ARCH CAPE SANITARY DISTRICT MINUTES

16 July 2021

The in person meeting held at the Arch Cape Fire Hall and ZOOM video teleconference broadcast was held in light of the COVID-19 pandemic. A quorum was present.

Sanitary Board:	Darr Tindall, President (in Zoom video teleconference) Debra Birkby, Vice-President & Treasurer Chris Anderson Jay Blake Bill Campbell
Water Board:	Dan Seifer (non-voting) Nadia Gardner (non-voting) Linda Murray (non-voting)
Public:	John Mersereau, President – North Coast Land Conversancy Layton Borkan, Vice-President – North Coast Land Conversancy Tim Crawford Buffy Simmons Philip Simmons David Stockton Jeannie Stockton
Staff:	Phil Chick, District Manager Steve Hill

Ms. Debra Birkby acting on behalf of Ms. Darr Tindall called the meeting to order at 6:05 pm and thanked everyone for attending. For video teleconference assistance they could reach Mr. Phil Chick at 503-739-2348.

Oath of Office: The oath of office was taken by the following individuals both elected and appointed to their respective offices in the following order.

Ms. Darr Tindall, Position 2 - elected
Ms. Debra Birkby, Position 1 - appointed
Mr. Jay Blake, Position 3 - elected
Mr. Bill Campbell, Position 5 - elected

Public Comment: Congratulations were extended for all serving the community and to those who were new to the board.

Agenda: No Treasurer's report. Agenda as amended accepted by consensus.

Consent Agenda: No Treasurer's report. Mr. Campbell moved acceptance of the agenda as amended and consent agenda which was seconded by Mr. Blake. All in favor. Motion carried.

Old Business:

Wastewater Plant Access: (Information) The expected sale on July 20th of the adjoining property to the wastewater treatment plant was announced.

Webb Lift Station: (Information) The Curran-McLeod, Inc. (CMI) pre-design report (attached) estimated the project expense at $300K.

A Technical Assistance Grant for $20K is expected to cover the expense for CMI to update the Facility Plan update required prior to this lift station rebuild.

When Mr. Campbell expressed his approval of the report he said that he would like Mr. McLeod to personally speak to the board.

DEQ Loan and Arch Cape Forest Levy: (Action) A discussion of the potential purchase of lots 621 & 622 based upon a separate appraisal took place. Mr. Chick recommended delaying any action until more information was known towards the end of the year but keep as a potential future funding option

Mr. Blake moved to table this agenda item until further information was available which was seconded by Mr. Campbell. All in favor. Motion carried.

Covid-19 Emergency: (Information) A general discussion ensued about continuing in person meetings in the fire hall in the immediate future. It was suggested that we might as was done this evening start the meeting in the fire hall and have others who felt more comfortable in joining the meeting on Zoom take that option.

Mr. Hill reported that accounts receivable continued to strengthen.

.New Business:

Fire Hall IT Upgrades: (Information) The Cannon Beach Fire Chief, Mr. Marc Reckmann recommended IT infrastructure changes to the Arch Cape Fire Hall including a 70" flat screen TV, dedicated computer and WiFi upgrades along with a whole room camera to better capture the entire space at an estimated cost of $3,800.00. The community club is contributing to this effort and it was proposed by Mr. Reckmann that the water and sanitary districts cover the estimated $1,200.00 cost of a new TV with stand for this project.

Mr. Blake moved that the district contribute $600.00 to purchase a 70" flat screen TV along with stand anticipating a similar action by the water district which was seconded by Mr. Campbell. All in favor. Motion carried.

Reports:

District Managers Report and Correspondence for Action: (attached)

Board of Directors' Comments and Reports: Mr. Campbell welcomed Mr. Blake to the board and was looking forward to his anticipated contributions having had prior city planner experience and involvement with neighborhood design. Mr. Anderson joined with Ms. Birkby in those sentiments welcoming Mr. Blake to the district board.

August Agenda Items: Plant access, Webb Lift Station, and LRFP start in Oct.

Public Comment: None.

The meeting was adjourned by Ms. Debra Birkby at 6:40 pm.

