

**SEWAGE AND WASTEWATER ADVISORY COMMITTEE**

**Clark County Water Reclamation District**  
**5857 E Flamingo Rd, Las Vegas, Nevada 89122**  
**Advisory to the Board of Clark County Commissioners**  
**Meeting Minutes of February 5, 2020**

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	
Brian Oswald (Member)	X	
Charles Trushel (Alternate)	X	
Dan Combs (Alternate)		X
VACANT (Alternate)		
<b>City of Henderson (2 Members)</b>		
Adrian Edwards (Member)	X	
Howard Analla (Member) VICE-CHAIR		X
Kyle Okamura (Alternate)		X
Lance Lompfrey (Alternate)		X
<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

Isler, Dan

CCWRD

SNHD

### **1. 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 9:05 a.m. It was confirmed that the meeting was properly noticed and posted in accordance with the Open Meeting Law.

### **2. COMMENTS BY THE GENERAL PUBLIC - None**

### **3. APPROVAL OF THE MINUTES OF THE MEETING OF NOVEMBER 13, 2019**

Brian Oswalt moved and John Bettencourt seconded to accept the November 13, 2019 minutes. The motion was unanimously approved.

### **4. APPROVAL OF AGENDA AFTER ADDING EMERGENCY ITEMS/DELETING ITEMS**

Item (5) - *Open Meeting Law Discussion* was removed from the agenda because the Clark County District Attorney was not available to attend. Replaced item (5) with a septic regulation update from SNHD. John Solvie moved to approve the amended agenda and Dennis Porter seconded. The motion was unanimously approved.

### **5. SOUTHERN NEVADA HEALTH DISTRICT SEPTIC REGULATIONS UPDATE**

SNHD is in the process of updating septic regulations for Clark County. Dan Isler of SNHD provided a general overview of areas they are focusing on. SNHD is soliciting input from Southern Nevada agencies before it goes out for public comment. Dan Isler will email the proposed regulations to Dan Fischer, who will distribute it to SWAC members for review. Review comments are due by the end of February.

### **6. DISCUSSION AND DISTRIBUTION OF QUARTERLY FLOW REPORTS**

The group discussed the flow report for the fourth quarter of 2019:

- Reuse flows trended downward in 2019, due to the closure of CCWRD's Desert Breeze Plant and the closure of City of Las Vegas's Durango Hills Water Resource Center.

### **7. MEMBER UPDATES**

#### **A. Moapa Valley Water District**

- Nothing to report.

#### **B. Las Vegas Valley Water District**

- Pumping plant for drinking water 3 intake is nearing completion. Due to the 15 ft increase in Lake Mead water levels, there are no plans to utilize it in the immediate future.
- Capital planning is underway.
- LVVWD is focusing efforts on conservation projects to increase return flow credits by capturing water & returning it to Lake Mead. Discussions are underway to evaluate the feasibility of a new concept of single-pass cooling tower water use.

#### **C. Boulder City**

- Entering the final stages of an on-going water, power and sewer study. The project is expected to be completed within the year.

- Replacing aging electric infrastructure, which has not been updated since the Dam was constructed.
- Assessing the condition of power poles throughout the community. Damaged poles will be replaced.
- An internal study of power and sewer conditions is underway.
- Working with SNWA to route effluent water to City of Henderson to divert the water back to the Lake and contribute to return flow credits.

#### **D. Virgin Valley Water District**

- N/A

#### **E. City of Mesquite**

- N/A

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

- Construction project updates:
  - Digester project is 75% complete.
  - Nitrification miscellaneous improvement project 80% complete.
  - Effluent analyzer upgrade project is 80% complete.
- Projects in design:
  - BNR rehabilitation project design is complete; project is going out for bid.
  - Filter rehabilitation project design's will be finalized at end of February.
  - Dewatering building rehabilitation project design is on-going.
- Proposal updates:
  - SCADA intergrader project design is out for bid.
  - RFP to move from current CMMS to a different CMMS is still being worked on; expected to go out for bid next month.
- Laura Giuliano is retiring February 5, 2020. Her replacement is expected to start in March.
- Negotiations with SW Gas are on-going.
- Durango Facility has entered a maintenance mode in preparation to close the plant.
- Considering adding Polygiene™ to treatment process.

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

- Finished Laughlin project.
- Moapa Valley is beginning work to replace a lift station.
- Flamingo Plant Updates:
  - DAFTs rehabilitation project is on-going.
  - New reuse pump station project is on-going.
  - Plant expansion project design is underway at 30%.
  - Beginning 2/6/2020, the CCWRD will take 20,000 gallons of grease per week to a new processing facility, near Apex, at a rate of \$0.06/gallon.
- Whitney Lift Station SSO occurred when an underground 18" pipe failed. The majority of the SSO was captured before reaching the wash. The cause of the overflow is being investigated. The lift station is being bypassed while it is under construction for repairs.

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

- The Utilities Director position has been filled.
- Nellis reuse project is nearing completion; waiting for SCADA system integration. Expect completion by mid- February.
- Flow equalization basin design is 60% complete.

- Sludge conveyance project received 100% design submittals. Project will replace current sludge conveyance; estimated start date 7/1/2020.
- Sloan channel diversion is still underway. CNLV is working to divert the flow from the channel to evaluate the leaking box culverts for repairs.
- Project proposal to recode membrane trains and replace existing membranes to increase flow at the plant is under review.

#### **I. City of Henderson**

- SSO occurred at the Lake Las Vegas Lift Station. Samples were collected, awaiting results. Working to replace force main, surge tanks and other parts that contributed to the SSO.
- Phase 4 plant expansion is looking for an engineering consultant to begin project. The expansion will increase capacity to 40 MGD.
- Green Valley reclaim water line broke near Stephanie and Gibson. Excavated ground and replaced the damaged portion of the pipe, but additional leaks occurred elsewhere along the line. Evaluation is on-going.

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

- A. Water Quality Standards update: New statewide Selenium standards were adopted by the Nevada State Environmental Commission on December 4<sup>th</sup>. The regulations include a 3-year hold on Las Vegas Wash and Tributaries, with an expectation from NDEP that Southern Nevada agencies will work together to develop/propose site specific Selenium standards during that timeframe. Ecotoxicologist firm selection has begun and funding distribution has been referred to the Las Vegas Valley Watershed Advisory Committee.
- B. MS4 Permit update: The new draft MS4 permit is still being internally reviewed by NDEP and is expected to be presented to the MS4 co-permittees in the coming weeks for review.
- C. 208 update: CCWQ is continuing to assess the Plan's recommendations and is compiling current discharger project status to correlate it with the 208.

### **9. MEMBER VACANCIES**

- A. Virgin Valley Water District – 1 member vacancy
- B. City of Las Vegas – 1 alternate vacancy
  - i. Intend to fill the 3<sup>rd</sup> alternate in the next few months

### **10. COMMENTS BY THE GENERAL PUBLIC - None**

### **11. SCHEDULE NEXT MEETING**

The next meeting will be scheduled on May 6, 2020 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.

### **12. ADJOURNMENT**

The meeting was adjourned at 10:38 am.

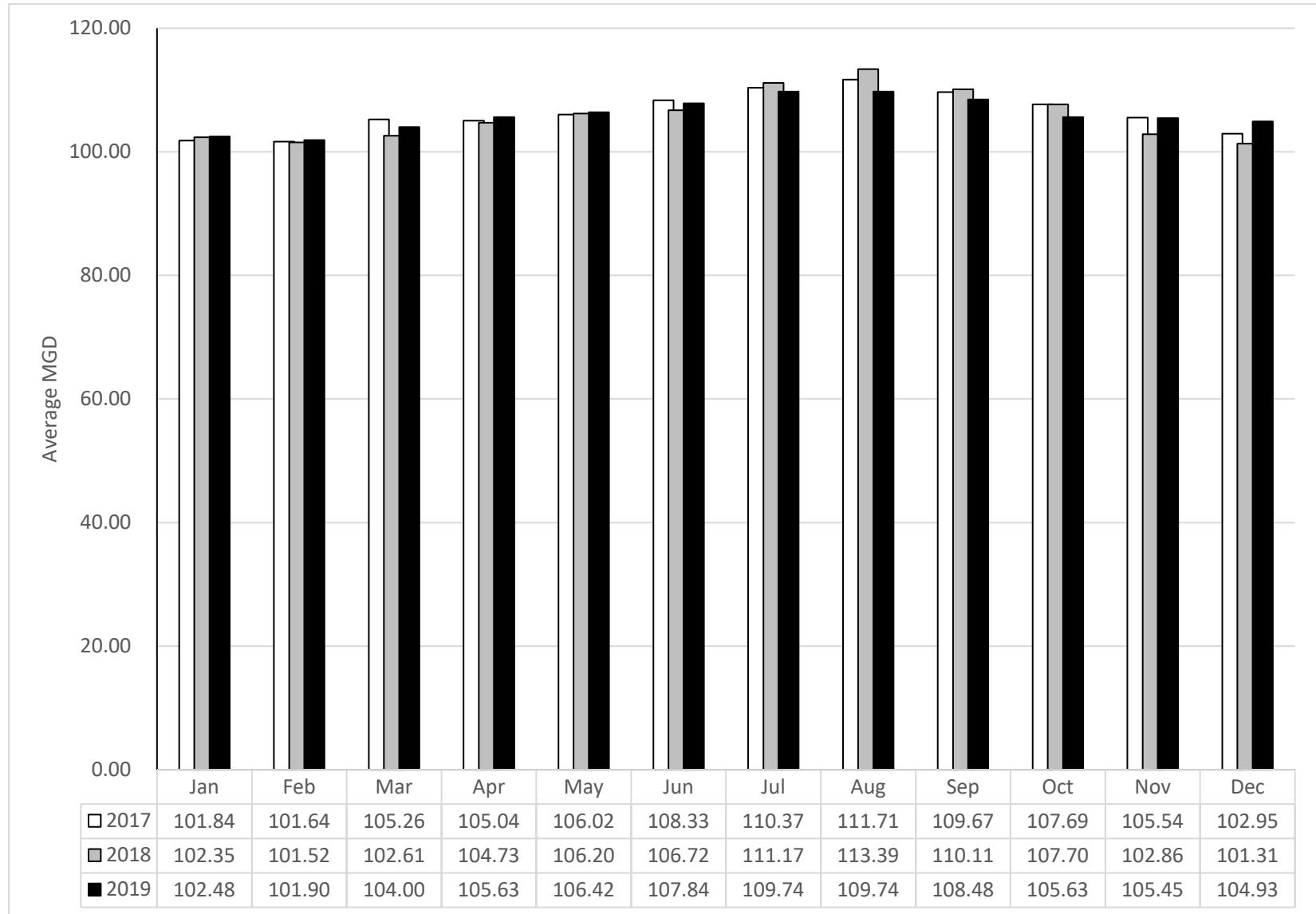
2019  
4<sup>th</sup> Quarter Flow Report  
For  
Clark County Sewage  
And  
Wastewater Advisory  
Committee  
(SWAC)

