

**Water-Sanitary Districts Project Planning Topic Description  
December 6, 2023. 3:00. Zoom**

Concern

District staff continues to be in “react” mode and, with current staffing, are not likely to get ahead of the curve to fix plant and equipment failures, operate the plant, maintain the equipment, comply with state reporting mandates and undertake the projects that are lined up. This puts ongoing operations of the Districts’ plant and equipment at risk.

Need for Board Consideration

The purpose of the Strategy Work Sessions is for the Water and Sanitary Boards and the Public to review and understand each of the projects identified in the planning document, their priorities, their sequences, and the staff resources required. This will allow Board members to make informed decision about whether or not to add District Staff. No decisions will be made during Work Sessions. All decisions must be made in Board Meetings.

December 6<sup>th</sup> Meeting Objective:

Review and discuss all line items in the ‘Core Ongoing Operations’ and ‘Administrative Projects’ sections. Discussion will address:

- What is the need / requirement for this ongoing work / project?
- What is the proposed approach - scope of work, why that priority and what level of staff resources is it likely to take?
- What equipment, materials, etc., are currently anticipated?

Attached

- Project Plan
- Forest Project Management responsibilities
- IT-System Equipment Needs



<b>TOTAL FTE (Adjusted)</b>			<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.7</b>	<b>1.0</b>	<b>0.7</b>	<b>0.7</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0</b>	<b>0</b>
SD Projects														
Deferred maintenance projects (P 1's)	High		40	40	40	40	40	40	40					
Membrane basin cleaning X2 / equip installs	High											30	30	
Webb Lift Station replacement - Planning	High		8	8	8									
Webb Lift Station replacement - Build	High					40	40	40	40					
Collection system - repairs (C.P. 2025-26)	High								40	40	40			
Magnesium Hydroxide transfers and billing/CB	Medium		2											
Mixer and Valve replacement	Medium					24	24							
BioSolids / BioSolids site - rehab or sell research	Low		8	8	8	8								
Pre-Membrane Screen Upgrade (C.P. 2024-25)	Low									20	20	20		
Collection system - Assess (TV work)(C.P. 2026-27)	Low													
North Pump Station replacement (C.P. 2028-30)	Low													
Asbury Pump Station replacement (C.P. 2030-32)	Low													
Membrane replacement (C.P. 2028-29)	Low													
<b>TOTAL FTE (Adjusted)</b>			<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.9</b>	<b>0.8</b>	<b>0.6</b>	<b>0.6</b>	<b>0.5</b>	<b>0.7</b>	<b>0</b>	<b>0</b>
Grant Writing	High													
Water District			4	4	4	4	4	4	4	4	4	4	4	4
Sanitary District			4	4	4	4	4	4	4	4	4	4	4	4
<b>TOTAL FTE (Adjusted)</b>			<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0</b>	<b>0</b>
<b>TOTAL Full Time Staff (total hrs / 126.4 hrs per staff)</b>			<b>3.3</b>	<b>3.5</b>	<b>3.5</b>	<b>3.2</b>	<b>4.0</b>	<b>3.6</b>	<b>3.4</b>	<b>3.1</b>	<b>3.0</b>	<b>3.2</b>	<b>2.5</b>	<b>2.1</b>
160 - VAC (8.3)- Hol (5.3)- Sick (4)- Duty (16)			<b>126.4</b>											

Legend: VERSION 11-28-23

Priority: Determination made based on 1) **RISK** - Magnitude & Likelihood of negative event , 2) **COST** - Ongoing operating cost to maintain viability of system operations.

**FTE by Priority**

Core Ongoing Operations 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9

Mandated	0.4	0.4	0.4	0.3	0.6	0.3	0.3	0.0	0.0	0.0	0.0	0.0
High	0.8	0.8	0.8	0.8	1.1	1.1	1.0	0.7	0.4	0.6	0.3	0.1
Medium	0.1	0.2	0.2	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.0	0.0
Low	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.4	0.6	0.6	0.2	0.1
<b>TOTAL</b>	<b>3.3</b>	<b>3.5</b>	<b>3.5</b>	<b>3.2</b>	<b>4.0</b>	<b>3.6</b>	<b>3.4</b>	<b>3.1</b>	<b>3.0</b>	<b>3.2</b>	<b>2.5</b>	<b>2.1</b>