Respectfully submitted,

Steve Hill

Attest
Ms. Debra Birkby, Vice-President

DRAFT FOR DISTRICT REVIEW

Arch Cape Sanitary District

WEBB AVENUE PUMP STATION IMPROVEMENTS PREDESIGN REPORT

July 2021

The Arch Cape Sanitary District serves the unincorporated community of Arch Cape located at the southern end of Clatsop County, bounded to the east by the Coast Range Mountains and to the west by the Pacific Ocean. The Arch Cape community is largely residential with three commercial properties. Most residences are second homes with fewer than 100 homes occupied year-round. The characteristics of any vacation setting is that there can be substantial seasonal changes in utility use.

The community is served by a gravity sanitary sewer collection system and four pump stations: North, Asbury Creek, Sally's Alley, and Webb Avenue. All flow to the treatment facility is ultimately routed through the Webb Avenue Pump Station to the treatment plant.

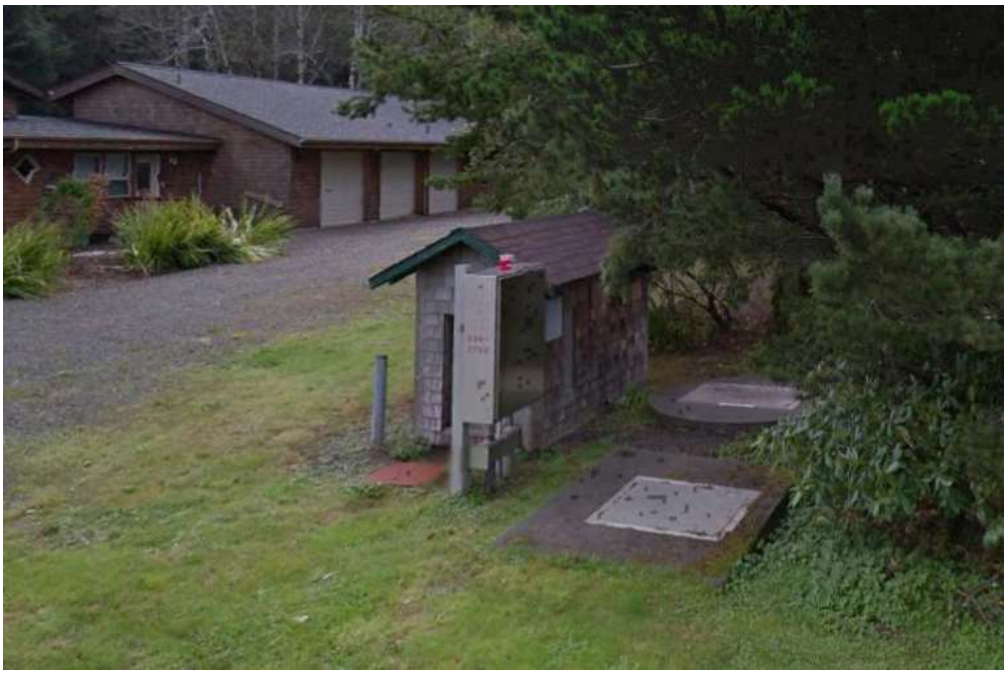
A facility plan for the District was prepared in 2005 which resulted in construction of a new membrane treatment facility with capacity to serve buildout of the community.

1. EXISTING PUMP STATION

After 23 years of service, the Webb Avenue Pump Station warrants improvements due to deterioration of the facility resulting from the harsh coastal environment and increasing sewage flows from residential development in the District.

The Webb Avenue pump station Is located at the intersection of East Beach Road and Webb Avenue, approximately 240 feet east of Highway 101 and receives all of the wastewater from the Arch Cape District. All wastewater enters the station through a single 8-inch gravity sewer line.

The station consists of a 6-foot diameter concrete wet well with duplex submersible pumps, and a standby generator housed in an adjacent wood-framed structure. Sewage is pumped to the WWTP headworks through a 6" AC force main.