February 3, 2020

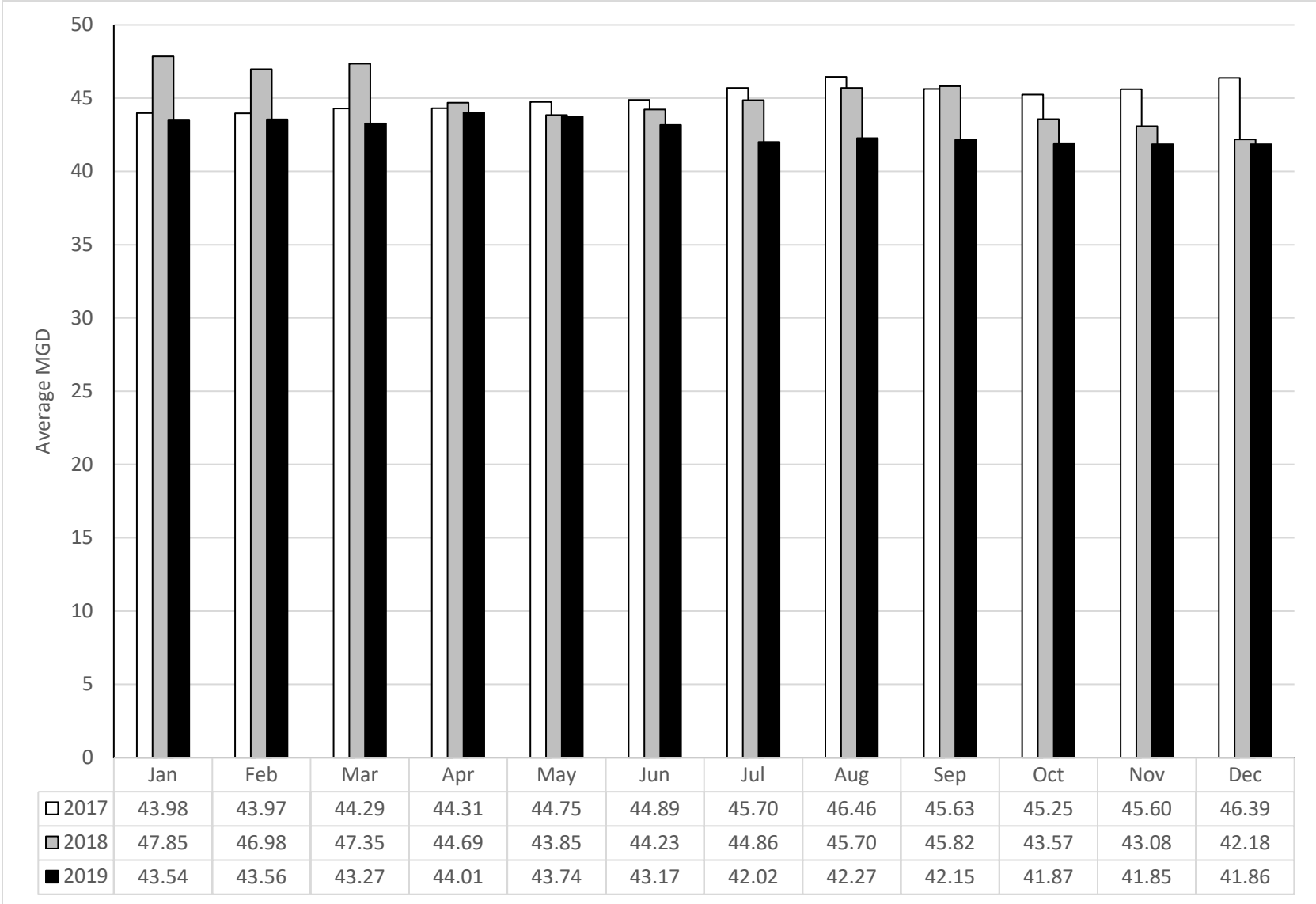
# Wastewater Flows

2017 through 2019

# Clark County Water Reclamation District Wastewater Flows

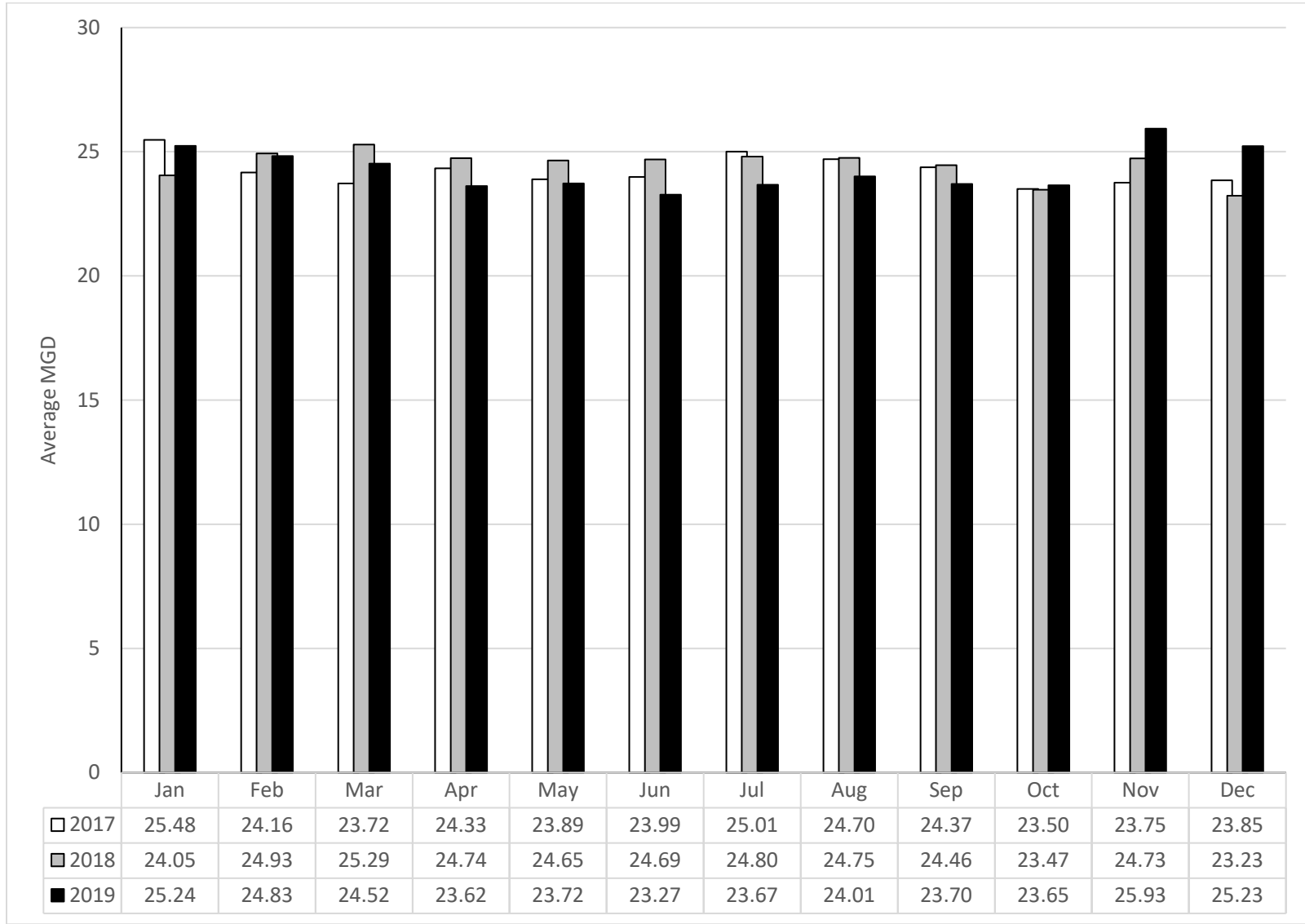


# City of Las Vegas Wastewater Flows

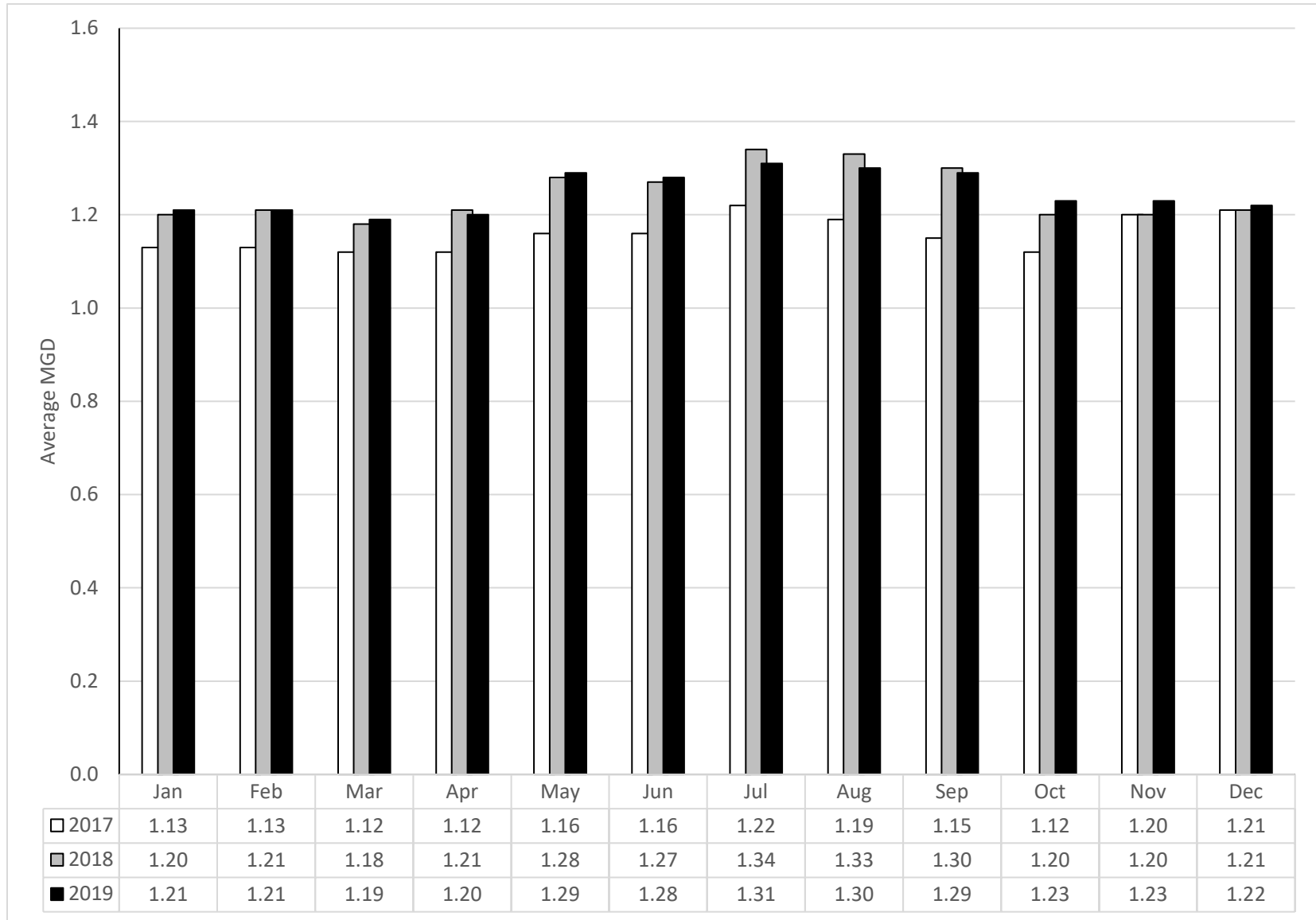




