

**LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT**

**MEMORANDUM**

**DATE:** MARCH 23, 2021

**TO:** BOARD OF DIRECTORS  
Lake Arrowhead Community Services District

**FROM:** MATT BROOKS, Operations Manager

**SUBJECT:** OPERATIONS MANAGER'S REPORT

**A. RECOMMENDATION**

This is an information item.

**B. REASON FOR RECOMMENDATION**

This is an information item.

**C. BACKGROUND INFORMATION**

This report is to give an update on water delivered in 2021. Also included is a status update on projects within the Operations department.

**D. FISCAL IMPACT**

This is an information item.

**E. ENVIRONMENTAL IMPACT**

This is an information item.

**F. ATTACHMENTS**

- 2021 Monthly Report
- 2020 Monthly Report
- February 2021 Water Delivered Analysis & Follow-up Information
- Operations Department Project Status Update

**ARROWHEAD WOODS MONTHLY DATA  
ACRE FEET**

2021 MONTH	(1) TRANSFER TO GV LAKE (b)	(2) WELLS TO SYSTEM (c)	(3) BERNINA PLANT	(4) CEDAR GLEN PLANT	(5) COMBINED PLANT (b) (c)	(6) COMBINED PLANT BACKWASH (c)	(7) BERNINA RECYCLE (c)	(8) ROTW CLAWA PURCHASE (a)	(9) BRENTWOOD CLAWA PURCHASE (a)	(10) COMBINED PURCHASE (a) (c)	(11) LAKE DRAW (b)	(12) DELIVERED TO DISTRIBUTION (c) (d)	(13) METERED WATER (d)	(14) EMERGENCY TRANSFER TO DLP (d)	(15) STORAGE VOLUME (e)	(16) STORAGE VOLUME CHANGE +/- (d)	(17) UN-METERED WATER (d)
JANUARY	0.00	14.30	64.52	0.00	64.52	4.64	1.77	0.00	0.00	0.00	64.52	75.95	62.23	0.00	26.75	-1.05	14.77
FEBRUARY	0.00	12.49	37.67	21.25	58.92	5.34	1.37	0.00	0.00	0.00	58.92	67.44	52.34	0.00	25.70	0.41	14.69
MARCH	0.00				0.00					0.00	0.00	0.00			26.11	0.00	0.00
<b>1ST QUARTER</b>	<b>0.00</b>	<b>26.79</b>	<b>102.19</b>	<b>21.25</b>	<b>123.44</b>	<b>9.98</b>	<b>3.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>123.44</b>	<b>143.39</b>	<b>114.57</b>	<b>0.00</b>	<b>78.56</b>	<b>-0.64</b>	<b>29.46</b>
APRIL	0.00				0.00					0.00	0.00	0.00				0.00	0.00
MAY	0.00				0.00					0.00	0.00	0.00				0.00	0.00
JUNE	0.00				0.00					0.00	0.00	0.00				0.00	0.00
<b>2ND QUARTER</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>SEMI-ANNUAL</b>	<b>0.00</b>	<b>26.79</b>	<b>102.19</b>	<b>21.25</b>	<b>123.44</b>	<b>9.98</b>	<b>3.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>123.44</b>	<b>143.39</b>	<b>114.57</b>	<b>0.00</b>	<b>78.56</b>	<b>-0.64</b>	<b>29.46</b>
JULY	0.00				0.00					0.00	0.00	0.00				0.00	0.00
AUGUST	0.00				0.00					0.00	0.00	0.00				0.00	0.00
SEPTEMBER	0.00				0.00					0.00	0.00	0.00				0.00	0.00
<b>3RD QUARTER</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
OCTOBER	0.00				0.00					0.00	0.00	0.00				0.00	0.00
NOVEMBER	0.00				0.00					0.00	0.00	0.00				0.00	0.00
DECEMBER	0.00				0.00					0.00	0.00	0.00				0.00	0.00
<b>4TH QUARTER</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>ANNUAL TOTAL</b>	<b>0.00</b>	<b>26.79</b>	<b>102.19</b>	<b>21.25</b>	<b>123.44</b>	<b>9.98</b>	<b>3.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>123.44</b>	<b>143.39</b>	<b>114.57</b>	<b>0.00</b>	<b>78.56</b>	<b>-0.64</b>	<b>29.46</b>

(a) CLAWA consumption numbers are based upon monthly billing statements provided by CLAWA. CLAWA reads these meters on or near the 24th of each month, so the numbers may not be an actual representation of water consumed for said calendar month.