Webb Avenue Pump Station

In 1999, the pump station was rebuilt with new pumps, valving, piping, and control system. The submersible pump impellers were replaced in August 2014, increasing pump capacity to 335 gpm (0.482 mgd) utilizing the available remaining pump horsepower without overloading the motor. With both pumps running the pump station is capable of discharging 0.583 mgd (405 gpm), according to the District.

The design of the existing pump station is shown in the following table.

Existing Webb Avenue Pump Station

Pump Station Type	Duplex Submersible
Wet Well	6’ Dia x 16.75’ Deep
Wet Well Volume	3,000 gallons
Wet Well Operating Volume	1.5 feet (316 gallons)
Overflow Water Level	14 feet
Overflow Point	Manhole 300 feet from Pump Station
Overflow Discharge	Overland to Arch Cape Creek
Average Time to Overflow	8 feet above pump on, 30 min @ Ave flow
Pump Station Inflow (Average)	65 GPM (0.095 MGD)
Pump Station Inflow (Peak)	346 GPM (0.499 MGD)
Level Control Type	Float Switches
Alarm	Local Red Alarm Light
Pump Type	Fixed Speed, Non-clog
Capacity (one Pump)	335 gpm @ 64+/- FT TDH
Capacity (two Pumps)	405 gpm @ 70+/- FT TDH
Pump Motor Size	10 Hp
EPA reliability Class	1
Auxiliary Power Type	Diesel Generator
Generator Size	25 kW
Fuel Capacity	24 hours
Transfer Switch Type	Manual

Force Main		
1	Force Main	6” AC
2	Force Main Length	2,150 Feet
3	Profile	Continuously Ascending
4	Average Detention Time	48 Minutes

Design flow at the Webb Avenue pump station is reflected in the treatment plant flow records. A review of the 2018 – 2021 WWTP Discharge Monitoring Reports’ influent flow records showed increased flows and are summarized in the following table:

2018 – 2021 WWTP Discharge Monitoring Reports’ Influent Flow Records

Month	2018			2019			2020			2021		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Jan	0.106	0.124	0.279	0.078	0.119	0.196	0.129	0.245	0.413	0.108	0.228	0.499
Feb	0.084	0.124	0.189	0.075	0.135	0.362	0.087	0.189	0.468	0.111	0.222	0.417
Mar	0.079	0.124	0.242	0.066	0.084	0.123	0.079	0.114	0.212	0.098	0.143	0.248
Apr	0.088	0.164	0.376	0.081	0.119	0.216	0.068	0.094	0.181	0.070	0.090	0.109
May	0.053	0.078	0.105	0.057	0.075	0.106	0.069	0.098	0.145			
Jun	0.054	0.033	0.087	0.054	0.063	0.071	0.073	0.105	0.137			
Jul	0.053	0.061	0.083	0.058	0.075	0.104	0.080	0.075	0.126			
Aug	0.042	0.054	0.066	0.040	0.061	0.190	0.064	0.073	0.085			
Sept	0.041	0.055	0.107	0.041	0.078	0.142	0.040	0.083	0.268			
Oct	0.044	0.077	0.170	0.061	0.120	0.274	0.085	0.136	0.217			
Nov	0.074	0.132	0.312	0.062	0.089	0.139	0.106	0.200	0.329			
Dec	0.087	0.156	0.372	0.070	0.136	0.444	0.110	0.170	0.370			
Wet Avg	0.089	0.134	0.272	0.077	0.124	0.264	0.083	0.145	0.310	0.101	0.176	0.329
GPM	62	93	189	53	86	183	57	100	215	70	122	228
Dry Avg	0.048	0.060	0.103	0.052	0.079	0.148	0.069	0.095	0.163			
GPM	33	41	72	36	55	103	48	66	113			

The DMR records show daily average wet weather flows from the pump station increased over the three-year period from 0.134 mgd (93 gpm) to 0.145 mgd (101 gpm). In addition, the peak day flow increased from 0.272 mgd to a peak day of 0.499 mgd (346 gpm) in January 2021, requiring both pumps to be in service for a portion of the day to meet incoming flow to the pump station.

These flows result in Average Dry Weather Flow of 420 gallons per connection, with the peak day I/I component estimated at 350,000 gpd.