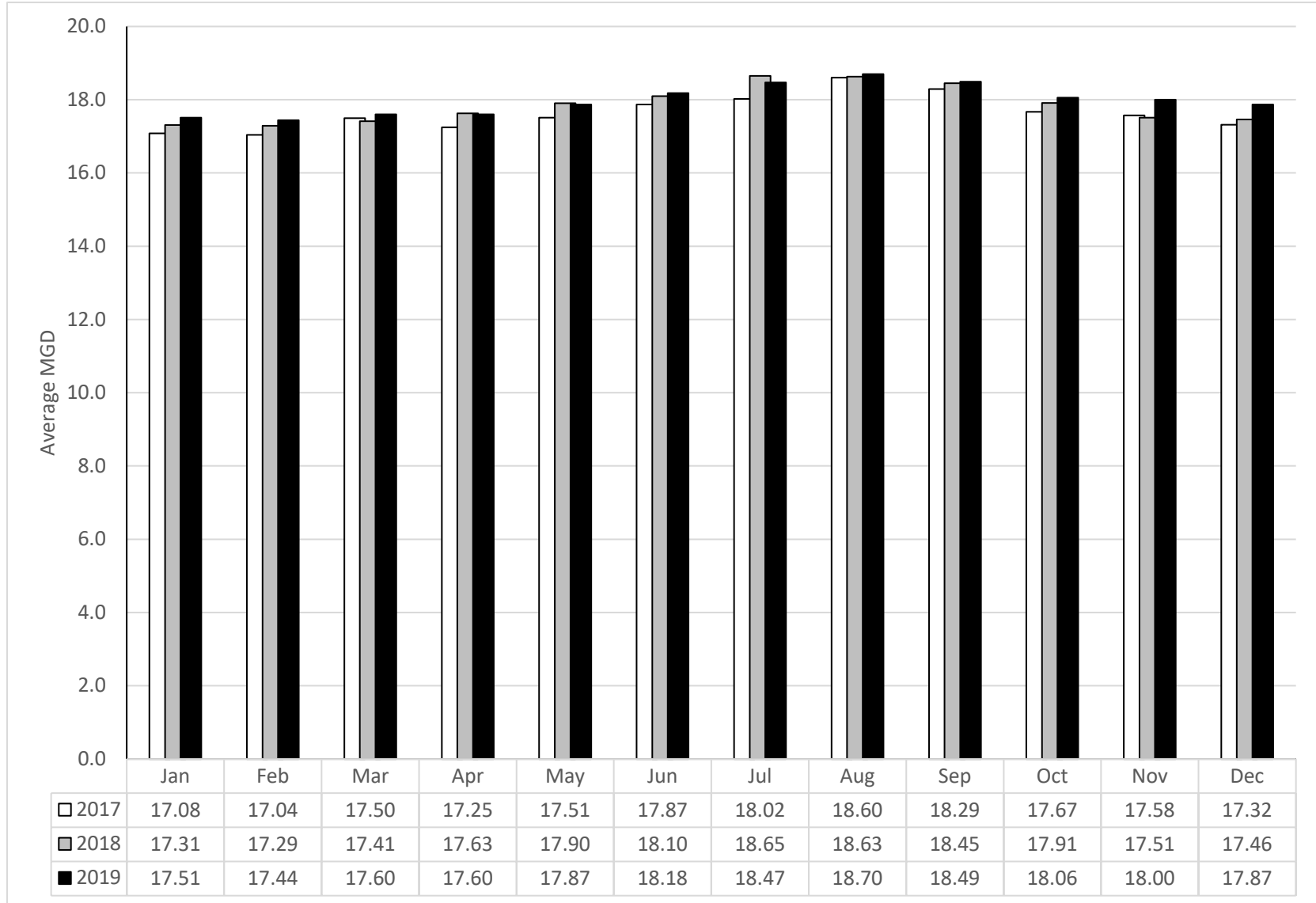
# City of Henderson Wastewater Flows



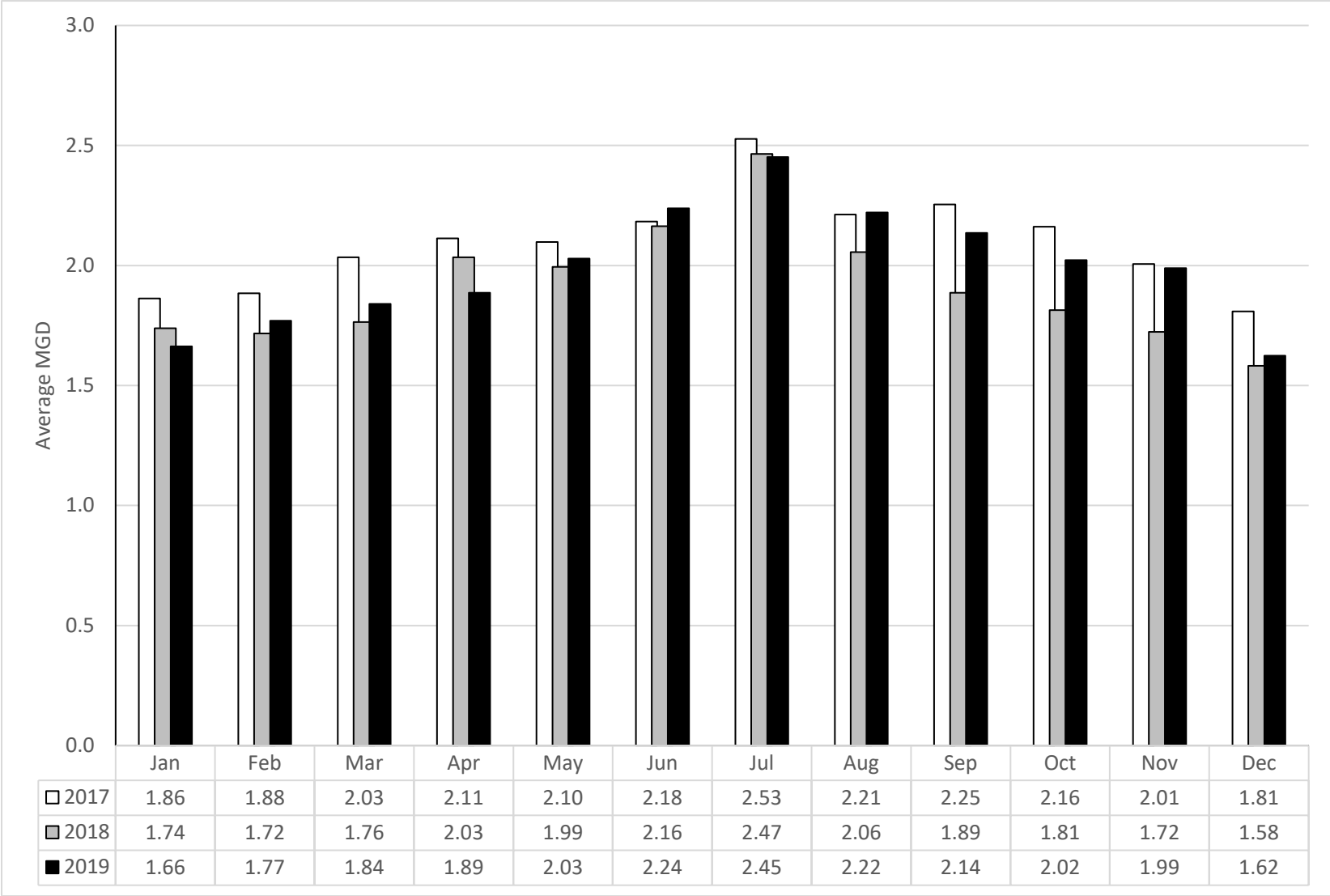
# Boulder City Wastewater Flows



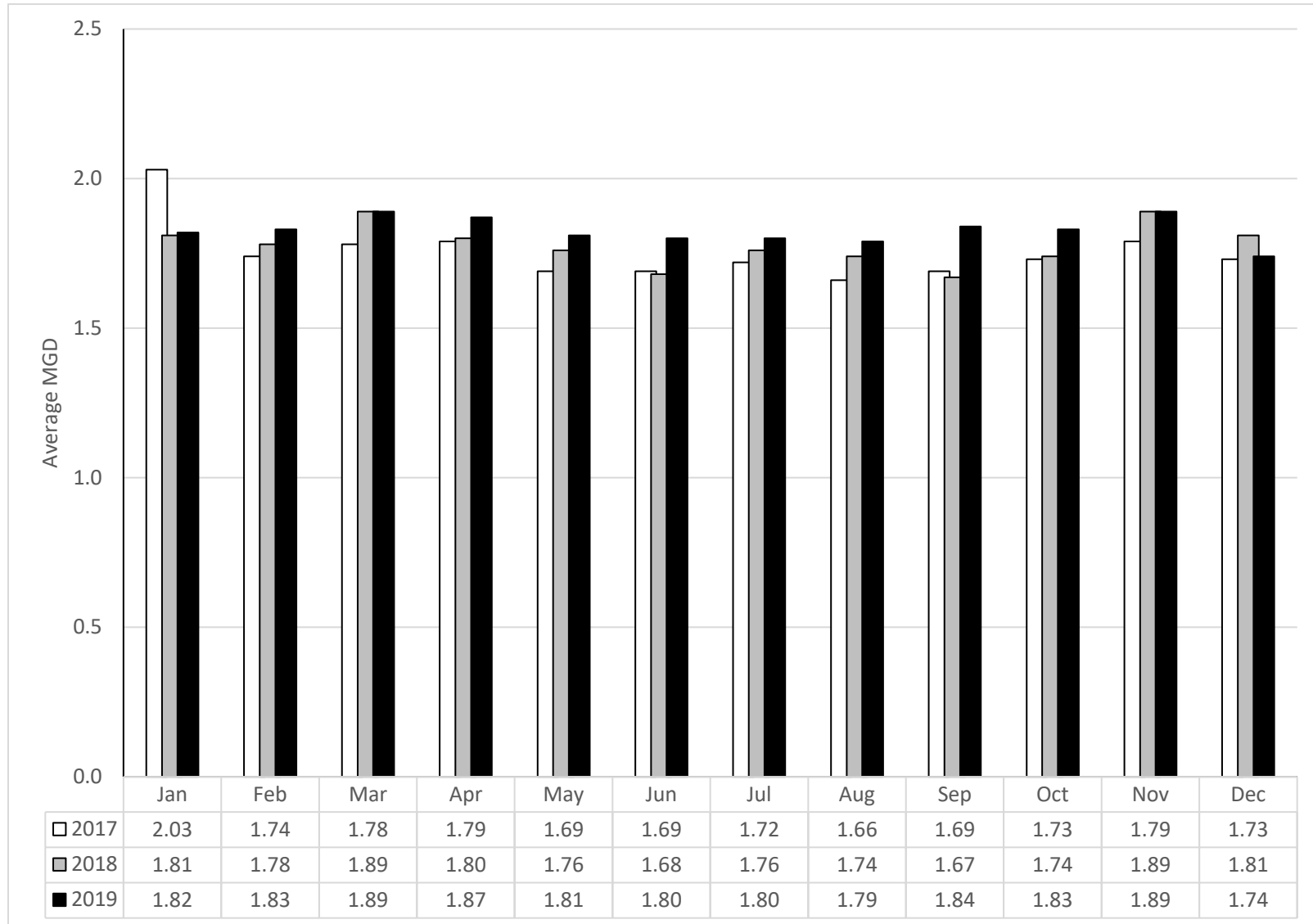
# City of North Las Vegas Wastewater Flows