(b) Lake Draw = (1) + (5)

(c) Delivered to Distribution = (2) + (5) - (6) + (7) + (10)

(d) Un-Metered Water = ((12) - (13+14)) - (16)

(e) Storage Volume calculated 8:00 am the 1st of every month.

\* Due to technical issues with our metering system, the METERED WATER (13) data for January was collected between 02-01-2021 and 02-10-2021.

**ARROWHEAD WOODS MONTHLY DATA  
ACRE FEET**

2020 MONTH	(1) TRANSFER TO GV LAKE (b)	(2) WELLS TO SYSTEM (c)	(3) BERNINA PLANT	(4) CEDAR GLEN PLANT	(5) COMBINED PLANT (b) (c)	(6) COMBINED PLANT BACKWASH (c)	(7) BERNINA RECYCLE (c)	(8) ROTW CLAWA PURCHASE (a)	(9) BRENTWOOD CLAWA PURCHASE (a)	(10) COMBINED PURCHASE (a) (c)	(11) LAKE DRAW (b)	(12) DELIVERED TO DISTRIBUTION (c) (d)	(13) METERED WATER (d)	(14) EMERGENCY TRANSFER TO DLP (d)	(15) STORAGE VOLUME (e)	(16) STORAGE VOLUME CHANGE +/- (d)	(17) UN-METERED WATER (d)
JANUARY	0.00	15.43	24.03	31.20	55.23	4.72	1.50	0.00	0.00	0.00	55.23	67.44	55.99	0.00	26.57	0.23	11.22
FEBRUARY	0.00	14.64	46.73	0.00	46.73	4.48	2.79	0.00	0.00	0.00	46.73	59.68	48.78	0.00	26.80	0.00	10.90
MARCH	0.00	15.07	44.08	0.00	44.08	3.51	2.59	0.00	0.00	0.00	44.08	58.23	47.30	0.00	26.80	0.34	10.59
<b>1ST QUARTER</b>	<b>0.00</b>	<b>45.14</b>	<b>114.84</b>	<b>31.20</b>	<b>146.04</b>	<b>12.71</b>	<b>6.88</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>146.04</b>	<b>185.35</b>	<b>152.07</b>	<b>0.00</b>	<b>80.17</b>	<b>0.57</b>	<b>32.71</b>
APRIL	0.00	15.53	56.02	0.00	56.02	4.64	2.80	0.00	0.00	0.00	56.02	69.71	55.00	0.01	27.14	0.22	14.48
MAY	0.00	16.25	132.44	0.00	132.44	9.59	7.93	0.00	0.00	0.00	132.44	147.03	128.20	0.00	27.36	-3.07	21.90
JUNE	0.00	15.24	112.47	37.22	149.69	11.71	6.70	0.00	8.99	8.99	149.69	168.91	149.47	0.00	24.29	0.99	18.45
<b>2ND QUARTER</b>	<b>0.00</b>	<b>47.02</b>	<b>300.93</b>	<b>37.22</b>	<b>338.15</b>	<b>25.94</b>	<b>17.43</b>	<b>0.00</b>	<b>8.99</b>	<b>8.99</b>	<b>338.15</b>	<b>385.65</b>	<b>332.67</b>	<b>0.01</b>	<b>78.79</b>	<b>-1.86</b>	<b>54.83</b>
<b>SEMI-ANNUAL</b>	<b>0.00</b>	<b>92.16</b>	<b>415.77</b>	<b>68.42</b>	<b>484.19</b>	<b>38.65</b>	<b>24.31</b>	<b>0.00</b>	<b>8.99</b>	<b>8.99</b>	<b>484.19</b>	<b>571.00</b>	<b>484.74</b>	<b>0.01</b>	<b>158.96</b>	<b>-1.29</b>	<b>87.54</b>
JULY	0.00	15.66	118.68	58.27	176.95	12.16	6.70	0.00	13.29	13.29	176.95	200.44	183.88	0.00	25.28	1.51	15.05
AUGUST	0.00	15.07	113.77	65.33	179.10	12.99	5.78	0.00	13.22	13.22	179.10	200.18	181.37	0.00	26.79	1.24	17.57
SEPTEMBER	0.00	14.27	101.99	59.93	161.92	11.34	5.63	0.00	10.50	10.50	161.92	180.98	164.41	0.00	28.03	0.06	16.51
<b>3RD QUARTER</b>	<b>0.00</b>	<b>45.00</b>	<b>334.44</b>	<b>183.53</b>	<b>517.97</b>	<b>36.49</b>	<b>18.11</b>	<b>0.00</b>	<b>37.01</b>	<b>37.01</b>	<b>517.97</b>	<b>581.60</b>	<b>529.66</b>	<b>0.00</b>	<b>80.10</b>	<b>2.81</b>	<b>49.13</b>
OCTOBER	0.00	14.76	91.85	46.27	138.12	11.13	5.41	0.00	0.00	0.00	138.12	147.16	132.27	0.00	28.09	-0.64	15.53
NOVEMBER	0.00	13.76	69.12	0.00	69.12	5.64	4.36	0.00	0.00	0.00	69.12	81.60	70.04	0.00	27.45	-0.29	11.85
DECEMBER	0.00	14.25	67.65	0.00	67.65	5.94	1.47	0.00	0.00	0.00	67.65	77.43	65.35	0.00	27.16	-0.41	12.49
<b>4TH QUARTER</b>	<b>0.00</b>	<b>42.77</b>	<b>228.62</b>	<b>46.27</b>	<b>274.89</b>	<b>22.71</b>	<b>11.24</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>274.89</b>	<b>306.19</b>	<b>267.66</b>	<b>0.00</b>	<b>82.70</b>	<b>-1.34</b>	<b>39.87</b>
<b>ANNUAL TOTAL</b>	<b>0.00</b>	<b>179.93</b>	<b>978.83</b>	<b>298.22</b>	<b>1277.05</b>	<b>97.85</b>	<b>53.66</b>	<b>0.00</b>	<b>46.00</b>	<b>46.00</b>	<b>1277.05</b>	<b>1458.79</b>	<b>1282.06</b>	<b>0.01</b>	<b>321.76</b>	<b>0.18</b>	<b>176.54</b>

