

**SEWAGE AND WASTEWATER ADVISORY COMMITTEE**

Conveyed virtually in accordance with the Governor's Declaration of Emergency Directive 006  
**Advisory to the Board of Clark County Commissioners**  
**Meeting Minutes of February 3, 2021**

MEMBERS	Present	Absent
<b>Clark County (2 Members)</b>		
John Solvie (Member)	X	
Ebrahim Juma (Member)	X	
Joseph Leedy (Alternate)	X	
Sara Gedo (Alternate)	X	
<b>City of Las Vegas (3 Members)</b>		
Mark Dunbar (Member)	X	
John Bettencourt (Member)	X	
Sharon Harney (Member)	X	
Charles Trushel (Alternate)		X
Dan Combs (Alternate)		X
Nalleli Herrera (Alternate)	X	
<b>City of Henderson (2 Members)</b>		
Adrian Edwards (Member)	X	
Howard Analla (Member) VICE-CHAIR	X	
Kyle Okamura (Alternate)		X
VACANT (Alternate)		
<b>City of North Las Vegas (1 Member)</b>		
Frazier Speaks (Member)		X
Daniel Ybarra (Alternate)	X	
<b>Clark County Water Reclamation District (1 Member)</b>		
Daniel Fischer (Member) CHAIR	X	
Greg Turner (Alternate)		X
<b>Moapa Valley Water District (1 Member)</b>		
Joe Davis (Member)		X
Lon Dalley (Alternate)	X	
<b>Las Vegas Valley Water District (1 Member)</b>		
Todd Tietjen (Member)		X
Xiaoping Zhou (Alternate)	X	
<b>Mesquite (1 Member)</b>		
Bill Tanner (Member)		X
Travis Anderson (Alternate)		X
<b>Virgin Valley Water District (1 Member)</b>		
VACANT (Member)		
Aaron Bunker (Alternate)		X
<b>Boulder City (1 Member)</b>		
Dennis Porter (Member)	X	
Jim Keane (Alternate)		X

**Guests Present**

Donahue, Rick

Bakrania, Bella

CCWRD

Geosyntec Consultants

**CALL TO ORDER**

The Sewage and Wastewater Advisory Committee (SWAC) meeting was called to order by Chair Dan Fischer, Clark County Water Reclamation District at 9:02 a.m. It was confirmed that the meeting was properly noticed and posted in accordance with the Open Meeting Law.

**1. COMMENTS BY THE GENERAL PUBLIC - None**

**2. APPROVAL OF THE MINUTES OF THE MEETING OF NOVEMBER 4, 2020**

Howard Analla moved and John Bettencourt seconded to accept the November 4, 2020 minutes. The motion was unanimously approved.

**3. APPROVAL OF AGENDA WITH THE INCLUSION OF ANY EMERGENCY ITEMS AND DELETION OF ANY ITEMS**

John Bettencourt moved and Mark Dunbar seconded to accept the agenda. The motion was unanimously approved.

**4. ELECT/RE-ELECT CHAIR AND VICE CHAIR**

Adrian Edwards moved and John Bettencourt seconded to re-elect Dan Fischer as the Chair and Howard Analla as the vice chair for 2021. The motion was unanimously approved.

**5. DISCUSSION OF QUARTERLY FLOW REPORT**

The group discussed the flow report for the fourth quarter of 2020:

- WRD continues to see reduced wastewater flows due to COVID impacts reducing tourist travel to the Strip. Other jurisdictions have slight variations in flows but overall are more resilient to COVID impacts.
- LVVWD monitors return flow credits into the Las Vegas Wash and confirmed that flows are lower than normal, which is consistent with the decreased flow pattern observed by WRD. Flows have recently started to rebound but future trends are unknown.
- COH, CNLV, Moapa Valley and Boulder City are seeing significant increases in water production. Boulder City suspects the increase is the result of golf course and landscape irrigation.

**6. MEMBER UPDATES**

**A. Moapa Valley Water District**

- Currently researching the possible causes of increased water production.

**B. Las Vegas Valley Water District**

- Experts project that there is a higher probability of algal blooms in Lake Mead this coming summer due to the warm 2020 winter.

**C. Boulder City**

- Nothing to report.

**D. Virgin Valley Water District**

- N/A

**E. City of Mesquite**

- N/A

## **F. City of Las Vegas**

- CLV restructured and placed the wastewater treatment plant under Public Works. A long-term goal is to merge O&M and Public Works.
- CLV is planning inject cleaned methane from 12 anaerobic digesters into the SW Gas pipeline that runs along Vegas Valley. The process will begin once an agreement is reached.
- City Manager announced all city employees will be back in office by March 15.
- Filtration building rehabilitation project design is complete. Project will be out for bid in the next few weeks.

## **G. Clark County Water Reclamation District**

- Collection System Updates:
  - Whitney lift station is a CMAR project. Candidates were interviewed and a final selection will be made soon, pending final approval by the BOT in March.
  - Lincoln lift station will achieve 90% design by the end of February.
  - Collection System will replace damaged manhole frames and covers as a part of NDOT's Nellis Rd Improvements project.
  - Major sewer alignment moves will be made to accommodate NDOT's two interchange projects: Tropicana I-15 Interchange project and Flamingo I-15 Interchange project.
- Flamingo Plant Updates:
  - Design is on-going for capacity expansions for the plant headworks, primary, secondaries, and grit. In order to make room for the expansion, demolition is expected to begin soon.
  - A newly constructed reclaimed water pump station is done and in operation.
  - DAFTS rehabilitation project is on-going.
  - A plastic influent pipe broke and flooded the basement of the membrane and ozone facility, resulting damaged equipment that needs to be replaced. WRD is considering replacing all plastic pipes with stainless steel pipes.
  - A fire occurred at one of the biofilter fans at headworks facility. Two large fans and ducting was lost. Repairs are expected to be costly. As a temporary measure, fans are directing air through carbon.
- Moapa Valley lift station replacement is in redesign.

## **H. City of North Las Vegas**

- Work on the Nellis reuse water line is on-going. The expectation is that the line will become operational during the next quarter.
- Completed carbon and GAC replacement in five units.
- Sludge conveyer system project bid was awarded. Construction is scheduled to begin in July.

## **I. City of Henderson**

- Wastewater projects:
  - Lake Las Vegas lift station project is moving forward, despite a pump delivery delay until March or April 2021.
  - In February, an Australian company will perform an evaluation of the Green Valley Force Main Reclaim line to determine pipe thickness. Results will determine the direction to upgrade the pipe and make it usable in the downhill mode to bring water back from the SWRF to the WRF.

- Design for the west chemical building at WRF is 60% complete.
- UV channel improvements project at the WRF is on-going.
- Air treatment duct system is being replaced at the SWRF; the project is on-going.
- At the SWRF, the biological treatment for headworks and the bioreactor systems will receive new carbon media.
- Assistant Manager Position will be publicly posted soon.
- Potable water projects:
  - EPA published updates to the lead and copper rules, particularly when it comes to lead service lines. City of Henderson does not have any lead service lines. EPA is mandating an inventory of the line materials, and additional sampling at childcare facilities and schools. Sampling must meet the new action level to 10 ppb.

**7. CLARK COUNTY / 208 AREA WIDE WATER QUALITY MANAGEMENT PLAN UPDATE**

- A. Water Quality Standards update: A meeting was held with EPA in November to discuss the efficacy of existing fish tissue data. EPA has responded that they want additional fish and water testing to be performed. We're working with NDEP to address it.
- B. MS4 Permit update: The draft permit is still being reviewed by the NDEP and has not yet been distributed to the MS4 co-permittees.
- C. 208 update: Work is ongoing on the recommendations assessment and the plant project assessment.

**8. MEMBER VACANCIES**

- A. Virgin Valley Water District – 1 member vacancy
- B. City of Las Vegas – 1 alternate vacancy; 1 member vacancy
  - Mark Dunbar clarified that both the alternate and member vacancies have been formally filled.
- C. Adrian Edwards clarified that the City of Henderson has 1 alternate vacancy

**9. COMMENTS BY THE GENERAL PUBLIC - None**

**10. SCHEDULE NEXT MEETING**

Dan Fischer moved and Howard Analla seconded to scheduled for May 5, 2021 at 9:00 am at the Clark County Water Reclamation District, 5857 E. Flamingo Road, Las Vegas, NV, 89122. A meeting invite will be sent out.

**11. ADJOURNMENT**

The meeting was adjourned at 10:06 am.

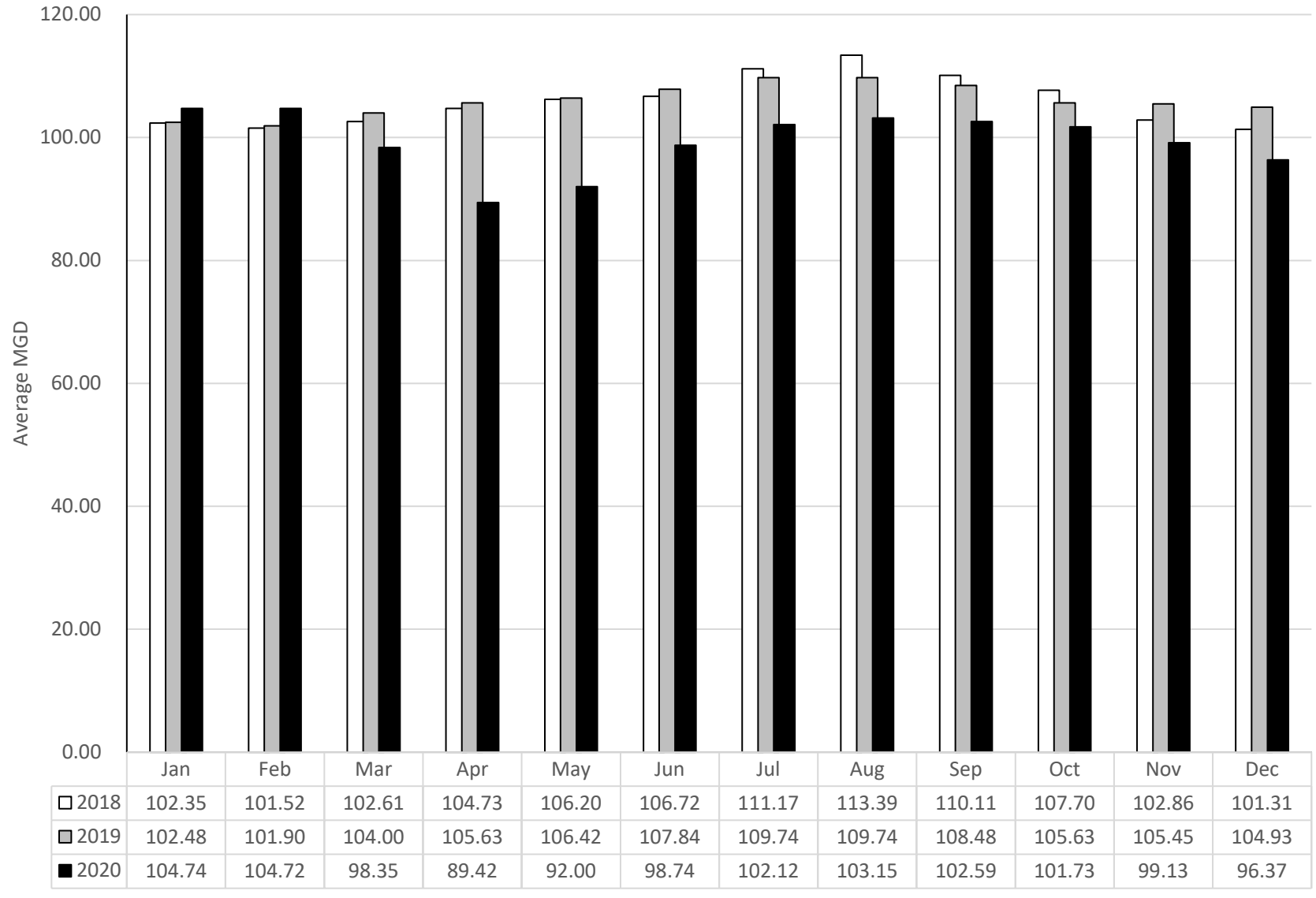
2020  
4<sup>th</sup> Quarter Flow Report  
For  
Clark County Sewage  
And  
Wastewater Advisory  
Committee  
(SWAC)

