewall clearances which is constricting the water entering the pump intake. It is recommended to remove them from the pumps. While removing them from pumps is relatively easy, removing them from the sump would be extremely challenging. I am planning to leave them in the sump, but lifted out of the way. This will allow us to operate the pumps and test the theory. If it is not correct, they can easily be reinstalled. Regardless, one of the main causes of our cavitation problem is our current operation of the Evan's pumps to maintain a water level of 3.7-4.4' mean sea level (msl) of the Evans slough. These levels does not meet the minimum required submergence of the pump intakes. Manufacturer minimum submergence requirement is 6'4", this would correlate to a minimum Evans slough water level of 5' msl before we fell below the threshold. The newly suggested pump configuration without the umbrellas is not anticipated to stop cavitation damage, hopefully, just slow it down.

-The SDIC received a rebate check from the CRPUD for \$2742 that was processed thru Energy Smart Industrial, Efficiency Incentives program for the repairs we completed to the Evans Pump and Motor #2 in early 2022. I am hoping we can receive the same rebate after the repairs to the Evans #1 is complete. These rebates are always something to keep in mind if there are upgrades or repairs to any infrastructure that has the potential for energy savings.

-The daylight end of the Toe Drain located adjacent to the North Tide gates was located.

-Both the Cherry Orchard pumps were flow tested, the #1 pump had indicated wear during the last vibration analysis in early 2022 and we wanted to check if it was affecting the performance. The results indicate that the #1 pump has lost about %10 of its capacity compared to the #2 pump.

Operations:

-The major rain event on December 26, 2022 was one of the most intense since my tenure at the SDIC. The NOAA station at the Scappoose Airport recorded 3.67" of rain in 24 hours. The large influx of water created several problems and exposed several issues, one of these was the large amounts of debris that plugged the Kessi and Johnson pumps stations. A positive was that the intensity of the storm caused the

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Jackson Creek diversion to overtop for multiple hours, but the structure performed well as designed. It diverted the maximum amount of water to the south tide gates, but not so much to overwhelm them.

-As part of safety upgrades, several custom rakes were fabricated to allow the cleaning of the Evans pump station intake screens from the original concrete structure. This allowed the abandonment of the catwalk system.

-Vegetation management has been a continued focus. Herbicide management of woody vegetation was completed again this year along the entire sub levee, but with more completed along the southern end of the perimeter levee. Tree removal was a large focus this year, with several large patches of trees removed along the riverward side of the perimeter levee. There were also several large areas of blackberries that were mechanically removed. The landward slope and crown of the perimeter levee was mowed.

-The Jackson Creek diversion was cleaned of accumulated sediment and vegetation.

-Several large trees that had fallen across the Santosh slough were removed.

-A boat tour inspection of the riverward toe along the entire perimeter levee was completed, there were several locations that were documented and will be monitored, but no areas of major concern.

Infrastructure & Operations-Looking Ahead / Action Items:

-Complete reinstallation of the Evans #1 pump and motor.

-Securing the Johnson #2 intake using a rigid metal frame.

-Repair of the Kessi and Sternberg discharge pipes.

-Continue tree and blackberry removal along the perimeter levee while also maintain the progress we made.

-We have a scheduled "site visit" with the USACE on 2/24/2023. This previously was called a routine inspection.

-Toe Drain explorations at the Cherry Pump and Olsen Farm.

Website:

-The website has been a large help for noticing our meetings along with providing relevant meeting materials. The meeting recordings are now available there. There is a page that is keeping the public up to date as the SDIC moves through the Strategic Planning process. Our large storage capacity has allowed us to leave up all meeting materials since inception, I have also been putting updates on the News page that has some of our most recent large projects.

Mercury/Temperature Total Maximum Daily Load (TMDL) (DEQ Compliance):

-The SDIC Willamette Basin Mercury TMDL plan was submitted, and receipt acknowledged on 9/2/22.

On 10/11/22 I received some follow up questions to our plan before it can be deemed complete, but we were also given a 6-month extension from DEQ. I am in the process of responding to the follow up questions. We were also told that department review of Mercury TMDL's would be put on hold until the outcome of a new temperature TMDL was determined.

-On 1/5/23 we received word from the Oregon DEQ that thru litigation they are to review and rewrite the Willamette Basin Temperature TMDL's that were completed some time ago. During this review process it could be possible that water conveyance entities (SDIC) could be named as a Designated Management Authority (DMA). This would require us to develop a Temperature TMDL similar to the Mercury. I attended an informational webinar on 1/31/23 that gave a background on the temperature TMDL process and possible steps moving forward. There is a legislative advisory committee meeting on 2/28/23 that is to determine who will be designated as a DMA.