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(b) Lake Draw = (1) + (5)

(c) Delivered to Distribution = (2) + (5) - (6) + (7) + (10)

(d) Un-Metered Water = ((12) - (13+14)) - (16)

(e) Storage Volume calculated 8:00 am the 1st of every month.

\* 0.01 AF transferred from LACSD to DLP for testing purposes while putting interconnection online in April 2020.

March 23, 2021

February 2021 Water Delivered Analysis & Follow-up Information

- In February 2021 (67.44 AF), consumption was up by 13% when compared to February 2020 (59.68 AF). These numbers are based off column (12) on the Report, and only counts water delivered to the Distribution System, and only counts water delivered to the Distribution System.
- February 2021 Lake Draw = 58.92 AF vs February 2020 = 46.73 AF.
- February 2021 Wells to System = 12.49 AF vs February 2020 = 14.64 AF.
- February 2021 total CLAWA purchase = 0 AF vs February 2020 = 0 AF.
- Following up President Wurm's inquiry at the last Board meeting regarding the Lift Station #33 Pump Replacement project:
  - Budgeted Amount \$150,000
  - Expenditures to date: \$128,693.01
    - Includes (4) new pumps, (1) new motor (for 4<sup>th</sup> pump), (2) 12" plug valves, 12" check valve, misc. 12" fittings.
  - Remaining Budget Available \$18,149.41
    - Still need Switchgear & any other SCE requirements due to adding the 4<sup>th</sup> pump. Cost unknown, waiting on SCE.
    - Still need motor stand and grid coupler for 4<sup>th</sup> pump (approximately \$1500).
    - Still need to assume the cost of District Labor, approximately \$18,000 (280-man hours).

Based on the estimated District Labor necessary to complete the work, this project may go slightly over budget.