January 28, 2021

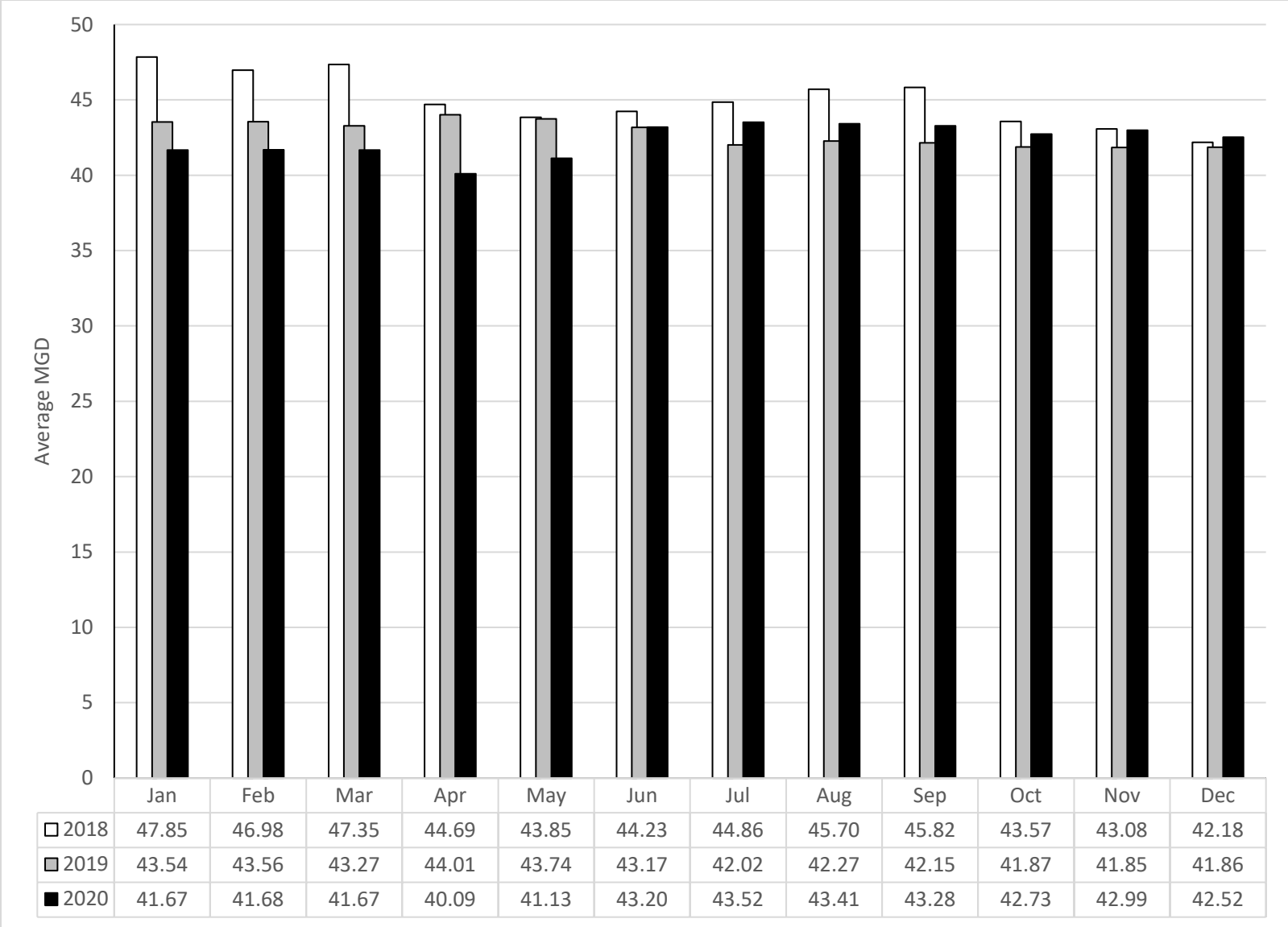
# Wastewater Flows

2018 through 2020

# Clark County Water Reclamation District Wastewater Flows

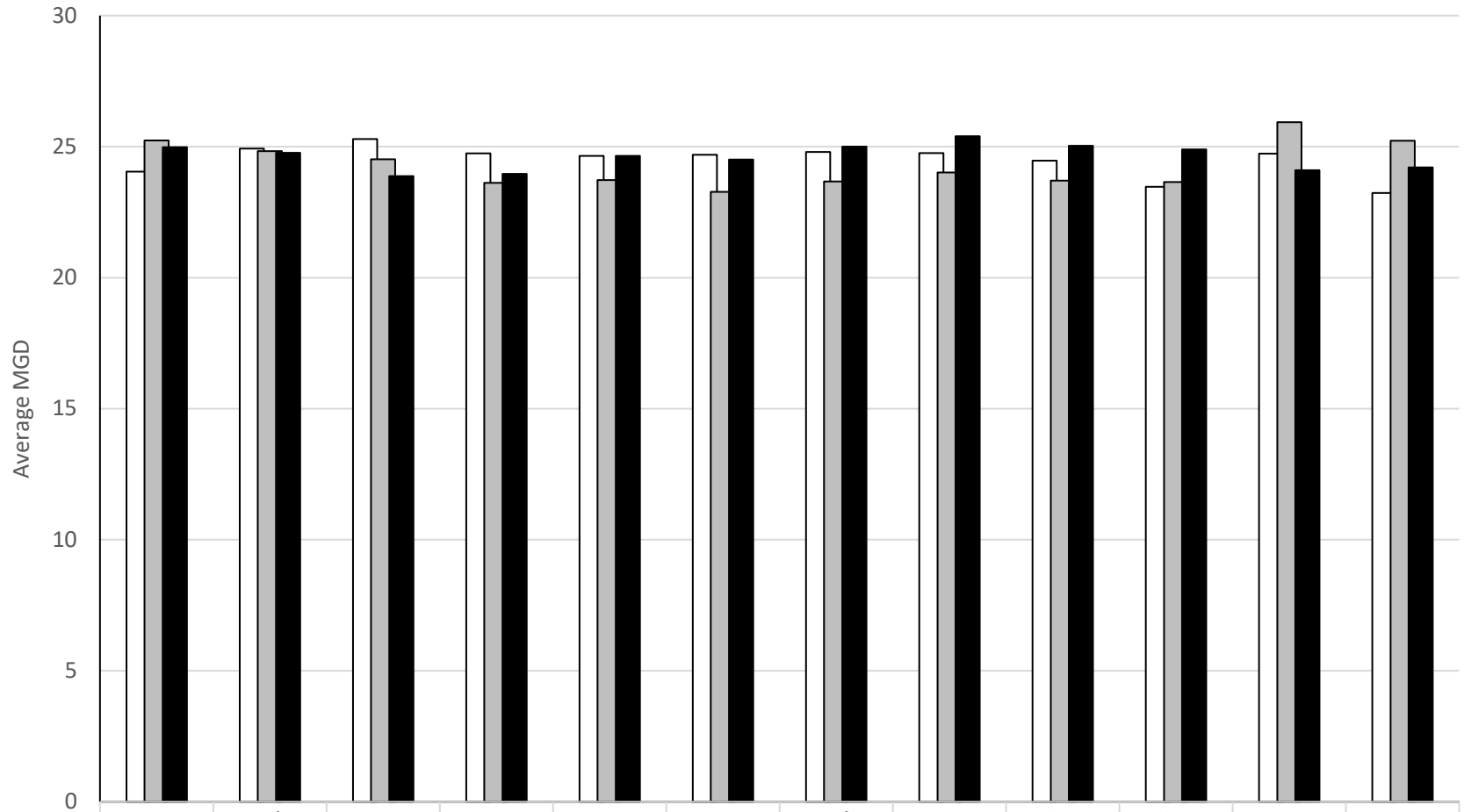


# City of Las Vegas Wastewater Flows



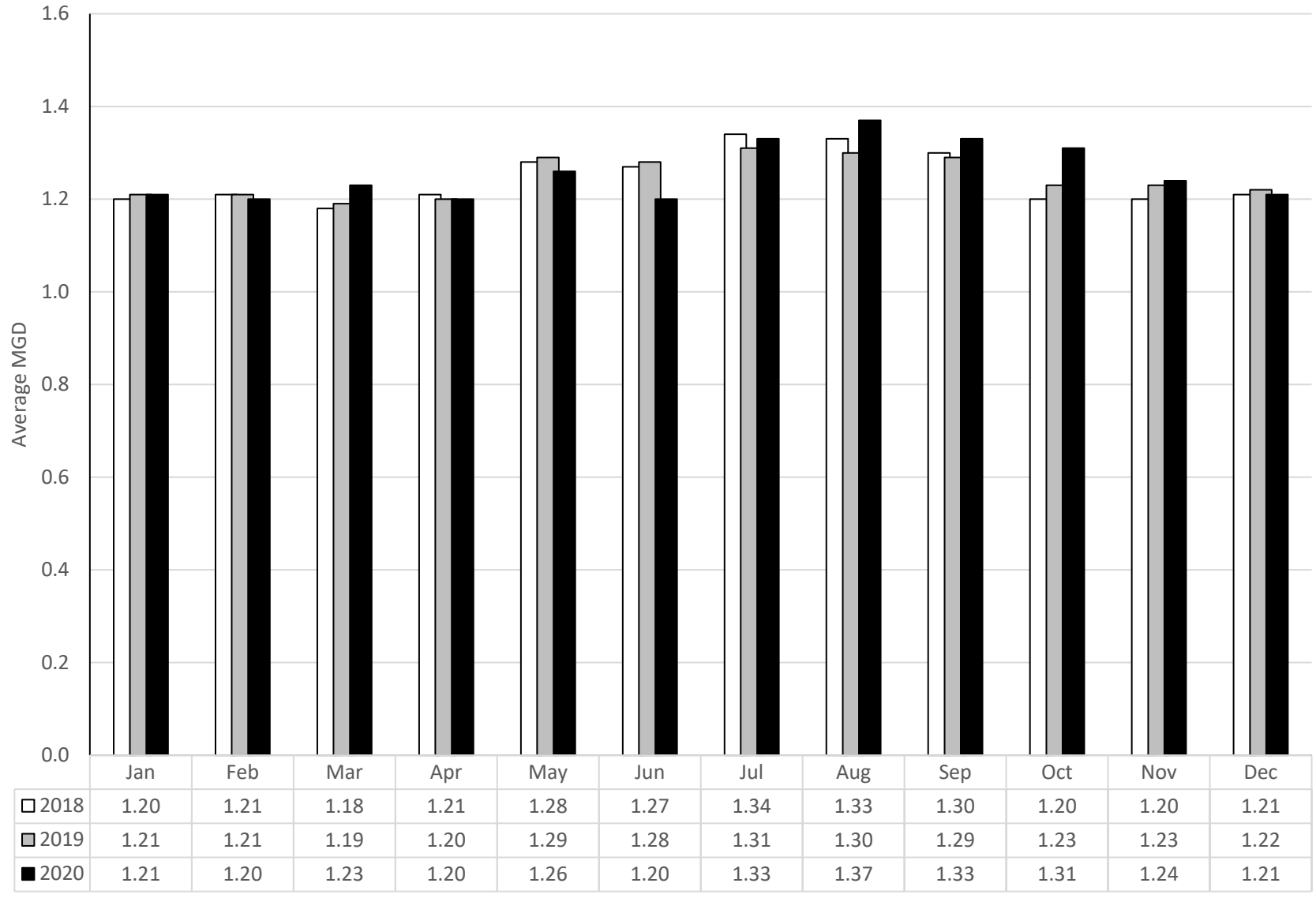


# City of Henderson Wastewater Flows

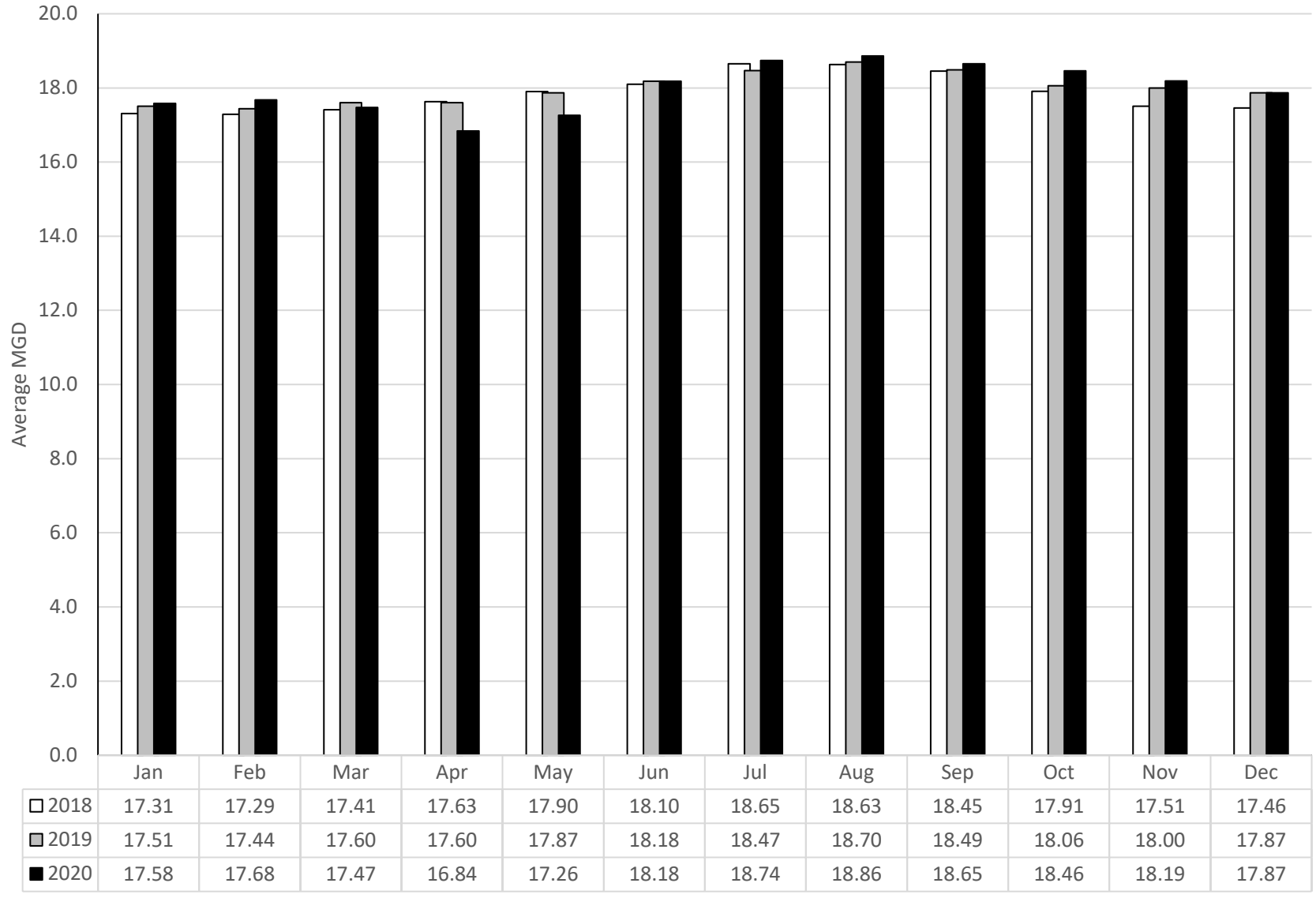


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	24.05	24.93	25.29	24.74	24.65	24.69	24.80	24.75	24.46	23.47	24.73	23.23
2019	25.24	24.83	24.52	23.62	23.72	23.27	23.67	24.01	23.70	23.65	25.93	25.23
2020	24.98	24.77	23.88	23.96	24.65	24.51	25.00	25.40	25.03	24.89	24.10	24.21