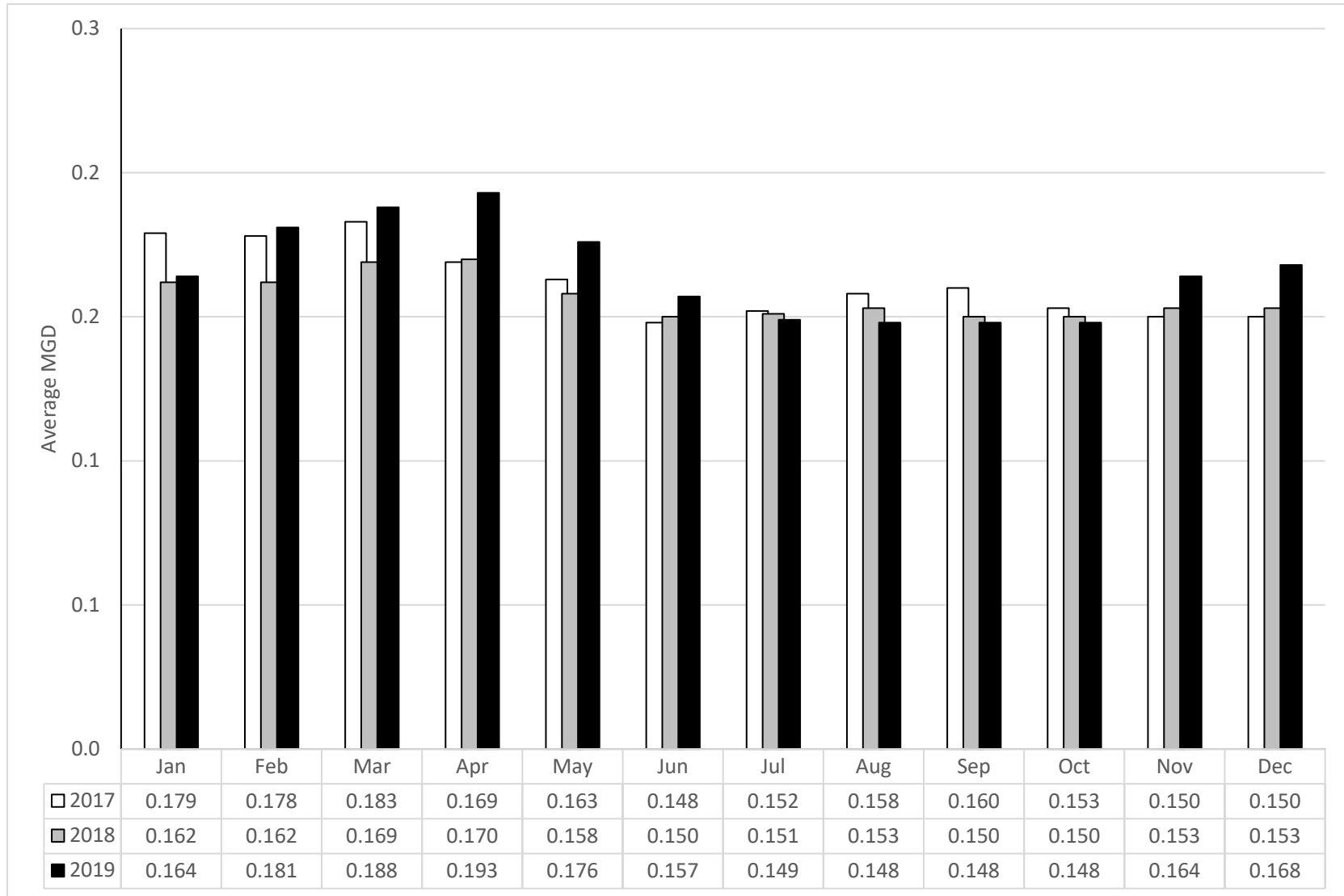
# Laughlin Wastewater Flows



# City of Mesquite Wastewater Flows



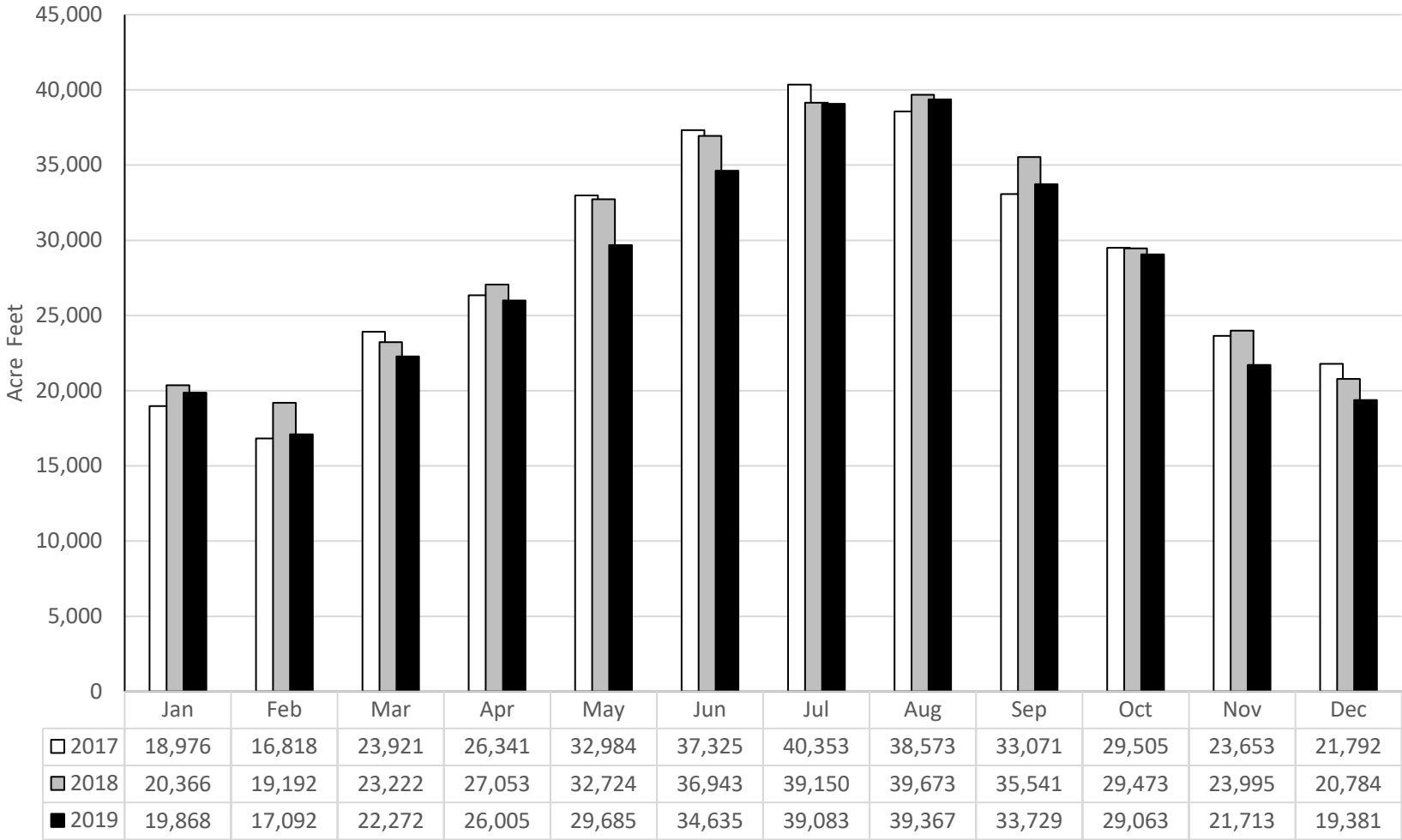
# Moapa Wastewater Flows



# Water Production

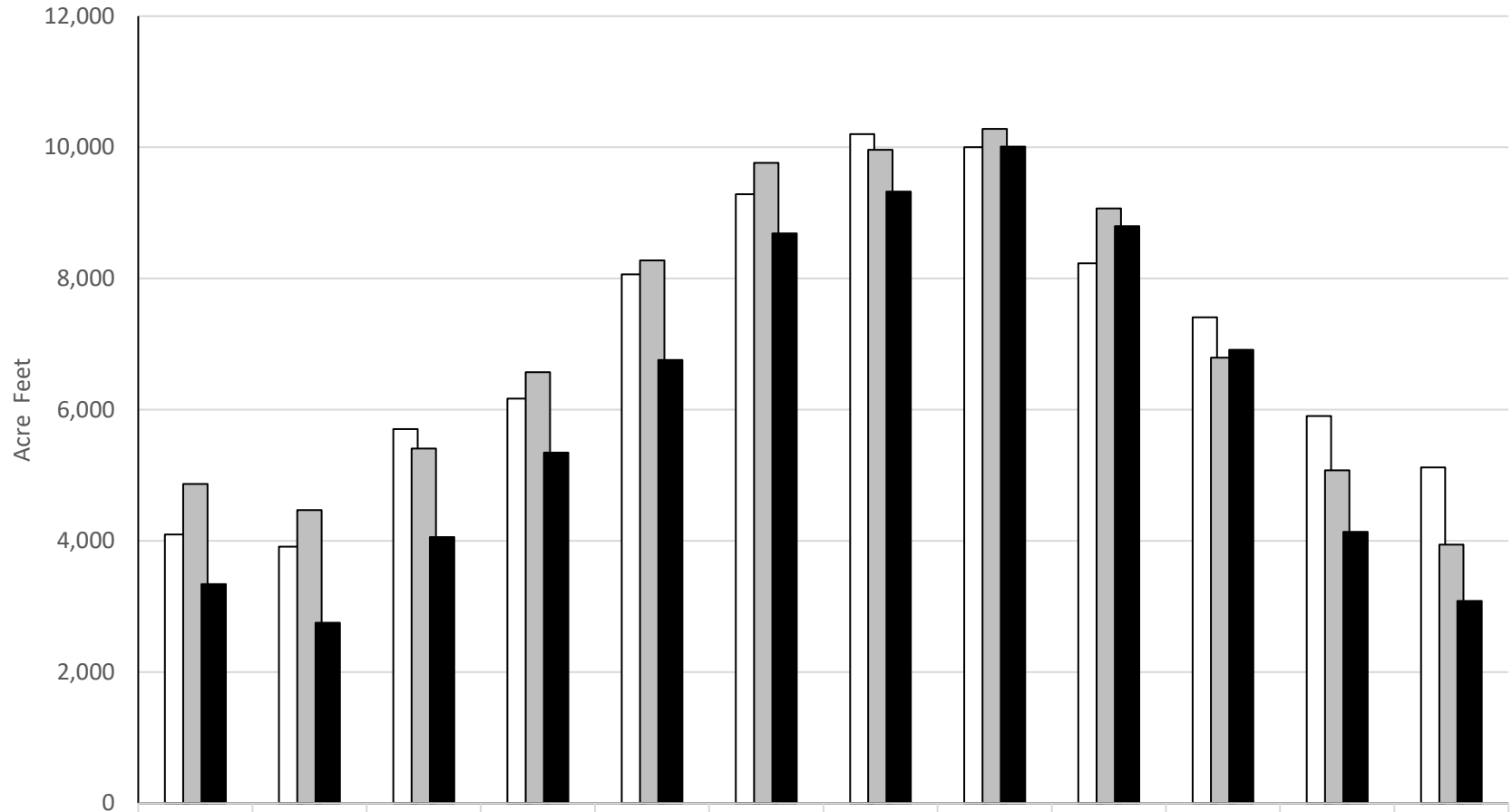
2017 through 2019

# Las Vegas Valley Water District Water Production



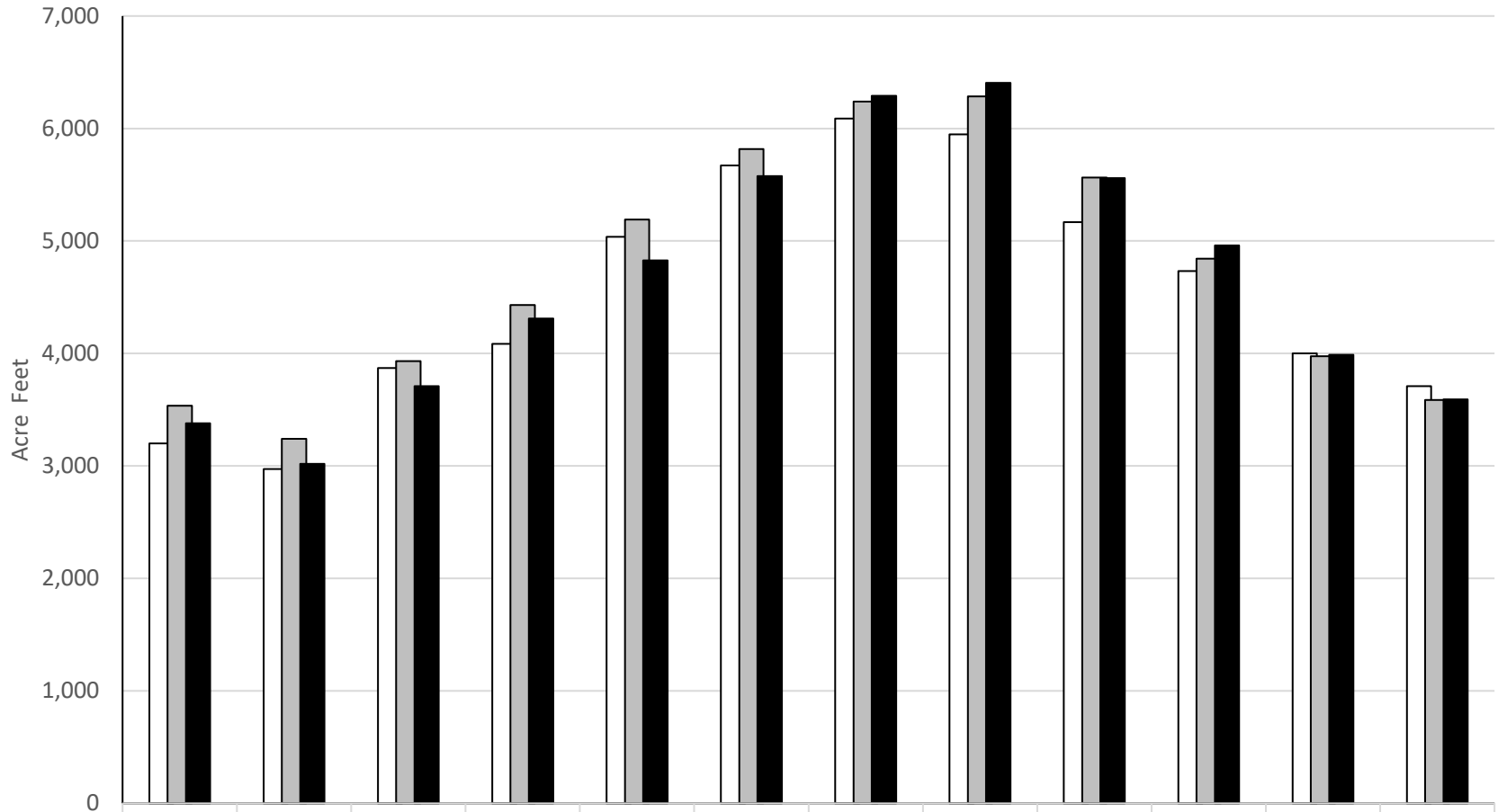