March 23, 2021

## Operations Department Project Status Update

### Water Operations

- **Spyglass Water Tank Replacement and Site Improvements:**  
Project is nearing completion of 100% design. Staff from Water Operations, Field Operations, and Mechanical Operations have all been involved in the planning of the necessary site-work that needs to be done prior to the project commencing. The pre-project work will consist of the addition of temporary storage tanks just off-site to provide adequate pressure and volume to the local area for the hydro-zone pumps during their initial start-ups. Variable frequency drives (VFDs) will also be added to the Spyglass hydro-zone pumps to slow them down to help alleviate low or negative suction pressures when the pumps start up. Additionally, some onsite plumbing and piping will need to be done by the Field Operations department prior to the project commencing. This will keep the contractor's scope of work to remain within the Spyglass gravity system rather than include necessary work by the contractor to the hydro-pneumatic system.
- **Water Storage tank inspection/cleaning:**  
Water Operations staff is in the process of scheduling four water tanks to be inspected and cleaned if necessary, with the work being completed prior to June 30, 2021. The four tanks on this year's list are Banff, Brentwood, Polar, and Kodiak water storage tanks. Water Operations staff's goal is to have 4+ tanks inspected and cleaned per year, depending on the budgets going forward.
- **Corrosion Control Treatment Optimization:**  
This is a requirement because of the Lead Exceedance in 2016. In June 2020 Water Ops staff began the first of two, twelve-month rounds of required Water Quality Parameter Sampling to help determine the proper corrosion control chemical and dosages going forward. Water Operations staff has started the Permit Amendment Application Process with the Division of Drinking Water (DDW) and has also began the process of reaching out to chemical suppliers and equipment vendors, to evaluate orthophosphate blends and proper pump and equipment sizing. The District is currently on pace to meet or exceed all deadlines established by the DDW.
- **Watershed Sanitary Survey 2020 Update:**  
The District's Watershed Sanitary Survey (WSS) is required to be updated every five years. The last update (2015 Update) was completed in October 2016, and this update is due to be completed by October 2021. District staff has recently started on this project and we anticipate having it completed ahead of the October 2021 deadline. This is the first time that District staff has taken on updating this report without the assistance of a consultant. In 2016 the District paid a consultant \$21,315 for their assistance with updating the WSS.

- Consumer Confidence Reports/Annual Reports:  
Water Operations staff has started working on these annual reports and we anticipate having them completed ahead of their deadlines (May 15 and July 1, 2021). This is the first time in over 10+ years that the District has taken on producing the Consumer Confidence Reports (CCRs) without the assistance of an outside consultant. On average, the District would typically spend around \$7500-\$10,000 for outside assistance with the CCRs.
- The EPA has required all water systems serving greater than 3,300 people to complete a Risk & Resilience Assessment (RRA) and corresponding Emergency Response Plan. The RRA evaluates vulnerabilities, threats, and consequences from natural hazards and malevolent acts. The RRA was completed over a couple-month period and was finalized and certified on March 10, 2021. The deadline for certification is June 30, 2021. The District has since started on the required Emergency Response Plan and should have it completed well before the deadline of December 30, 2021. At the next regularly scheduled Board of Directors meeting in April, District staff will give more detailed information regarding the District's Disaster Preparedness planning.
- Cedar Ridge Water Pump Station pump replacement project:  
Mechanical Operations staff has purchased and received 95% of the equipment to complete the job. This equipment includes a new diesel generator, automatic transfer switch, two new vertical turbine pumps, one new electric fire pump to replace the existing diesel-powered fire pump, VFDs, and most of the new switch gear. District Mechanical Operations staff will be installing these pumps and equipment but are currently waiting for SCE approval to move forward with the project.
- LACC Well #2 Rehab:  
Contract awarded at the February 23, 2021 Board of Directors meeting.
- Blue Jay Well:  
Bid opening March 4, 2021.

#### Wastewater Operations

- NanO2 nano-infused oxygen technology pilot study:  
Pilot study to assist with the nitrification process at Grass Valley WWTP has finished as of January 2021. The District is still working with Dudek and anticipating a report summarizing this pilot study, along with the Microvi study that was completed in 2019 and comparing the two technologies vs conventional wastewater treatment technologies.
- GVWWTP Screw Press redundancy/ Belt Filter-Press removal:  
Equipment procurement contract was awarded at the February 23<sup>rd</sup> Board of Directors meeting. Equipment lead-time has been quoted to be approximately six months. As we get closer to the delivery date, the District will be going out to bid for the installation of the new equipment and removal of the antiquated belt filter-press. District engineering staff has been working on developing the plans and specs "in-house", saving the District a significant amount of money by not having to contract the design out to a third-party engineering firm.