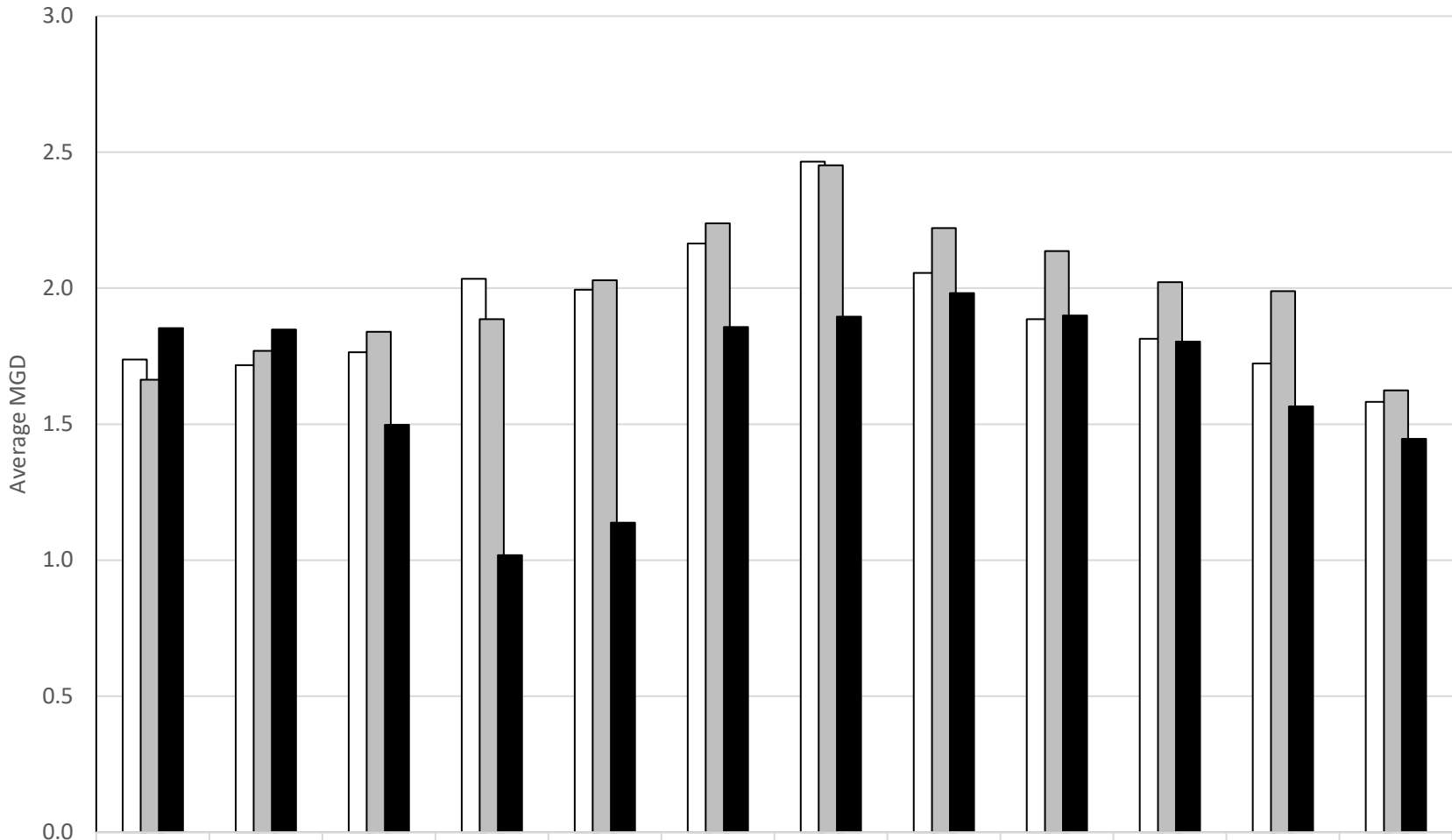
# Boulder City Wastewater Flows



# City of North Las Vegas Wastewater Flows

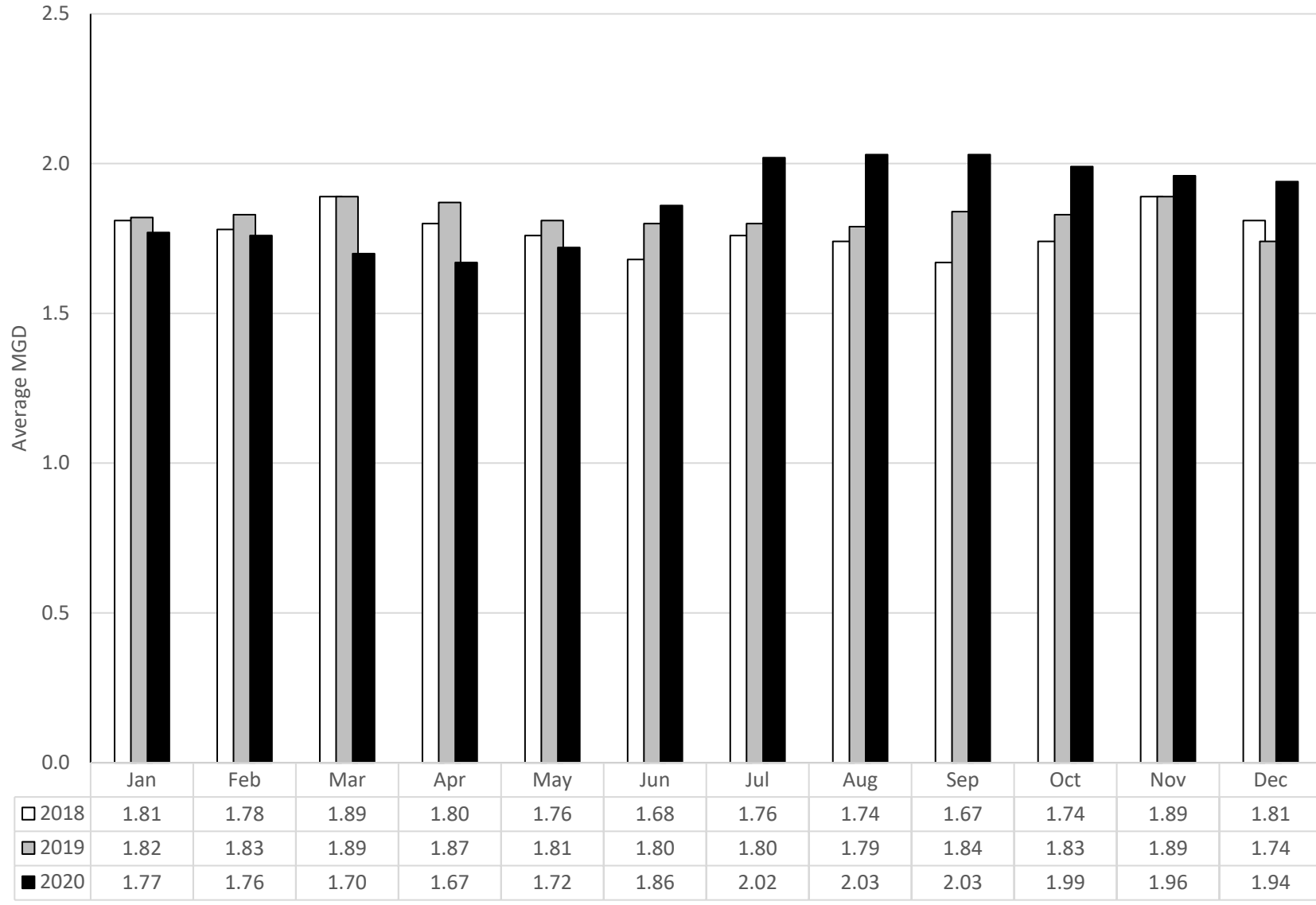


# Laughlin Wastewater Flows

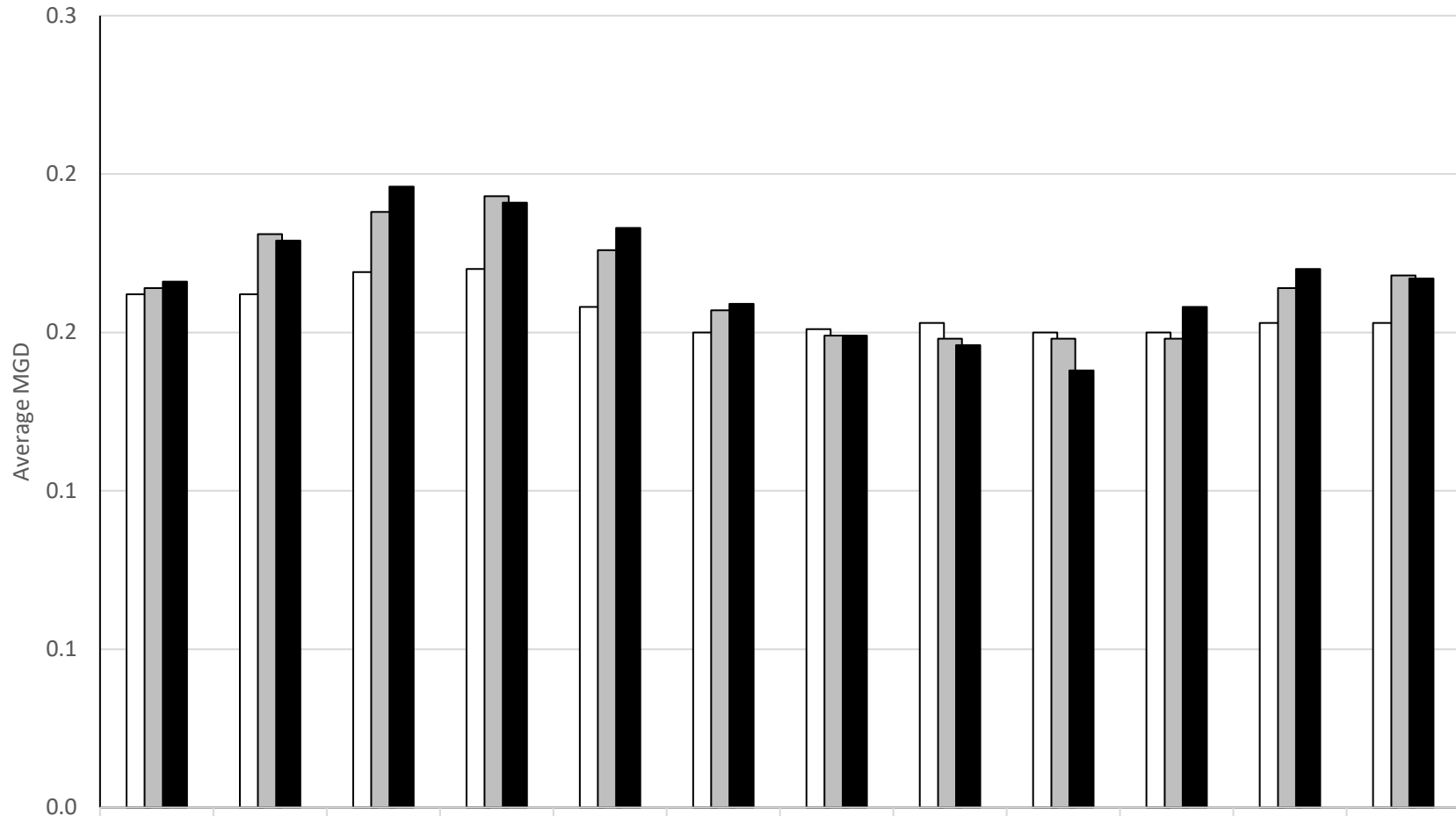


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2018	1.74	1.72	1.76	2.03	1.99	2.16	2.47	2.06	1.89	1.81	1.72	1.58
■ 2019	1.66	1.77	1.84	1.89	2.03	2.24	2.45	2.22	2.14	2.02	1.99	1.62