From the DMRs, peak day events are infrequent. The peak day flow has only exceeded 400,000 gpd four days over the past three years. Additionally, the peak day flows have only exceeded 350,000 gpd 12 times in the past three years. During these

infrequent events, two pumps are required at the Webb Avenue Station for very short periods of the day during peak instantaneous flows.

2. Flow Projections

Portland State University Population Research Center's *Coordinated Population Forecast for Clatsop County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2020-2070, Figure 1, page 11,* forecasts slow population growth from 2020 through 2045, with the county in general experiencing a 0.2% growth rate.

However, Arch Cape has continued to experience growth through residential development over the last 5 years, with between 2 – 4 new sewer connections per year. There are currently 345 sewer connections. Full buildout of the community is 485 connections based on Clatsop County Planning constraints.

Because all flow enters the treatment plant through the Webb Avenue PS force main, flow projections are the same at the plant and the pump station. An estimated growth rate of 1% annually is reasonable given the historical growth of Arch Cape. Projecting flows of 420 gpd per connection and peak day I/I of 350,000 gpd for the 20-year planning window and buildout is shown in the following table:

Average Annual and Peak Day Flow Projections

Year	Connections	Avg (mgd)	I/I (mgd)	Peak Day (mgd)
2020	345	0.14	0.35	0.49
2025	363	0.15	0.35	0.50
2030	381	0.16	0.35	0.51
2035	401	0.17	0.35	0.52
2040	421	0.18	0.35	0.53
Buildout	485	0.20	0.35	0.55

There are no flow records to indicate the peak instantaneous flow from the Webb Avenue Pump Station. The station has an existing maximum output of 405 gpm with both pumps operating and the single highest flow of record of 0.499 mgd (346 gpm) did not result in any recorded overflow. This equates to a PIF to Peak Day ratio of 1.17.

Peak day flows typically occur with a rainfall event that extends over several days, and the flow rate would be expected to be relatively constant for the duration of the peak day. As a result, the peak instantaneous flow is estimated to be nearly comparable to the peak day flow.

The PIF is dampened by storage within the collection system and pump station wet well, and the flow to the plant is always only equal to the capacity of the pump. For projecting buildout capacity of this station, the peak day flow and peak instantaneous flow are deemed to be very comparable.

It is reasonable to assume any pumps installed in 2021-22 will need to be replaced prior to buildout of this sanitary district. If peak instantaneous flow events indicate larger pumps are required, they can be installed as part of future pump replacement. It is also reasonable to assume the District will continue to make system improvements to reduce I/I contribution in the future. The projected flows in the table above are conservative by assuming the I/I remains constant through buildout of the District.

As a result, the pump design capacity required to serve a 20-year planning window is recommended to be 400 gpm each, with redundancy provided by the duplex pump installation. This flow can support peak day flows through buildout of the District, assuming no reduction of current I/I levels, and provide a 5% allowance for PIF.

3. Existing Treatment Facility Capacity

The treatment facility was upgraded to a membrane bioreactor process in 2007 with two treatment trains with three membrane units in each train. In 2019, the membranes in the existing six units were replaced and the fourth unit was added to each train, increasing treatment capacity by approximately one third.

The following table lists the current plant capacity at 10 degrees C and current recorded flows, and the projected buildout flows based on 485 connections:

Plant Capacity and Buildout Flow Projections

	Current Plant Design Capacity (mgd)	*Current Record Flows (mgd)*	*485 Connection Buildout Flow (mgd)*
ADWF	0.305	0.145	0.203
MMWWF	0.345	0.228	0.320
PDAF	0.467	0.499	0.550
PIF	0.656	0.583	0.576

The capacity of the treatment facility will support buildout conditions without further expansion. Over the time period required to achieve buildout of the community, the District should continue to reduce I/I whenever possible to reduce the projected peak day flow to avoid approaching the plant capacity limits, although peak day events are very infrequent.