# Forest Property Management

Report to: President, Water District Board

## 1) Operations

- a. Work with consulting forester, as necessary, to address unexpected issues with the property, e.g., downed trees on shingle mill access road.
- b. Be the emergency point of contact for fire response and contractors working in the Forest.
- c. Manage the keys to the Watershed gates. Monitor who is on the property, including but not limited to contractors.
- d. Determine, in conjunction with the consulting Forester, when the Watershed property should be closed.
- e. Periodically patrol the property in accordance with District Policy on enforcement.
- f. Respond to questions about the property from the public.

## 2) Operations & Finance Management

- a. Working with the Budget Committee and Consulting Forester, recommended a one-year budget, one-year operations plan and updates to the long-range plan.
- b. Monitor financial compliance with the annual budget (working with book keeper / accountant). Monitor annual operations plan (working with Consulting Forester) Report to the Board of Director on status of budget and operations and any Committees as directed by the Board of Directors.
- c. Work with Consulting Forester to ensure compliance with Oregon Department of Forestry contractual obligations and other certification agencies and funding agencies. This will include but not be limited to updates to the Multi-Resource Management Plan.
- d. Work with bordering property owners to coordinate activities and to identify, address and resolve issues
- e. Research grant opportunities and apply for grants.

## 3) Contractor Management

- a. Work with Consulting Forester to plan projects in the operations plan and procure / contract contractor(s) in a manner consistent with District policy.
- b. Work with Consulting Forester to undertake contract implementation and supervision.
- c. Maintain all contractor records and work with admin staff to ensure payment consistent with contracts

Legend: Yellow highlight – activity done by District Staff

November 27, 2023

## Arch Cape Water and Sanitary District IT projects

### Overview

<b>Water Plant</b>			
	Program Logic Controller (PLC)	Controls Plant Hardware	
	PC & Windows. (HMI)	Human Machine Interface Software (graphical representation of plant of plant)	\$600 + monitor
	Plant Operating Software Upgrade	Required for new requirements from Oregon Health Authority	
	Internet Connection - Cable – Modem	Replace DSL to give wi-fi and phone	
<b>Sanitary Plant</b>			
	Program Logic Controller (PLC)	Controls Plant Hardware	Up-to-date
	PC & Windows (HMI)	Human Machine Interface Software (graphical representation of plant)	\$600 + monitor
	Plant Operating Software Upgrade		No requirement to switch
	PC & Windows & Application Software & Printer	Upgrade to current configuration of Admin / Finance	
<b>Combined</b>			
	Geographic Information - Mapping System (GIS)	Computerized map of water and sanitary system components - underground pipes, meters, valves, manholes, fire hydrants. Components can be viewed as “layers” with any combination displayed. Maps can be printed, viewed online, and downloaded to a tablet or laptop.	<ul style="list-style-type: none"> <li>• \$700 for the GPS used to collect data</li> <li>• \$500 per month on the high side for hosting and data work. The price could be lower once our system is stable if minimal assistance is needed for a while.</li> </ul>

### **High Priority Project:**

The water district has one high priority project. This is the replacement of a PLC (Programmable Logic Controller) and replacement of a very old Windows computer. The PLC is a small computer

that controls the hardware in the water treatment plant. The Windows computer runs HMI (Human Machine Interface) software. This software displays a picture of the equipment showing an operator what valves are open and closed, what pumps are running, and in general allows an operator to interact with the equipment. The two items, PLC and HMI, work together to control the machinery and allow operator interaction.

The PLC is old and no longer supported. The company WesTech that maintains the hardware is not able to program this device. The PLC is a critical component of the water treatment plant. We need to replace it with a new model that we can maintain.

The Windows computer is very old with very limited hardware. It is running Windows 7 which has not had any security patches released for a long time. This system needs to be replaced. WesTech will specify minimum requirements for a computer. For cost estimation assume that \$600 for a computer. We can likely use the existing monitor. A replacement monitor would not be too expensive if required.

The need for PLC replacement and programming has been known for a while. We have a request with WesTech for a cost estimate for their portion (PLC, programming, HMI setup). I had a brief phone call with Shawn Sturgeon of WesTech and send him a follow up email October 29 and have not had a response. Someone from the district in a more official capacity needs to follow up with WesTech and request a response.