■ 2020	1.85	1.85	1.50	1.02	1.14	1.86	1.90	1.98	1.90	1.80	1.57	1.45

# City of Mesquite Wastewater Flows



# Moapa Wastewater Flows

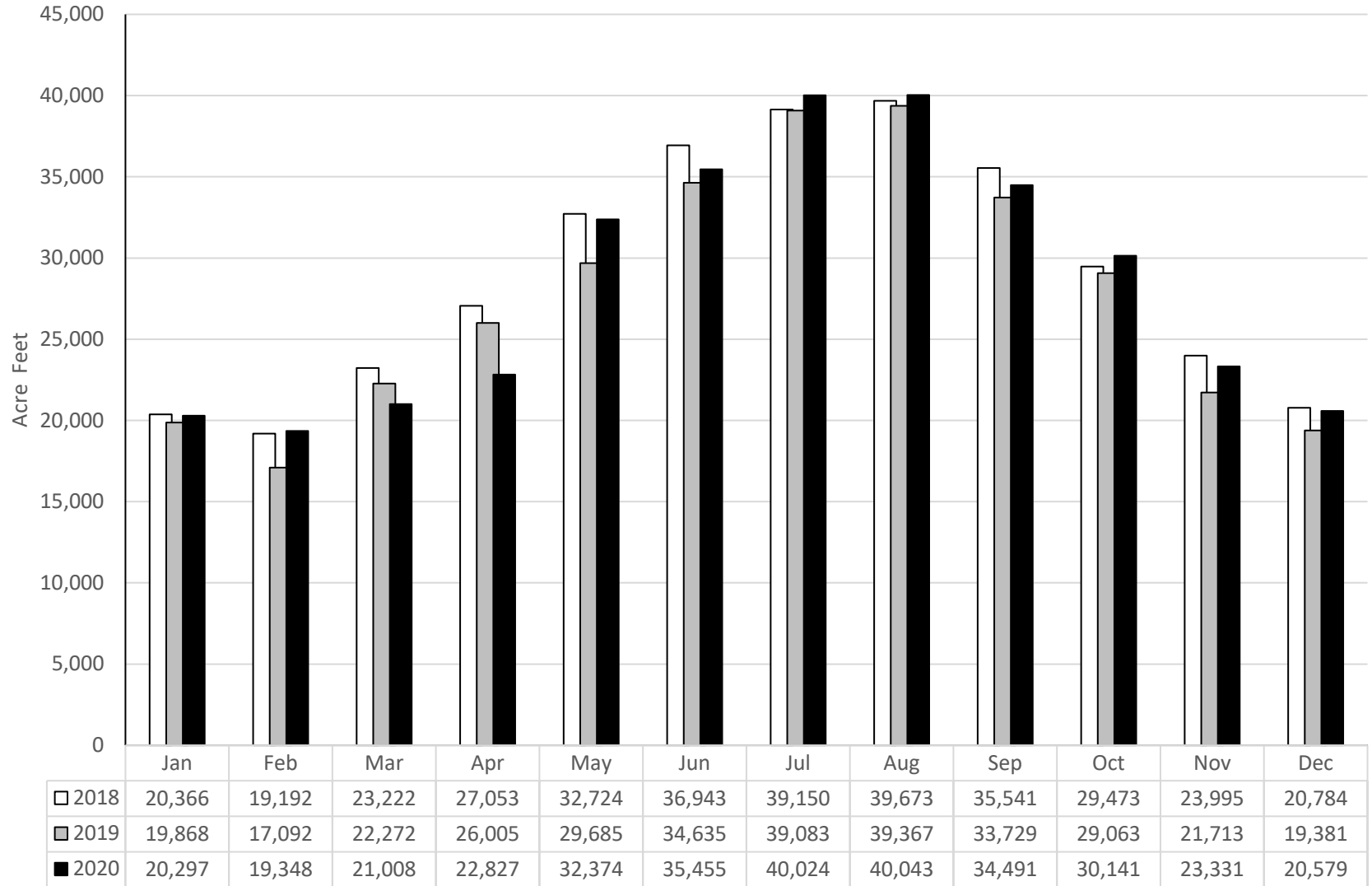


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	0.162	0.162	0.169	0.170	0.158	0.150	0.151	0.153	0.150	0.150	0.153	0.153
2019	0.164	0.181	0.188	0.193	0.176	0.157	0.149	0.148	0.148	0.148	0.164	0.168
2020	0.166	0.179	0.196	0.191	0.183	0.159	0.149	0.146	0.138	0.158	0.170	0.167