- **Assessment of Per- and Polyfluoroalkyl Substances (PFAS) at the Grass Valley WWTP and Hesperia Effluent Management Site (EMS):**  
 This study is a requirement of all wastewater treatment plants within the State of California 1.0 MGD or greater and came by an Order issued by the State Water Resources Control Board. The requirement consists of (4) sets of quarterly samples taken at the Grass Valley WWTP (influent & effluent), a one-time biosolids sampling event of the sludge from Grass Valley WWTP, and a one-time sampling event at the Hesperia EMS. Also required is the submittal of a Groundwater Sampling & Analysis Plan which includes the rationale behind which test/monitoring wells were chosen, direction of groundwater flow beneath the EMS, etc. The District is currently in compliance with these requirements and plans on having the study finished by September 30, 2021, as required by the State Board Order.
- **Rehabilitation of the Test/Monitoring wells at the Hesperia EMS:**  
 In 2017 the District had all thirteen Monitoring and Test Wells inspected. It was determined at that time that twelve wells need to be rehabilitated and one well needs to be re-drilled. District staff is hopeful to get this project completed during this budget cycle.
- **Annual Wastewater Reports:**  
 Wastewater Operations staff has been working on these reports and we anticipate having them completed ahead of their deadlines (March 30 and April 30, 2021).
- **Lift Station #33 Pump replacement project:**  
 This project is to replace the three existing pumps that are 30+ years old and add a fourth pump for redundancy. All four pumps have been purchased along with some additional necessary appurtenances (valves, fittings, etc.). Some additional equipment still needs to be purchased before the work can commence. District Mechanical Operations staff will be installing these pumps and equipment.
- **Lift Station #18 Pump replacement project:**  
 There is an Action Item to award a contract for procurement of four pumps for this project tonight. The additional budget will be required for the purchase of necessary parts and appurtenances, along with the cost of District Labor for installation of the new pumps and equipment. District Mechanical Operations staff will be installing these pumps and equipment.
- **Lift Station #2 (Lake Arrowhead Village) relocation project:**  
 The District would like to relocate the wetwell and equipment to a location near the existing location. There are two issues with the existing location of the lift station: access can be very challenging during weekends and holidays, and the wetwell size is small which can be problematic with its close proximity to the lake. District staff has a conceptual idea of where we would like to move the facility and has had conversations with the new owners of the Village regarding this. The location has been surveyed but additional work still needs to be done to see if the project is feasible. This new location would address the access issues and also include a larger wetwell.

- GVWWTP Recycled Water tank/additional storage/tertiary wetwell:  
Wastewater Operations staff has met with the Engineering department and come up with some ideas and possible locations for either a steel bolted tank, or the possibility of adding a second pond to give additional capacity for the tertiary wetwell, which can also be used for additional storage during events of hydraulic overloading. This will help the denitrification process that currently struggles during the irrigation months when the pond is used as a forebay for the Recycled Water pumps. The pond was originally designed to be used as a forebay for the tertiary pumps to pump secondary effluent through the denitrification plant. The Engineering department is currently looking into the feasibility of this project.
- GVWWTP SCADA Room:  
Wastewater Operations staff has met with the Engineering department to discuss the needs for a SCADA room, the options, and conceptual ideas to date. Currently, the wastewater operator's workstations and SCADA system are housed in a hallway within the Operations Building at GVWWTP.
- Pall Plant air compressor purchase:  
Compressed air is an integral part of the recycled water operation. It is used to actuate all the pneumatic valves and is used to backwash and clean the membranes on the Pall Membrane Filtration system (MF). District staff has had many issues over the past 10+ years with the existing compressor system(s) and has spent a lot of money in repair costs over the recent years to keep the system up and running. If the compressors fail or go down for an extended period during irrigation season, this could severely impact the District's ability to deliver recycled water to the golf course for irrigation purposes. District staff has been reaching out to compressed air industry professionals along with other wastewater utilities with Pall MF systems to see what they are using and inquiring about reliability, etc. District staff is working towards an equipment procurement for a new compressed air system to be brought before the Board for approval within the next couple of months. District Mechanical Operations staff will be installing the new compressed air system.
- GVWWTP Tesla Battery Storage project:  
This project is tentatively on-track to be completed by the end of March 2021. Once completed, this battery storage project will allow for energy and cost savings by "shaving" peak-loads during times of heavy demand and/or peak pricing from SCE. During power outages, the batteries will power the "CCC" building at the GVWWTP which houses approximately 75% of the duty pumps for the various treatment processes. The batteries should last for several hours before needing the diesel-powered back-up generator to start-up and supply power for that building.
- Conversion from Methanol to a safer, more stable carbon source for the denitrification process at GVWWTP:  
District staff is planning on a small-scale pilot project using a product called Micro-C to replace methanol as a carbon source. Micro-C is much safer and more stable than methanol. The District anticipates starting this project closer to Summer 2021.