# City of Henderson Water Production



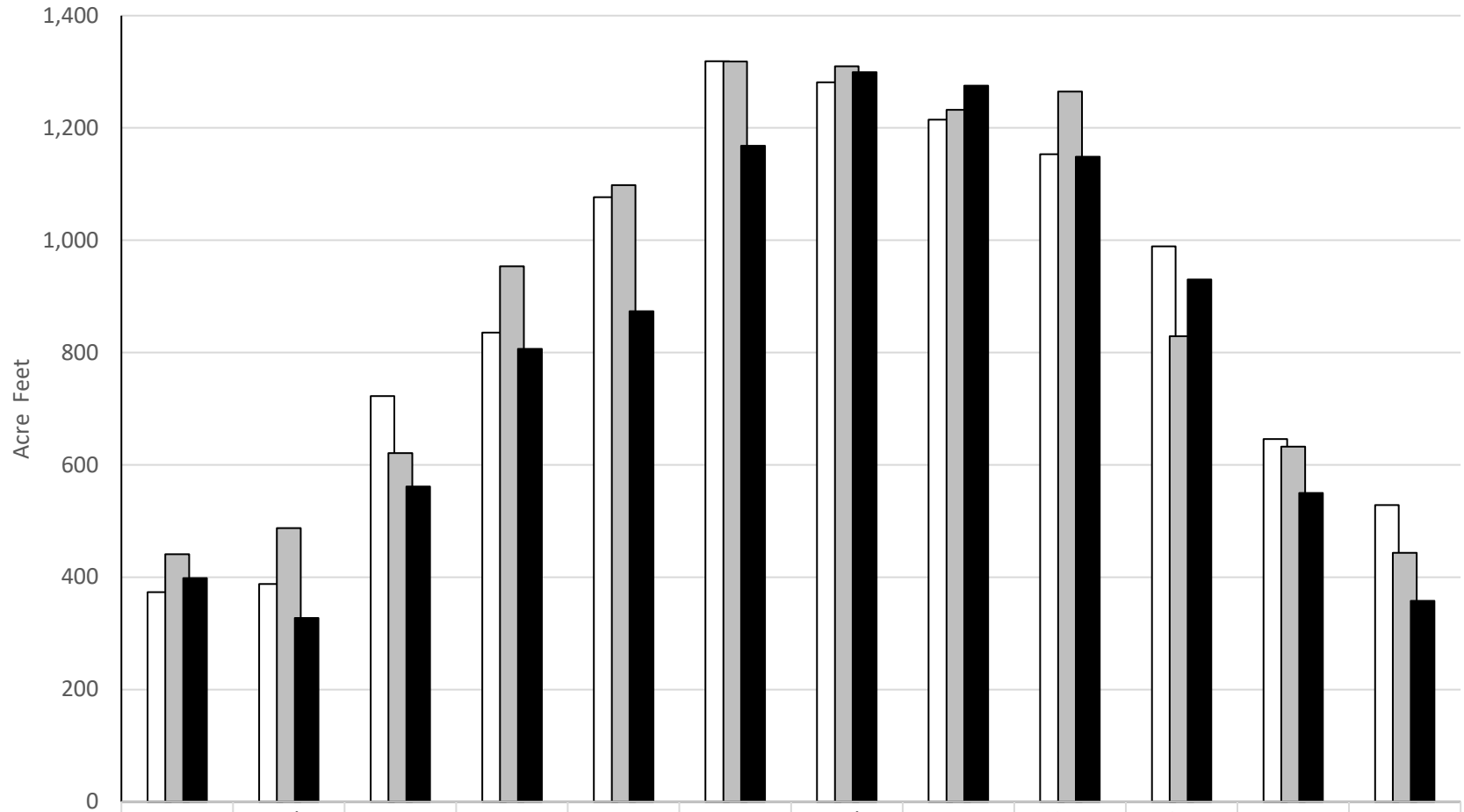
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2017	4,099	3,910	5,704	6,170	8,065	9,287	10,202	10,000	8,233	7,410	5,906	5,122
■ 2018	4,869	4,470	5,408	6,570	8,276	9,763	9,964	10,281	9,070	6,794	5,074	3,941
■ 2019	3,343	2,754	4,059	5,344	6,758	8,689	9,325	10,011	8,797	6,913	4,140	3,085