# Water Production

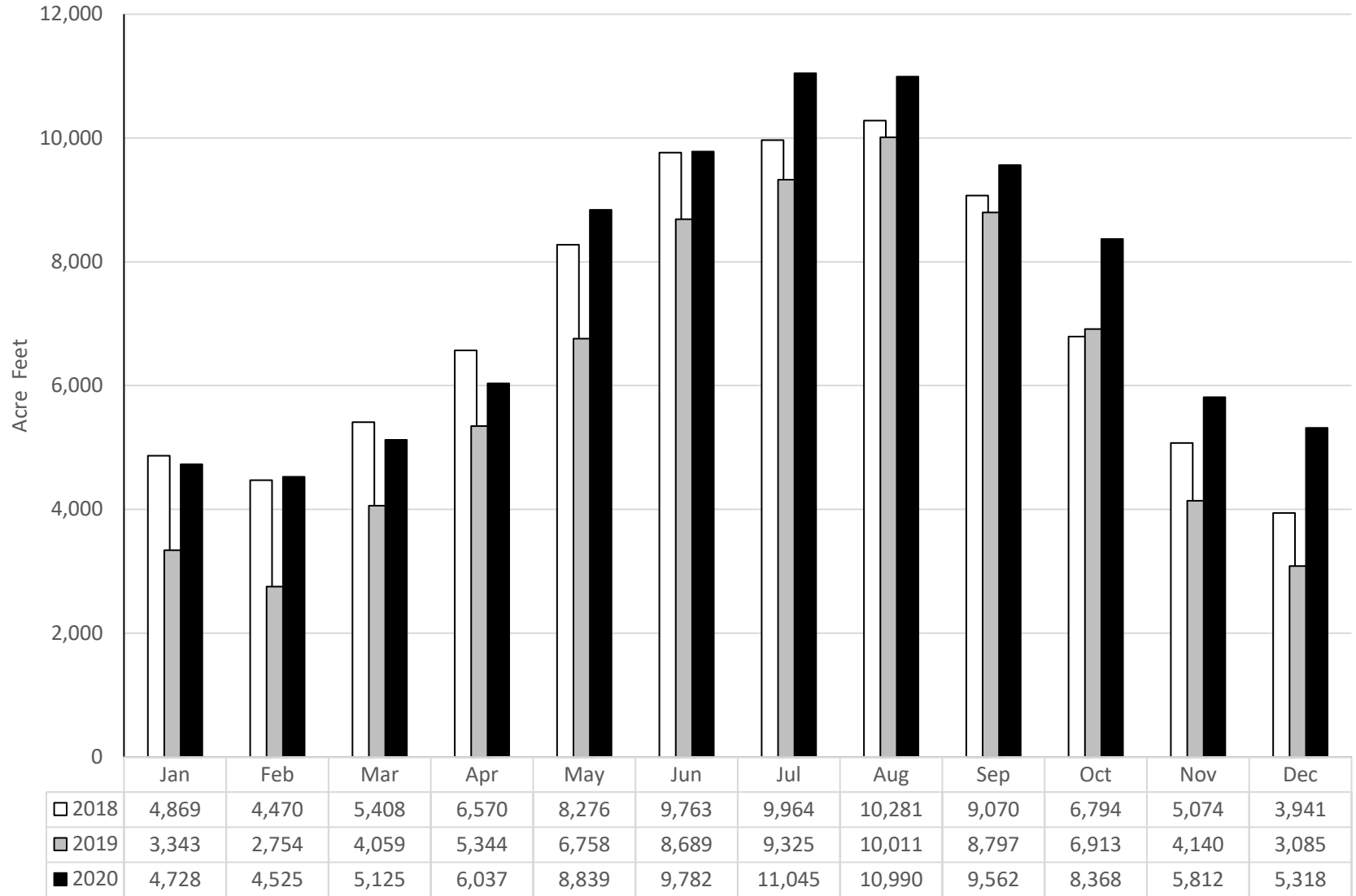
2018 through 2020

# Las Vegas Valley Water District Water Production

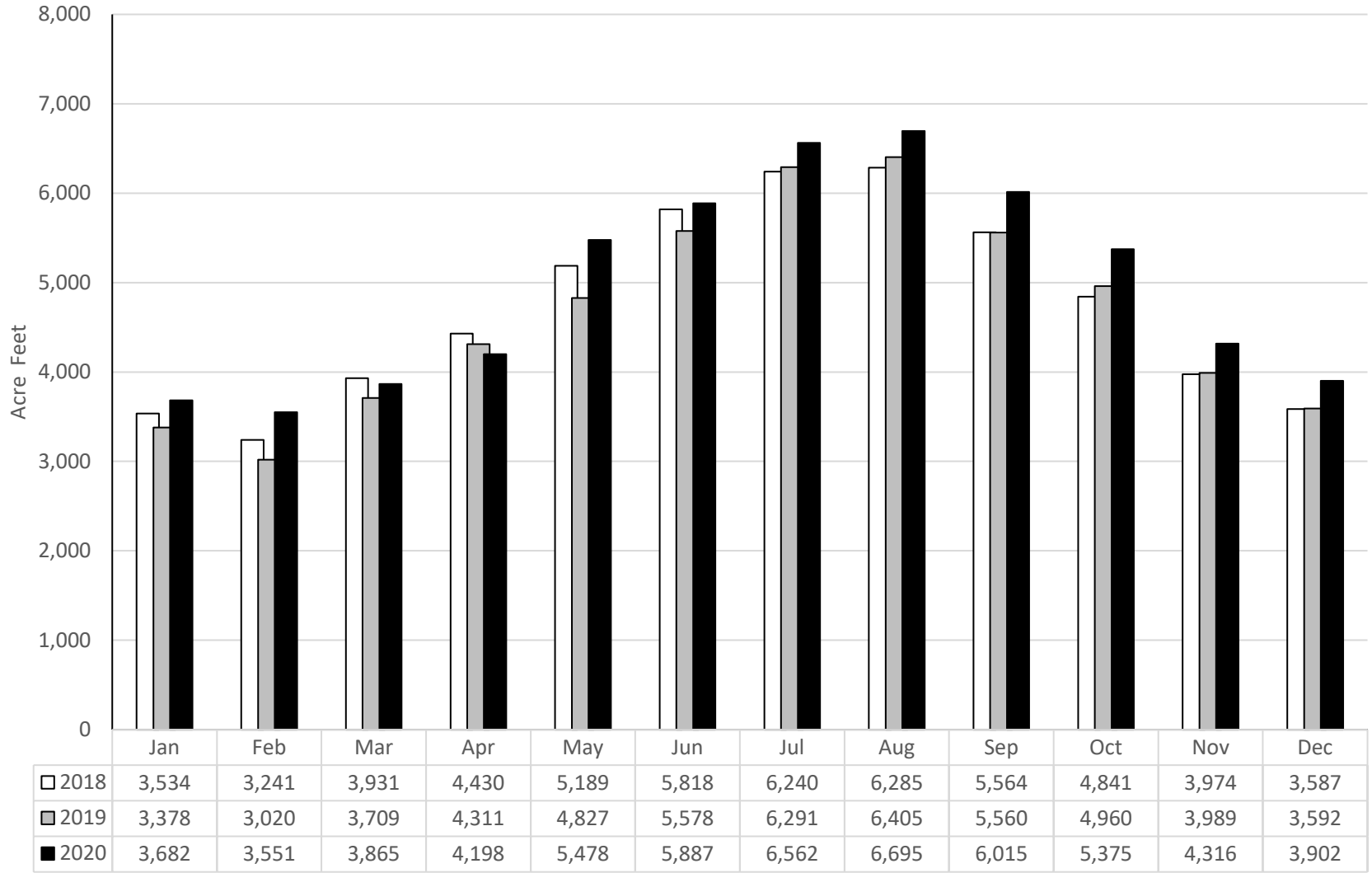




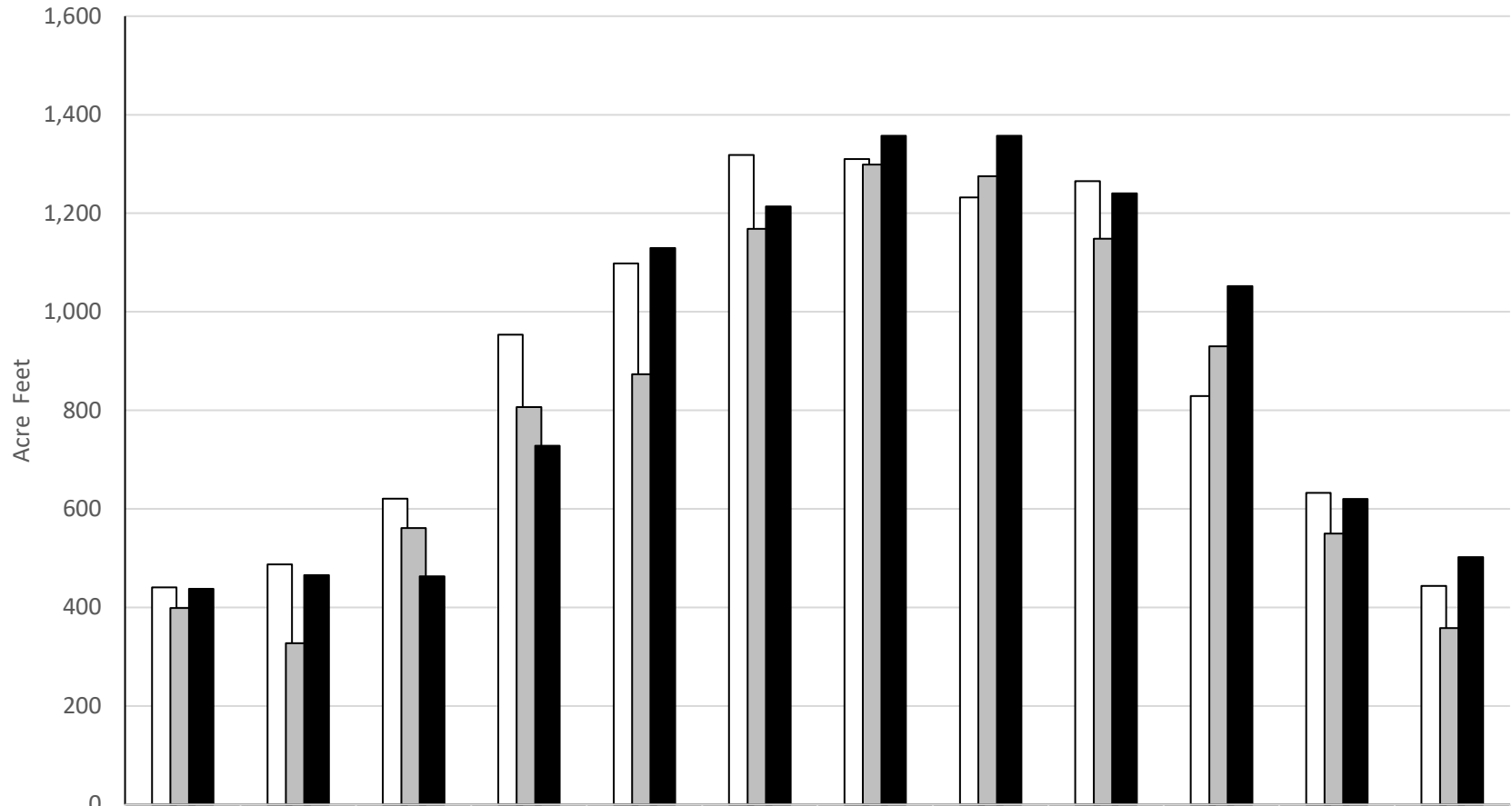
# City of Henderson Water Production



# City of North Las Vegas Water Production

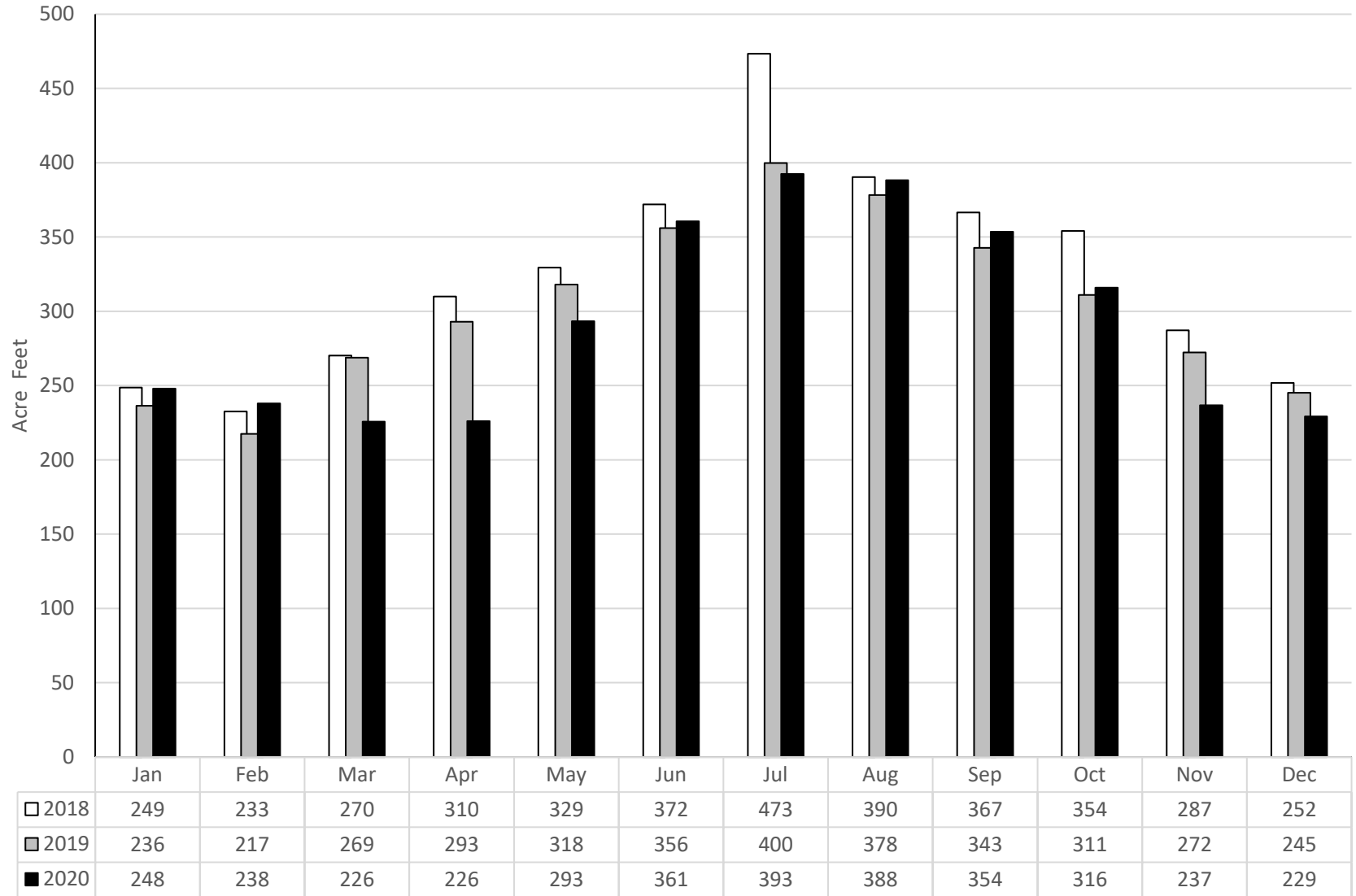