**Waste Treatment Plant HMI - not urgent but useful:**

The waste treatment plant is like the water plant in using a PLC for machine control and an associated HMI to provide operators with an interface to view and control equipment. There is a desktop computer and display in the office acting as an HMI, providing a graphical view of the equipment status. In the nearby building with equipment and controls, one of the racks had a touch screen acting as an HMI. This has failed.

Anyone in that building must go to the office to access the HMI. I do not know if the touch screen interface can be repaired or the cost if it could be. An alternative would be to put a second HMI in this building. I thought this would be easy and so inexpensive. I asked Minh Huynh from Industrial Systems, the company that maintains the hardware, about this idea. He told me that a rough estimate would be between \$6,000 and \$15,000. Far more expensive than I was expecting. Work is getting done in the present state but we should explore ways to improve this.

Note: I have tried to give a good explanation of the PLC/HMI status at both water and waste treatment plants. Matt has a much better understanding and should jump in with corrections or clarification if needed.

**GIS mapping - not urgent but useful:**

Matt and Dale attended a presentation by Tanya Haddap of Cartomation on Geographic Mapping Systems (GIS). This is something used by other utility districts including Cannon Beach

to create computerized maps of their infrastructure. Arch Cape will eventually want this in place. There is a project on the horizon that may increase the importance of this. I think it is an EPA report on lead pipes or something similar. Matt can give the details.

Such a system would create a computerized map of water and sanitary system components - underground pipes, meters, valves, manholes, fire hydrants. Components can be viewed as "layers" with any combination displayed. Maps can be printed, viewed online, and downloaded to a tablet or laptop.

There would be a monthly charge for hosting the data. There would also be a monthly charge from Cartomation for map creation and data manipulation. Plan for about \$500 per month on the high side for hosting and data work. The price could be lower once our system is stable if minimal assistance is needed for a while.

There would be a one-time hardware purchase of about \$700 for the GPS used to collect data. There is a subscription charge, which can be controlled in monthly blocks, to collect data. The cost depends on the accuracy desired. We could probably find a couple volunteers to collect the initial data needed to generate the first maps (water meters, manholes, hydrants).

#### **WiFi at the water treatment plant - not urgent but useful:**

The water treatment plant on Shark Creek Road uses DSL as an Internet connection. This works, but is quite slow, possibly limiting things such as robust computer backup. Moving to a cable modem Internet connection would allow the installation of WiFi at the site which would allow a cell phone to use WiFi calling. That would mean that staff working there would not be cut off due to lack of communication - something we could consider as providing a measure of safety when someone is working there alone. We should watch for funding opportunities that would extend cable up the road to the plant.

#### **Cybersecurity Grant Opportunity**

The Arch Cape Water and Sanitary districts have an opportunity to apply for grant funds from the **State and Local Cybersecurity Grant Program (SLCGP)**. I do not know if this will fund replacing obsolete hardware such as the water treatment plant computer. Teri may be able to answer. When I looked at the grant information, I saw opportunities to fund training and consultants, but it was not clear how much funding of hardware was available. There is an "authorized equipment list" provided which may mean that hardware can be funded.

An initial step in the grant application is performing an online self-assessment. During this we would learn a lot about our present cybersecurity. I did reach out to both WesTech and Industrial Systems asking about how the PLC firmware and HMI software was backed up. Industrial Systems does backup everything that they do for the waste treatment system. They provided a reassuring answer to my questions. The same is probably true for the water treatment plant but I did not receive any response from WesTech. We will need district staff to follow up on a request for response.



I also spoke with Eric Lessor at Computer Support & Services. This company, based in Tillamook, provides backup for our main office computer, and manages our network firewalls. Off-site backup is being done and a firewall is in place. To complete the self-assessment, we would probably need the details of what we have in place. An alternate to that would be to request funding to create detailed documentation of the present backup and firewall system.

Note that the sign up for the online cybersecurity self-easement wanted a .gov email address. Using something else will require contact from the district to set up a login. A grant application for this is due January 10. An application would include an overview and funding amount requested and a line-item budget in Excel format.