# City of North Las Vegas Water Production



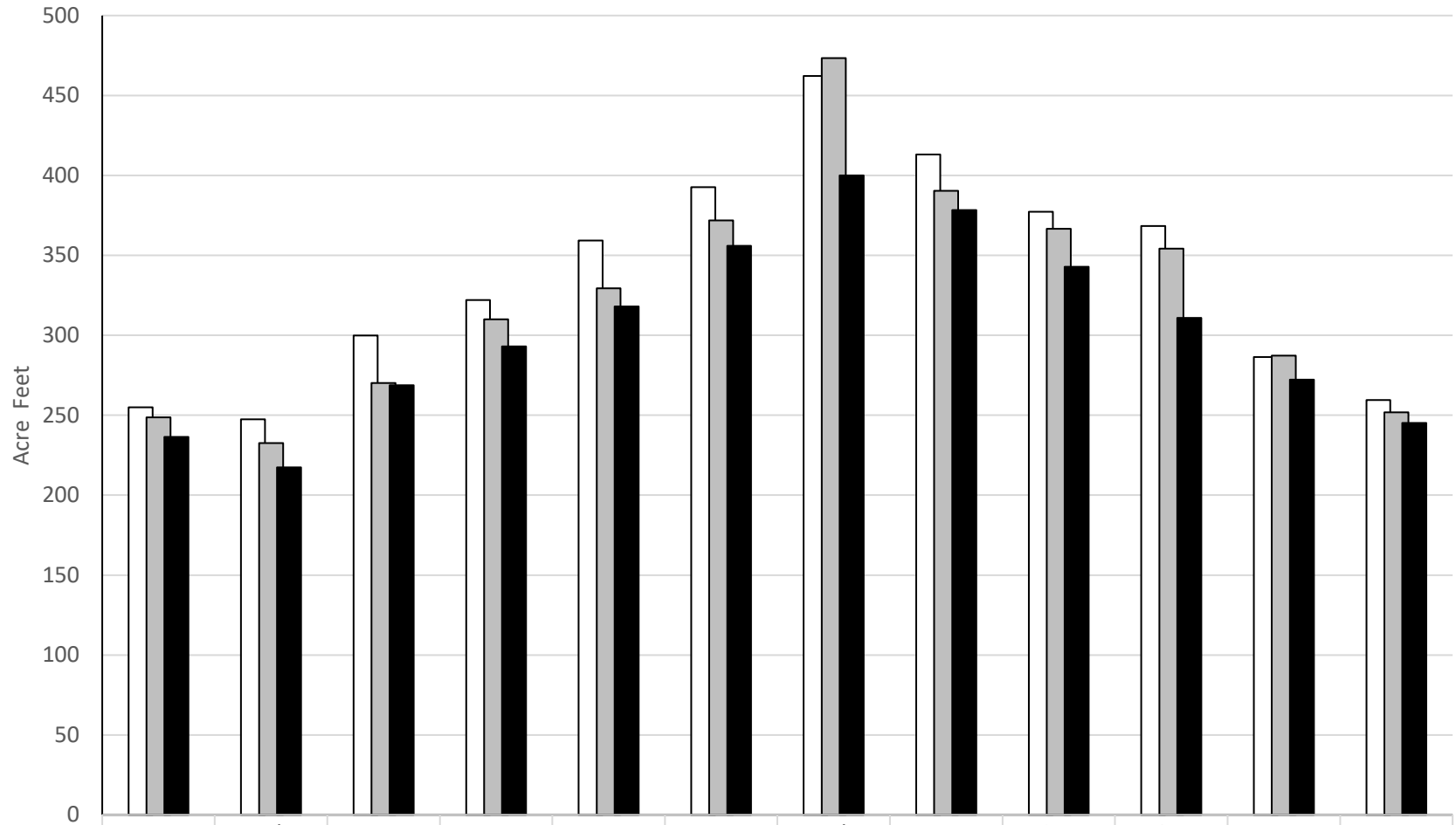
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2017	3,200	2,973	3,870	4,086	5,037	5,670	6,088	5,948	5,168	4,732	4,001	3,708
■ 2018	3,534	3,241	3,931	4,430	5,189	5,818	6,240	6,285	5,564	4,841	3,974	3,587
■ 2019	3,378	3,020	3,709	4,311	4,827	5,578	6,291	6,405	5,560	4,960	3,989	3,592