# Boulder City Water Production

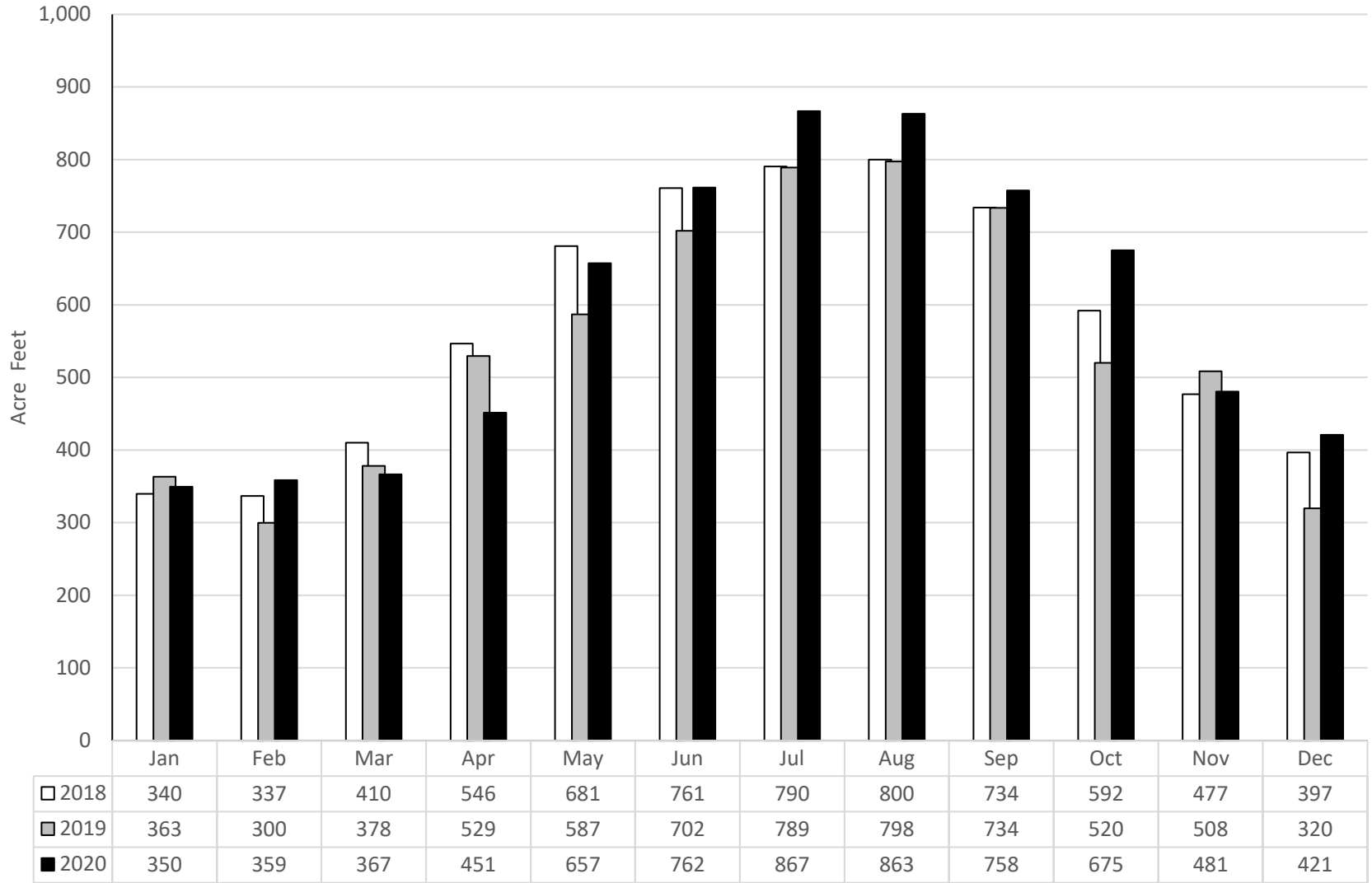


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2018	441	487	621	954	1,098	1,318	1,310	1,232	1,265	829	633	444
■ 2019	399	327	561	807	874	1,168	1,299	1,275	1,149	930	550	358
■ 2020	438	466	463	728	1,129	1,214	1,357	1,357	1,240	1,052	620	502

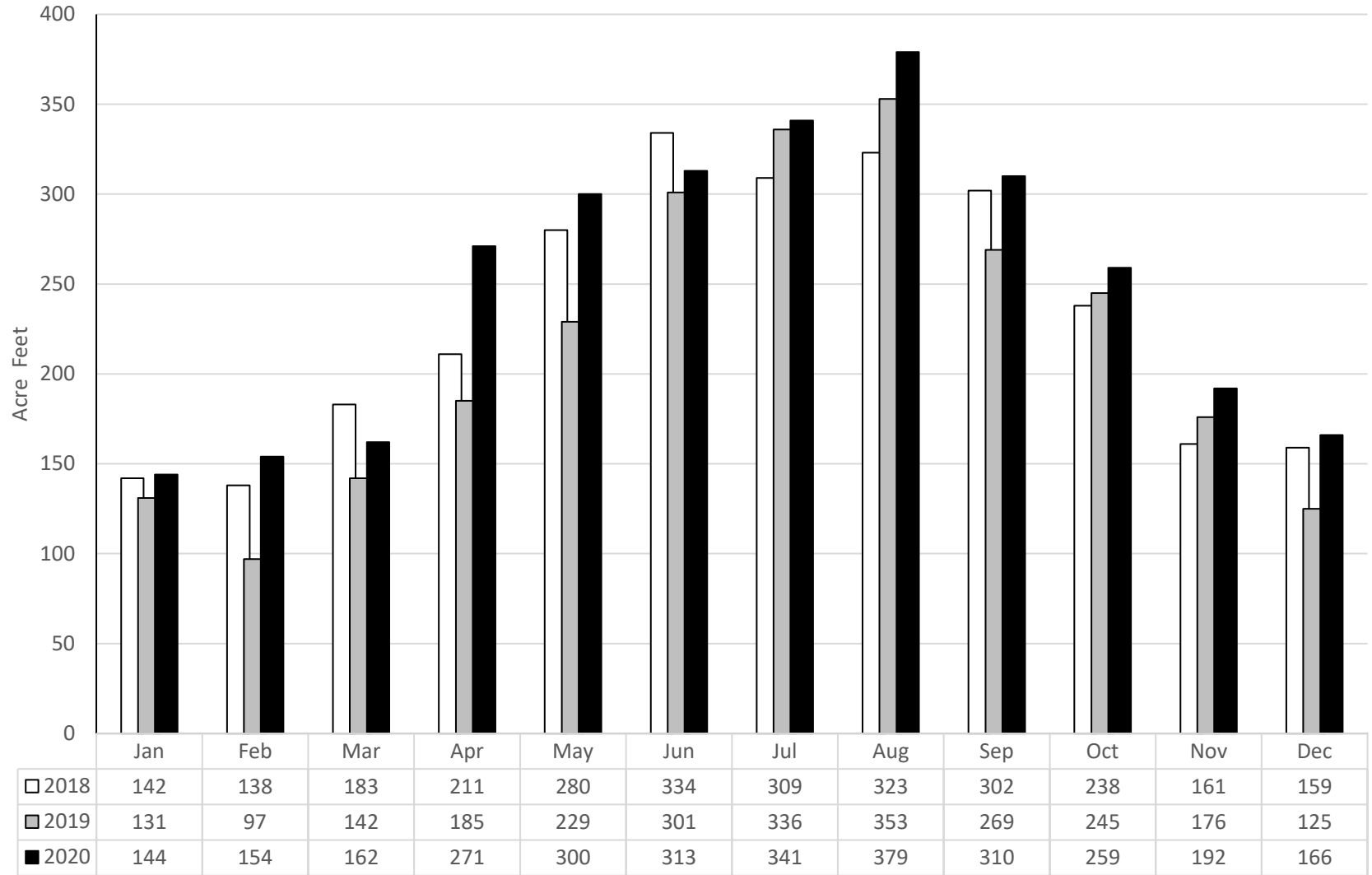
# Big Bend Water District Water Production