4. Pump Station Improvements

Pump station improvements will include installation of two new submersible pumps with a capacity of 400 gpm each, at approximately 100 Ft TDH; new pump station controls with variable frequency drives (VFDs) to better stabilize flow to the treatment facility; and a new standby generator located in a new generator/control building. The existing wetwell will be inspected for deterioration and repaired as needed.

A review of pumps and pump curves considered for the pump station improvement during the preliminary design typically have a minimum flow of 100 gpm when operated as variable speed pumps. This will result in the pumps cycling on and off frequently during dry weather low flows. The pumps will be controlled by VFDs which will allow for frequent motor starts without damaging or reducing the motor life.

The existing force main is adequate for the increased flows with a maximum velocity of 4.5 fps at 400 gpm, however, preliminary design calculations indicate the increase in dynamic losses will require the horsepower to be increased from the current 10 Hp motors.

The standby generator is proposed to be housed in a new wood framed structure that can provide an architectural appearance similar to the adjoining residence. The station controls will be housed in the structure, although the available right-of-way may limit the size of any proposed structure at this site. Additional easement area may be needed.

Bypass pumping will be required to keep the station in service during construction.

5. Project Cost Estimate

Total project cost is estimated at $300,000 as detailed on the following page. Some cost reductions can be achieved during the design process related to the building and general mechanical improvements. Operations of the new station should be less than the current station operating cost due to newer and more efficient equipment, which initially will handle the same current flow loadings.

Maintenance costs for the rehabilitated station will be substantially lower than the existing station; however, maintenance funds should continue to be collected and placed in a reserve account to repair and replace equipment when needed in the future.

ARCH CAPE SANITARY DISTRICT
Webb Ave Pump Station Rehabilitation Estimate of Cost
July 2021

	Quantity	*Units*	*Cost*	*Total*
Mechanical				
Demolition	1	LS	$10,000	$10,000
Bypass pumping	1	LS	$5,000	$5,000
Pumps	2	EA	$18,000	$36,000
Miscellaneous piping	1	LS	$5,000	$5,000
Misc Mechanical Improvements	1	LS	$5,000	$5,000
Concrete/footings/base rock	1	LS	$5,000	$5,000
Generator Building	1	LS	$60,000	$60,000
Subtotal Mechanical			**Subtotal**	**$126,000**
Electrical/SCADA				
Demolition	1	EA	$5,000	$5,000
Level Controls, transducer & Floats	1	LS	$3,000	$3,000
Conduit/Wiring/Grounding System	1	LS	$10,000	$10,000
Standby Generator/Fuel Tank	1	LS	$40,000	$40,000
Pump disconnect Panel	1	LS	$8,000	$8,000
Pump Control Panel	1	LS	$35,000	$35,000
Telemetry System	1	LS	$4,000	$4,000
Subtotal Electrical/SCADA			**Subtotal**	**$105,000**
			Construction Total	**$231,000**
Mobilization, Bonds & Insurance (5%)				$11,550
Engineering, Legal, Admin & Contin (25%)				$57,450
TOTAL PUMP STATION REHABILITATION COST				**$300,000**

SANITARY DISTRICT:

We received 3.4" inches of rainfall in May and the plant received 2.5 million gallons of influent.

Webb Lift Station has been experiencing some intermittent pump cycling issues. Cannon Beach Electric believes the cause is a faulty controller, and a new one has been ordered and is expected in 2-4 weeks. Staff is keeping a close eye on this station, as a reminder, if anyone sees the red light come on at the station please call the number on the control panel and our emergency numbers.

County Public Works is in the initial stages of designing a new pedestrian bridge over Asbury Creek on Pacific Ave. I will continue to provide updates as I learn more.

Biosolids will be land applied at the biosolids site in July.

Cannon Beach Fire will be doing a major upgrade in the next few months to the network and AV equipment. The Fire Chief inquired if the District would like to contribute to share in some of the cost of the funding along with the Community Club.

Due to the unanticipated success of remote meetings during the pandemic, public entities will in the future be required to make all meetings accessible remotely through technological means and provide opportunity for members of the public to participate remotely and submit oral and written testimony. I will explore some options with the Fire Chief for how to most effectively allow us to do this in the fire hall and report to the Board.