# Boulder City Water Production



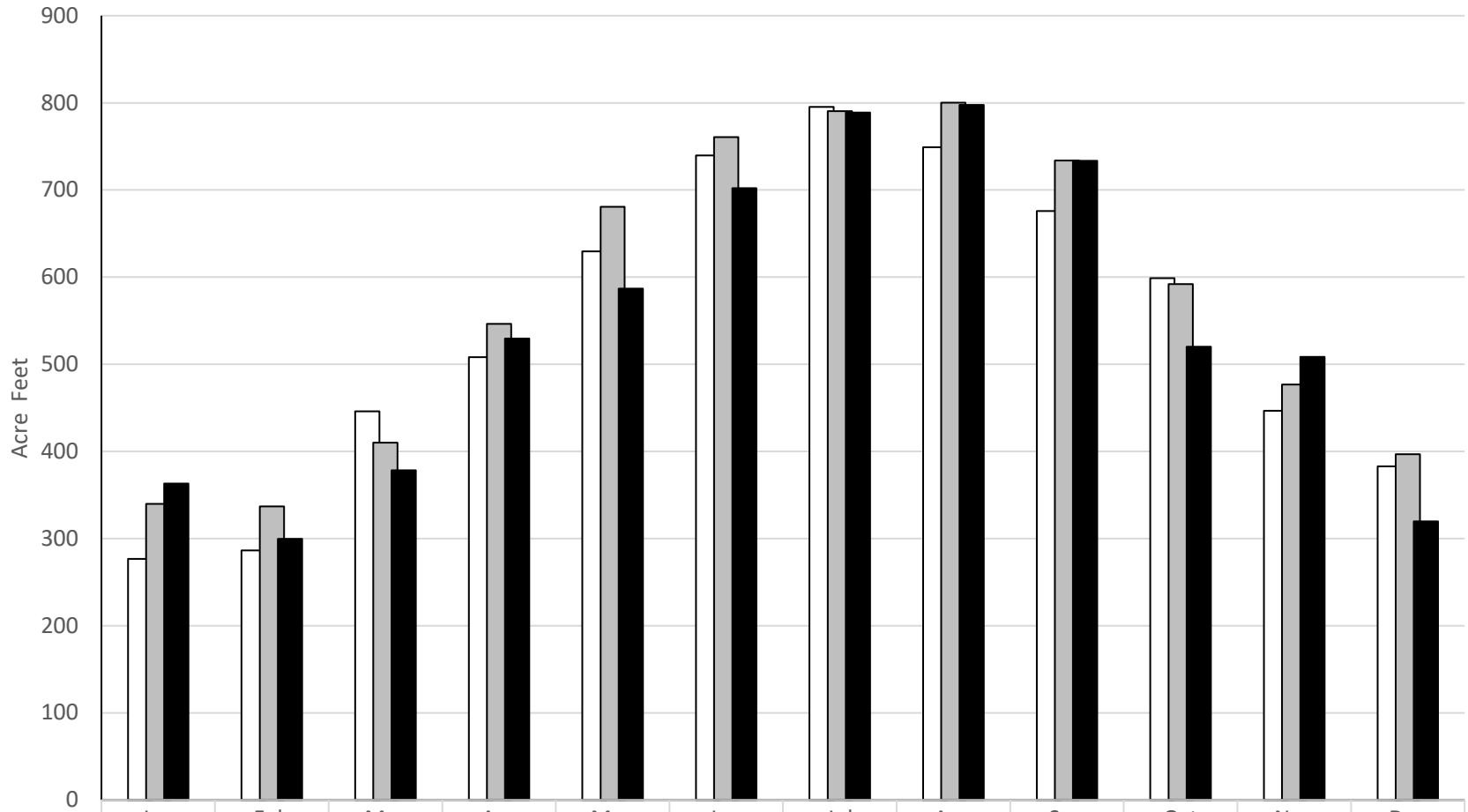
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2017	374	388	722	835	1,077	1,319	1,281	1,215	1,153	989	646	528
■ 2018	441	487	621	954	1,098	1,318	1,310	1,232	1,265	829	633	444
■ 2019	399	327	561	807	874	1,168	1,299	1,275	1,149	930	550	358

# Big Bend Water District Water Production



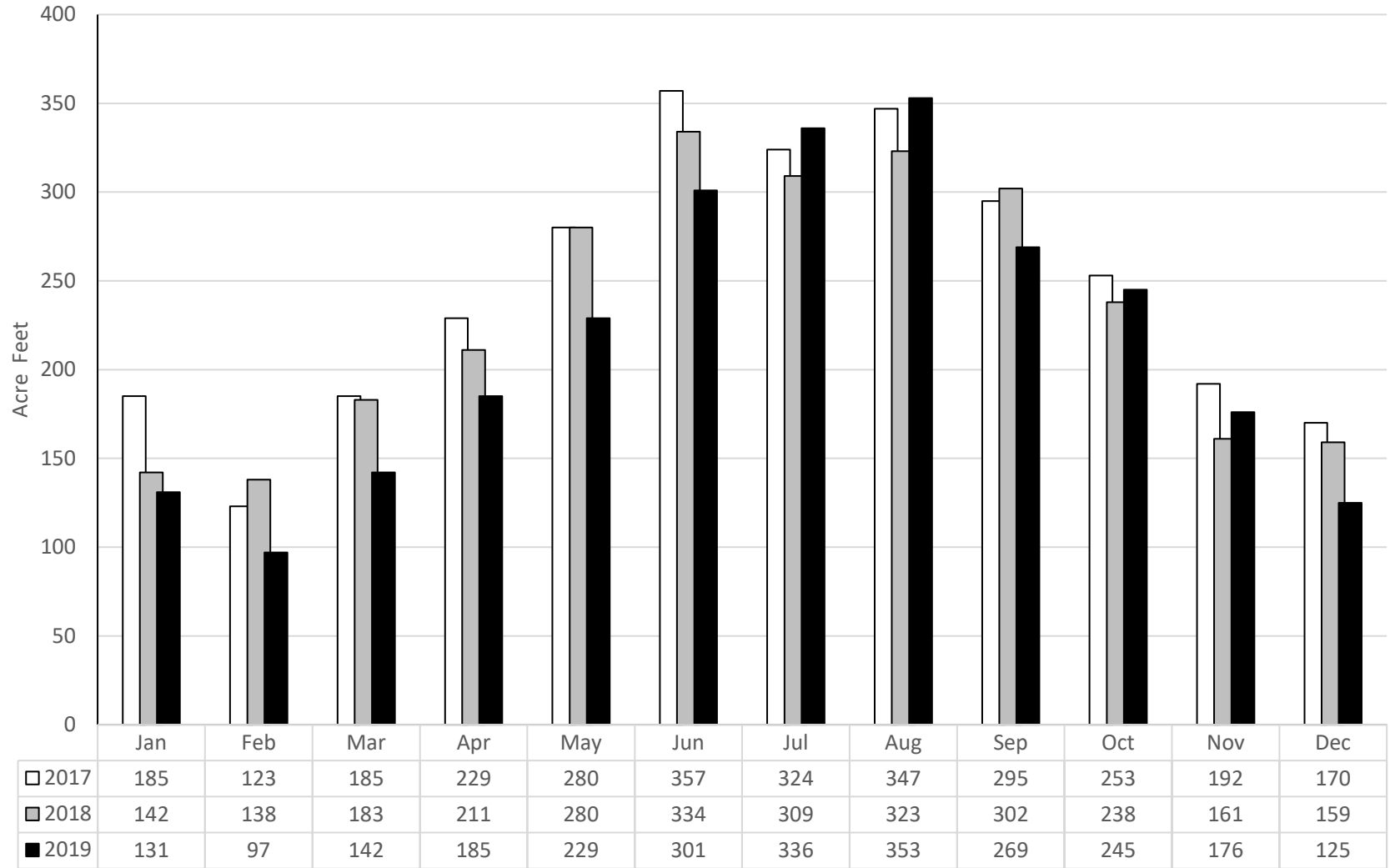
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	255	247	300	322	359	393	462	413	377	368	286	260
2018	249	233	270	310	329	372	473	390	367	354	287	252
2019	236	217	269	293	318	356	400	378	343	311	272	245

# Virgin Valley Water District Water Production



2017	277	286	446	508	630	740	795	749	676	599	447	383
2018	340	337	410	546	681	761	790	800	734	592	477	397
2019	363	300	378	529	587	702	789	798	734	520	508	320

# 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		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Jan	101.84	102.35	102.48	43.98	47.85	43.54	17.08	17.31	17.51	25.48	24.05	25.24	1.13	1.20	1.21
Feb	101.64	101.52	101.90	43.97	46.98	43.56	17.04	17.29	17.44	24.16	24.93	24.83	1.13	1.21	1.21
Mar	105.26	102.61	104.00	44.29	47.35	43.27	17.50	17.41	17.60	23.72	25.29	24.52	1.12	1.18	1.19
Apr	105.04	104.73	105.63	44.31	44.69	44.01	17.25	17.63	17.60	24.33	24.74	23.62	1.12	1.21	1.20
May	106.02	106.20	106.42	44.75	43.85	43.74	17.51	17.90	17.87	23.89	24.65	23.72	1.16	1.28	1.29
Jun	108.33	106.72	107.84	44.89	44.23	43.17	17.87	18.10	18.18	23.99	24.69	23.27	1.16	1.27	1.28
Jul	110.37	111.17	109.74	45.70	44.86	42.02	18.02	18.65	18.47	25.01	24.80	23.67	1.22	1.34	1.31
Aug	111.71	113.39	109.74	46.46	45.70	42.27	18.60	18.63	18.70	24.70	24.75	24.01	1.19	1.33	1.30
Sep	109.67	110.11	108.48	45.63	45.82	42.15	18.29	18.45	18.49	24.37	24.46	23.70	1.15	1.30	1.29
Oct	107.69	107.70	105.63	45.25	43.57	41.87	17.67	17.91	18.06	23.50	23.47	23.65	1.12	1.20	1.23
Nov	105.54	102.86	105.45	45.60	43.08	41.85	17.58	17.51	18.00	23.75	24.73	25.93	1.20	1.20	1.23
Dec	102.95	101.31	104.93	46.39	42.18	41.86	17.32	17.46	17.87	23.85	23.23	25.23	1.21	1.21	1.22
ANNUAL	106.34	105.89	106.02	45.10	45.02	42.19	17.60	17.86	17.98	24.23	24.48	24.28	1.16	1.24	1.25

\* Includes estimated .5 MGD NLV

# Historic Trends Influent Wastewater Flows

(Avg. in MGD)