# Virgin Valley Water District Water Production



# Moapa Valley Water District Water Production



# Historic Trends Influent Wastewater Flows

(Avg. in MGD)

Month	Clark County Water Reclamation District *			City of Las Vegas			City of North Las Vegas			City of Henderson			Boulder City		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	102.35	102.48	104.74	47.85	43.54	41.67	17.31	17.51	17.58	24.05	25.24	24.98	1.20	1.21	1.21
Feb	101.52	101.90	104.72	46.98	43.56	41.68	17.29	17.44	17.68	24.93	24.83	24.77	1.21	1.21	1.20
Mar	102.61	104.00	98.35	47.35	43.27	41.67	17.41	17.60	17.47	25.29	24.52	23.88	1.18	1.19	1.23
Apr	104.73	105.63	89.42	44.69	44.01	40.09	17.63	17.60	16.84	24.74	23.62	23.96	1.21	1.20	1.20
May	106.20	106.42	92.00	43.85	43.74	41.13	17.90	17.87	17.26	24.65	23.72	24.65	1.28	1.29	1.26
Jun	106.72	107.84	98.74	44.23	43.17	43.20	18.10	18.18	18.18	24.69	23.27	24.51	1.27	1.28	1.20
Jul	111.17	109.74	102.12	44.86	42.02	43.52	18.65	18.47	18.74	24.80	23.67	25.00	1.34	1.31	1.33
Aug	113.39	109.74	103.15	45.70	42.27	43.41	18.63	18.70	18.86	24.75	24.01	25.40	1.33	1.30	1.37
Sep	110.11	108.48	102.59	45.82	42.15	43.28	18.45	18.49	18.65	24.46	23.70	25.03	1.30	1.29	1.33
Oct	107.70	105.63	101.73	43.57	41.87	42.73	17.91	18.06	18.46	23.47	23.65	24.89	1.20	1.23	1.31
Nov	102.86	105.45	99.13	43.08	41.85	42.99	17.51	18.00	18.19	24.73	25.93	24.10	1.20	1.23	1.24
Dec	101.31	104.93	96.37	42.18	41.86	42.52	17.46	17.87	17.87	23.23	25.23	24.21	1.21	1.22	1.21
ANNUAL	105.89	106.02	99.42	45.02	42.78	42.32	17.86	17.98	17.98	24.23	24.48	24.62	1.16	1.24	1.26

\* Includes estimated .5 MGD NLV

# Historic Trends Influent Wastewater Flows

	Searchlight			Blue Diamond			MVWRC			Laughlin			Mesquite			Indian Springs		
Month	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	0.038	0.046	0.033	0.016	0.014	0.018	0.162	0.164	0.166	1.74	1.66	1.85	1.81	1.82	1.77	0.095	0.106	0.121
Feb	0.036	0.048	0.041	0.021	0.009	0.016	0.162	0.181	0.179	1.72	1.77	1.85	1.78	1.83	1.76	0.108	0.112	0.118
Mar	0.039	0.042	0.030	0.010	0.009	0.019	0.169	0.188	0.196	1.76	1.84	1.50	1.89	1.89	1.70	0.103	0.101	0.113
Apr	0.039	0.041	0.026	0.011	0.008	0.015	0.170	0.193	0.191	2.03	1.89	1.02	1.80	1.87	1.67	0.123	0.112	0.108
May	0.039	0.045	0.030	0.016	0.008	0.023	0.158	0.176	0.183	1.99	2.03	1.14	1.76	1.81	1.72	0.109	0.114	0.125
Jun	0.037	0.032	0.032	0.009	0.005	0.015	0.150	0.157	0.159	2.16	2.24	1.86	1.68	1.80	1.86	0.108	0.121	0.121
Jul	0.043	0.039	0.034	0.011	0.014	0.018	0.151	0.149	0.149	2.47	2.45	1.90	1.76	1.80	2.02	0.118	0.117	0.117
Aug	0.040	0.037	0.034	0.015	0.017	0.016	0.153	0.148	0.146	2.06	2.22	1.98	1.74	1.79	2.03	0.110	0.120	0.115
Sep	0.038	0.039	0.033	0.013	0.022	0.017	0.150	0.148	0.138	1.89	2.14	1.90	1.67	1.84	2.03	0.107	0.119	0.109
Oct	0.042	0.031	0.029	0.014	0.020	0.018	0.150	0.148	0.016	1.81	2.02	1.80	1.74	1.83	1.99	0.108	0.127	0.111
Nov	0.047	0.035	0.028	0.016	0.017	0.015	0.153	0.164	0.170	1.72	1.99	1.57	1.89	1.89	1.96	0.103	0.120	0.096
Dec	0.043	0.034	0.028	0.011	0.017	0.018	0.153	0.168	0.167	1.58	1.62	1.45	1.81	1.74	1.94	0.101	0.114	0.101
ANNUAL	0.041	0.039	0.032	0.011	0.013	0.017	0.162	0.165	0.155	2.10	1.99	1.65	1.77	1.75	1.87	0.100	0.103	0.113



# Non-Discharging Facilities

Boulder City				
(Avg. in MGD)			(Total in MG)	
Month	Influent Flow	Reuse	Influent Flow	Reuse
Jan	1.21	0.26	37.50	8.06
Feb	1.20	0.31	33.60	8.68
Mar	1.23	0.31	38.10	9.61
Apr	1.20	0.30	36.00	9.00
May	1.26	0.42	39.10	13.00
Jun	1.20	0.30	36.00	9.00
Jul	1.33	0.54	41.50	16.70
Aug	1.37	0.52	42.50	16.10
Sep	1.33	0.36	39.90	10.80
Oct	1.31	0.43	40.60	13.30
Nov	1.24	0.28	37.20	8.40
Dec	1.21	0.28	37.50	8.68
Annual	1.26	0.36	459.50	131.33

## Las Vegas Wash and Colorado River Dischargers (2020)

Month	Clark County Water Reclamation District* (Avg. in MGD)					City of Las Vegas (Avg. in MGD)						City of Henderson (Avg. in MGD)			City of North Las Vegas (Avg. in MGD)		
	Influent Flow	Main Plant Reuse	DBWRC Reuse	Total Reuse	Net to LV Wash	Influent Flow	WPCF Reuse	BMWRC Reuse	DHWRC Reuse	Total Reuse	Net to LV Wash	Influent Flow	Reuse	Net to LV Wash	Influent Flow	Reuse	Net to LV Wash
Jan	104.74	5.70	0.00	5.70	99.05	41.67	0.35	0.00	0.00	0.35	41.32	24.98	4.69	19.09	17.58	0.00	17.58
Feb	104.72	5.54	0.00	5.54	99.18	41.68	0.49	0.00	0.00	0.49	41.19	24.77	4.27	18.92	17.68	0.00	17.68
Mar	98.35	6.13	0.00	6.13	92.22	41.67	0.45	0.00	0.00	0.45	41.22	23.88	3.84	19.02	17.47	0.00	17.47
Apr	89.42	6.60	0.00	6.60	82.82	40.09	1.37	0.00	0.00	1.37	38.72	23.96	6.97	16.12	16.84	0.00	16.84
May	92.00	7.33	0.00	7.33	84.67	41.13	1.89	0.00	0.00	1.89	39.24	24.65	8.42	14.83	17.26	0.00	17.26
Jun	98.74	7.50	0.00	7.50	91.24	43.20	2.06	0.00	0.00	2.06	41.14	24.51	8.93	14.45	18.18	0.00	18.18
Jul	102.12	10.19	0.00	10.19	91.93	43.52	2.32	0.00	0.00	2.32	41.20	25.00	9.55	14.14	18.74	0.00	18.74
Aug	103.15	10.29	0.00	10.29	92.86	43.41	1.86	0.00	0.00	1.86	41.55	25.40	9.40	14.25	18.86	0.00	18.86
Sep	102.59	9.66	0.00	9.66	92.93	43.28	1.77	0.00	0.00	1.77	41.51	25.03	8.76	15.23	18.65	0.00	18.65
Oct	101.73	7.36	0.00	7.36	94.37	42.73	1.49	0.00	0.00	1.49	41.24	24.89	7.90	16.06	18.46	0.00	18.46
Nov	99.13	7.05	0.00	7.05	92.08	42.99	0.62	0.00	0.00	0.62	42.37	24.10	5.74	17.73	18.19	0.00	18.19
Dec	96.37	8.02	0.00	8.02	88.35	42.52	0.40	0.00	0.00	0.40	42.12	24.21	4.92	17.74	17.87	0.00	17.87
<b>YTD</b>	<b>99.42</b>	<b>7.61</b>	<b>0.00</b>	<b>7.61</b>	<b>91.81</b>	<b>42.32</b>	<b>1.26</b>	<b>0.00</b>	<b>0.00</b>	<b>1.26</b>	<b>41.07</b>	<b>24.62</b>	<b>6.95</b>	<b>16.47</b>	<b>17.98</b>	<b>0.00</b>	<b>17.98</b>

## Las Vegas Wash and Colorado River Dischargers (2020)

Month	Las Vegas Wash Discharge (Avg in MGD)			Discharge Directly to Colorado River (Avg in MGD)			Total Discharge (Totals in A/F)
	Influent Flow	Reuse	Net to LV Wash	Laughlin Influent Flow	Laughlin Reuse	Net to River	Effluent Flow
Jan	188.97	10.74	177.03	1.85	0.00	1.85	17,018
Feb	188.85	10.30	176.97	1.85	0.00	1.85	15,915
Mar	181.37	10.42	169.93	1.50	0.00	1.50	15,256
Apr	170.31	14.94	153.22	1.02	0.00	1.02	13,726
May	175.04	17.64	155.63	1.14	0.00	1.14	13,951.55
Jun	184.63	18.49	164.70	1.86	0.00	1.86	14,822.84
Jul	189.38	21.91	166.01	1.90	0.00	1.90	14,943.08
Aug	190.82	20.91	167.52	1.98	0.00	1.98	15,085.47
Sep	189.55	19.32	168.33	1.90	0.00	1.90	15,149.64
Oct	187.81	14.59	170.13	1.80	0.00	1.80	15,301.74
Nov	184.41	12.59	170.37	1.57	0.00	1.57	15,302.09
Dec	180.97	0.00	166.08	1.45	0.00	1.45	14,909.70
<b>YTD</b>	2212.11	171.84	2005.91	19.80	0.00	19.80	181381.91

# Water Production (2020)

(Totals in AF)

	Las Vegas Valley Water District			City of Henderson			City of North Las Vegas			Boulder City			Nellis Air Force Base			Totals	
Month	WELLS	SNWS	TOTAL	SNWS	BMI	TOTAL	WELLS	SNWS	TOTAL	RMTP	SNWS	TOTAL	WELL	SNWS	TOTAL	WELLS	SNWS
Jan	0	20,297	20,297	3,228	1,500	4,728	11	3,671	3,682	126	312	438	11	68	79	22	27,701
Feb	0	19,348	19,348	3,116	1,409	4,525	98	3,453	3,551	156	310	466	12	70	82	110	26,453
Mar	105	20,903	21,008	3,628	1,497	5,125	106	3,759	3,865	130	333	463	12	65	77	224	28,818
Apr	387	22,440	22,827	4,659	1,379	6,037	104	4,094	4,198	245	483	728	76	62	138	567	31,982
May	713	31,661	32,374	7,203	1,637	8,839	107	5,370	5,478	402	727	1,129	109	83	192	929	45,446
Jun	5,225	30,230	35,455	8,068	1,714	9,782	100	5,787	5,887	433	781	1,214	107	88	195	5,432	45,387
Jul	5,282	34,742	40,024	9,276	1,769	11,045	106	6,456	6,562	482	875	1,357	106	106	212	5,495	51,937
Aug	5,571	34,472	40,043	9,416	1,574	10,990	71	6,624	6,695	484	873	1,357	93	114	207	5,735	51,983
Sep	6,301	28,190	34,491	8,201	1,361	9,562	0	6,015	6,015	464	777	1,240	76	108	184	6,377	43,754
Oct	6,243	23,898	30,141	7,132	1,236	8,368	0	5,375	5,375	392	660	1,052	58	92	150	6,301	37,549
Nov	5,808	17,523	23,331	5,279	533	5,812	0	4,316	4,316	171	449	620	21	76	97	5,829	27,814
Dec	5,006	15,573	20,579	4,849	469	5,318	0	3,902	3,902	133	369	502	19	59	78	5,025	24,886
YTD	40,641	299,277	339,918	74,054	16,078	90,131	705	58,821	59,525	3,617	6,950	10,567	700	992	1,692	42,046	443,709

# Historic Trends Water Production

(Totals in AF)

Month	Las Vegas Valley Water District			City of Henderson			City of North Las Vegas			Boulder City			Big Bend Water District			Virgin Valley Water District			Moapa Valley Water District		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	20,366	19,868	20,297	4,869	3,343	4,728	3,534	3,378	3,682	441	399	438	249	236	248	340	363	350	142	131	144
Feb	19,192	17,092	19,348	4,470	2,754	4,525	3,241	3,020	3,551	487	327	466	233	217	238	337	300	359	138	97	154
Mar	23,222	22,272	21,008	5,408	4,059	5,125	3,931	3,709	3,865	621	561	463	270	269	226	410	378	367	183	142	162
Apr	27,053	26,005	22,827	6,570	5,344	6,037	4,430	4,311	4,198	954	807	728	310	293	226	546	529	451	211	185	271
May	32,724	29,685	32,374	8,276	6,758	8,839	5,189	4,827	5,478	1,098	874	1,129	329	318	293	681	587	657	280	229	300
Jun	36,943	34,635	35,455	9,763	8,689	9,782	5,818	5,578	5,887	1,318	1,168	1,214	372	356	361	761	702	762	334	301	313
Jul	39,150	39,083	40,024	9,964	9,325	11,045	6,240	6,291	6,562	1,310	1,299	1,357	473	400	393	790	789	867	309	336	341
Aug	39,673	39,367	40,043	10,281	10,011	10,990	6,285	6,405	6,695	1,232	1,275	1,357	390	378	388	800	798	863	323	353	379
Sep	35,541	33,729	34,491	9,070	8,797	9,562	5,564	5,560	6,015	1,265	1,149	1,240	367	343	354	734	734	758	302	269	310
Oct	29,473	29,063	30,141	6,794	6,913	8,368	4,841	4,960	5,375	829	930	1,052	354	311	316	592	520	675	238	245	259
Nov	23,995	21,713	23,331	5,074	4,140	5,812	3,974	3,989	4,316	633	550	620	287	272	237	477	508	481	161	176	192
Dec	20,784	19,381	20,579	3,941	3,085	5,318	3,587	3,592	3,902	444	358	502	252	245	229	397	320	421	159	125	166
<b>ANNUAL</b>	<b>343,312</b>	<b>331,890</b>	<b>339,918</b>	<b>84,107</b>	<b>73,217</b>	<b>90,131</b>	<b>54,481</b>	<b>55,618</b>	<b>59,525</b>	<b>10,650</b>	<b>9,697</b>	<b>10,567</b>	<b>4,043</b>	<b>3,639</b>	<b>3,508</b>	<b>6,535</b>	<b>6,528</b>	<b>7,009</b>	<b>2,892</b>	<b>2,940</b>	<b>2,991</b>

# Wastewater/Water Production Ratios

\*Calc. as combined CLV and CCWRDwastewater / LVVWD Production

\*\*Calc. as the sum of all entities wastewater / the sum of all entities production

Month	City of Las Vegas/Clark County*			City of Henderson			City of North Las Vegas			Boulder City			Big Bend Water District			All Entities **		
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	0.74	0.70	0.69	0.59	0.72	0.50	0.52	0.49	0.45	0.30	0.29	0.26	0.85	0.67	0.71	0.69	0.67	0.62
Feb	0.70	0.73	0.65	0.56	0.77	0.47	0.49	0.50	0.43	0.24	0.32	0.22	0.85	0.70	0.67	0.64	0.70	0.59
Mar	0.60	0.63	0.63	0.45	0.57	0.44	0.43	0.45	0.43	0.18	0.20	0.25	0.77	0.65	0.63	0.55	0.59	0.57
Apr	0.51	0.53	0.52	0.36	0.41	0.37	0.38	0.38	0.37	0.13	0.14	0.15	0.72	0.59	0.41	0.46	0.49	0.47
May	0.47	0.48	0.39	0.33	0.33	0.27	0.34	0.35	0.30	0.12	0.14	0.11	0.63	0.61	0.37	0.43	0.44	0.35
Jun	0.39	0.40	0.37	0.26	0.25	0.23	0.29	0.30	0.28	0.10	0.10	0.09	0.55	0.58	0.47	0.35	0.36	0.33
Jul	0.38	0.37	0.35	0.25	0.24	0.22	0.28	0.28	0.27	0.09	0.10	0.09	0.51	0.58	0.46	0.34	0.33	0.31
Aug	0.39	0.37	0.35	0.27	0.23	0.22	0.28	0.28	0.27	0.10	0.10	0.10	0.53	0.56	0.49	0.35	0.33	0.31
Sep	0.42	0.41	0.39	0.29	0.25	0.24	0.31	0.31	0.29	0.11	0.10	0.10	0.51	0.57	0.49	0.38	0.36	0.34
Oct	0.52	0.48	0.46	0.36	0.33	0.28	0.37	0.35	0.33	0.16	0.13	0.12	0.51	0.62	0.54	0.47	0.43	0.40
Nov	0.61	0.62	0.56	0.48	0.58	0.38	0.44	0.42	0.39	0.23	0.21	0.18	0.63	0.67	0.61	0.57	0.58	0.50
Dec	0.70	0.72	0.64	0.57	0.78	0.43	0.47	0.47	0.44	0.25	0.32	0.23	0.66	0.63	0.60	0.64	0.69	0.57
AVG.	0.50	0.50	0.47	0.36	0.37	0.31	0.36	0.36	0.34	0.14	0.14	0.13	0.64	0.62	0.54	0.46	0.46	0.42

# Water Production and Water Flows

Monthly flows in AF

Month	CLV and Clark County Monthly Flow in AF		City of Henderson Monthly Flow in AF		City of North Las Vegas Monthly Flow in AF		Boulder City Monthly Flow in AF		Big Bend Water District Monthly Flow in AF		All Entities Monthly Flow in AF	
	Water Production	Waste Flow	Water Production	Waste Flow	Water Production	Waste Flow	Water Production	Waste Flow	Water Production	Waste Flow	Water Production	Waste Flow
Jan	20,297	13,929	4,728	2,376	3,682	1,672	438	115	248	176	29,392	18,269
Feb	19,348	12,580	4,525	2,128	3,551	1,519	466	103	238	159	28,128	16,490
Mar	21,008	13,321	5,125	2,272	3,865	1,662	463	117	226	142	30,687	17,514
Apr	22,827	11,924	6,037	2,206	4,198	1,550	728	110	226	94	34,016	15,884
May	32,374	12,665	8,839	2,345	5,478	1,642	1,129	120	293	108	48,114	16,881
Jun	35,455	13,068	9,782	2,257	5,887	1,674	1,214	110	361	171	52,698	17,280
Jul	40,024	13,856	11,045	2,378	6,562	1,783	1,357	127	393	180	59,381	18,324
Aug	40,043	13,943	10,990	2,416	6,695	1,794	1,357	130	388	189	59,473	18,473
Sep	34,491	13,430	9,562	2,304	6,015	1,717	1,240	122	354	175	51,661	17,749
Oct	30,141	13,743	8,368	2,368	5,375	1,756	1,052	125	316	172	45,252	18,164
Nov	23,331	13,085	5,812	2,219	4,316	1,675	620	114	237	144	34,316	17,236
Dec	20,579	13,213	5,318	2,303	3,902	1,700	502	115	229	138	30,531	17,469
YTD	339,918	158,756	90,131	27,574	59,525	20,145	10,567	1,410	3,508	1,847	503,649	209,732

# Recharge and Recovery

Monthly Flows in AF

\*Data provided by SNWA

Month	Recharged			Recovered			
	LVVWD	NLV	Total	LVVWD	LV Paiute	NLV	Total
Jan	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0
Sep	0	0	0	222	0	0	0
Oct	0	0	0	230	0	0	0
Nov	0	0	0	154	0	0	0
Dec	0	0	0	66	0	0	0
Total 2020	0	0	0	672	0	0	0
Total 2019	0	0	0	0	0	0	0
Total 2018	0	0	0	0	408	0	408