Month	Searchlight			Blue Diamond			MVWRC			Laughlin			Mesquite			Indian Springs		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Jan	0.040	0.038	0.046	0.016	0.016	0.014	0.179	0.162	0.164	1.86	1.74	1.66	2.03	1.81	1.82	0.095	0.095	0.106
Feb	0.039	0.036	0.048	0.014	0.021	0.009	0.178	0.162	0.181	1.88	1.72	1.77	1.74	1.78	1.83	0.095	0.108	0.112
Mar	0.040	0.039	0.042	0.009	0.010	0.009	0.183	0.169	0.188	2.03	1.76	1.84	1.78	1.89	1.89	0.109	0.103	0.101
Apr	0.044	0.039	0.041	0.014	0.011	0.008	0.169	0.170	0.193	2.11	2.03	1.89	1.79	1.80	1.87	0.105	0.123	0.112
May	0.044	0.039	0.045	0.010	0.016	0.008	0.163	0.158	0.176	2.10	1.99	2.03	1.69	1.76	1.81	0.103	0.109	0.114
Jun	0.038	0.037	0.032	0.006	0.009	0.005	0.148	0.150	0.157	2.18	2.16	2.24	1.69	1.68	1.80	0.106	0.108	0.121
Jul	0.041	0.043	0.039	0.007	0.011	0.014	0.152	0.151	0.149	2.53	2.47	2.45	1.72	1.76	1.80	0.112	0.118	0.117
Aug	0.042	0.040	0.037	0.011	0.015	0.017	0.158	0.153	0.148	2.21	2.06	2.22	1.66	1.74	1.79	0.109	0.110	0.120
Sep	0.038	0.038	0.039	0.010	0.013	0.022	0.160	0.150	0.148	2.25	1.89	2.14	1.69	1.67	1.84	0.110	0.107	0.119
Oct	0.039	0.042	0.031	0.011	0.014	0.020	0.153	0.150	0.148	2.16	1.81	2.02	1.73	1.74	1.83	0.096	0.108	0.127
Nov	0.048	0.047	0.035	0.017	0.016	0.017	0.150	0.153	0.164	2.01	1.72	1.99	1.79	1.89	1.89	0.099	0.103	0.120
Dec	0.035	0.043	0.034	0.007	0.011	0.017	0.150	0.153	0.168	1.81	1.58	1.62	1.73	1.81	1.74	0.095	0.101	0.114
ANNUAL	0.041	0.040	0.039	0.011	0.014	0.013	0.162	0.157	0.165	2.10	1.91	1.99	1.77	1.75	1.83	0.100	0.103	0.115



# Non-Discharging Facilities

Boulder City				
(Avg. in MGD)			(Total in MG)	
Month	Influent Flow	Reuse	Influent Flow	Reuse
Jan	1.21	0.37	37.50	11.50
Feb	1.21	0.40	33.90	11.20
Mar	1.19	0.86	36.90	26.70
Apr	1.20	0.70	36.00	21.00
May	1.29	0.50	40.00	15.50
Jun	1.28	0.49	38.40	14.70
Jul	1.31	0.45	40.60	14.00
Aug	1.30	0.45	40.30	14.00
Sep	1.29	0.34	38.70	10.20
Oct	1.23	0.30	38.10	9.30
Nov	1.23	0.27	36.90	8.10
Dec	1.22	0.15	37.80	4.65
Annual	1.25	0.44	455.10	160.85

# Las Vegas Wash and Colorado River Dischargers (2019)

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	102.48	0.28	0.00	0.28	102.20	45.58	0.26	0.00	0.88	1.13	43.54	25.24	2.96	19.51	17.51	0.00	17.51
Feb	101.90	0.20	0.00	0.20	101.70	46.29	0.25	0.00	0.35	0.60	43.56	24.83	2.80	19.76	17.44	0.00	17.44
Mar	104.00	0.42	0.00	0.42	103.58	45.02	0.53	0.00	1.29	1.82	43.28	24.52	4.38	18.21	17.60	0.00	17.60
Apr	105.63	0.90	0.00	0.90	104.73	45.49	1.29	0.00	2.91	4.19	44.01	23.62	7.73	15.08	17.60	0.00	17.60
May	106.42	0.99	0.00	0.99	105.43	45.28	1.59	0.00	1.62	3.22	43.74	23.72	9.33	14.16	17.87	0.00	17.87
Jun	107.84	2.18	0.00	2.18	105.66	45.22	2.44	0.00	0.00	2.44	43.17	23.27	10.69	11.71	18.18	0.00	18.18
Jul	109.74	3.65	0.00	3.65	106.10	42.82	2.19	0.00	0.00	2.19	42.02	23.67	11.37	11.29	18.47	0.00	18.47
Aug	109.74	3.48	0.00	3.48	106.26	43.04	1.86	0.00	0.00	1.86	42.27	24.01	10.61	12.70	18.70	0.00	18.70
Sep	108.48	2.39	0.00	2.39	106.09	42.91	1.98	0.00	0.00	1.98	42.15	23.70	11.71	11.25	18.49	0.00	18.49
Oct	105.63	0.87	0.00	0.87	104.76	42.68	1.41	0.00	0.00	1.41	42.51	23.65	7.78	15.02	18.06	0.00	18.06
Nov	105.45	0.32	0.00	0.32	105.13	42.55	0.58	0.00	0.00	0.58	43.31	25.93	4.10	17.02	18.00	0.00	18.00
Dec	104.93	0.22	0.00	0.22	104.71	42.53	0.25	0.00	0.00	0.25	43.80	25.23	3.73	19.65	17.87	0.00	17.87
<b>YTD</b>	106.02	1.32	0.00	1.32	104.70	44.12	1.22	0.00	0.59	1.81	43.11	24.28	7.27	15.45	17.98	0.00	17.98

# Las Vegas Wash and Colorado River Dischargers (2019)

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	190.81	4.37	182.76	1.66	0.00	1.66	17,545
Feb	190.46	3.61	182.46	1.77	0.00	1.77	16,396
Mar	191.14	6.62	182.67	1.84	0.00	1.84	16,421
Apr	192.34	12.82	180.50	1.89	0.00	1.89	16,232
May	193.29	13.54	178.75	2.03	0.00	2.03	16,088.57
Jun	194.51	15.31	178.30	2.24	0.00	2.24	16,067.47
Jul	194.70	16.45	177.88	2.45	0.00	2.45	16,048.69
Aug	195.49	17.05	179.93	2.22	0.00	2.22	16,211.11
Sep	193.58	12.16	177.98	2.14	0.00	2.14	16,029.56
Oct	190.02	6.38	180.35	2.02	0.00	2.02	16,230.52
Nov	191.93	4.62	183.46	1.99	0.00	1.99	16,504.63
Dec	190.56	0.00	186.03	1.62	0.00	1.62	16,701.14
<b>YTD</b>	<b>2308.83</b>	<b>112.94</b>	<b>2171.06</b>	<b>23.87</b>	<b>0.00</b>	<b>23.87</b>	<b>196475.94</b>

# Water Production 2019

(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	19,868	19,868	3,186	157	3,343	347	3,031	3,378	94	304	399	9	68	77	356	26,551
Feb	0	17,092	17,092	2,670	84	2,754	312	2,708	3,020	71	257	327	8	72	80	320	22,868
Mar	31	22,241	22,272	3,930	128	4,059	344	3,365	3,709	175	386	561	24	74	98	399	30,171
Apr	4,926	21,079	26,005	5,062	282	5,344	155	4,156	4,311	303	503	807	72	85	157	5,153	31,188
May	5,463	24,222	29,685	6,606	152	6,758	101	4,726	4,827	299	575	874	65	99	164	5,629	36,526
Jun	5,231	29,404	34,635	8,370	319	8,689	96	5,481	5,578	442	726	1,168	97	99	196	5,424	44,523
Jul	5,616	33,467	39,083	9,014	311	9,325	100	6,191	6,291	484	815	1,299	103	112	216	5,819	50,083
Aug	5,023	34,344	39,367	9,675	335	10,011	94	6,311	6,405	461	815	1,275	91	116	207	5,208	51,721
Sep	1,545	32,184	33,729	8,306	491	8,797	85	5,475	5,560	461	687	1,149	88	103	191	1,718	47,216
Oct	0	29,063	29,063	6,624	289	6,913	43	4,917	4,960	344	586	930	53	94	147	96	41,628
Nov	0	21,713	21,713	3,988	152	4,140	0	3,989	3,989	162	388	550	19	74	92	19	30,313
Dec	0	19,381	19,381	3,004	81	3,085	0	3,592	3,592	76	282	358	8	69	76	8	26,403
YTD	27,835	304,055	331,890	70,435	2,783	73,217	1,678	53,940	55,618	3,373	6,324	9,697	636	1,065	1,701	30,149	439,192

# 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		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Jan	18,976	20,366	19,868	4,099	4,869	3,343	3,200	3,534	3,378	374	441	399	255	249	236	277	340	363	185	142	131
Feb	16,818	19,192	17,092	3,910	4,470	2,754	2,973	3,241	3,020	388	487	327	247	233	217	286	337	300	123	138	97
Mar	23,921	23,222	22,272	5,704	5,408	4,059	3,870	3,931	3,709	722	621	561	300	270	269	446	410	378	185	183	142
Apr	26,341	27,053	26,005	6,170	6,570	5,344	4,086	4,430	4,311	835	954	807	322	310	293	508	546	529	229	211	185
May	32,984	32,724	29,685	8,065	8,276	6,758	5,037	5,189	4,827	1,077	1,098	874	359	329	318	630	681	587	280	280	229
Jun	37,325	36,943	34,635	9,287	9,763	8,689	5,670	5,818	5,578	1,319	1,318	1,168	393	372	356	740	761	702	357	334	301
Jul	40,353	39,150	39,083	10,202	9,964	9,325	6,088	6,240	6,291	1,281	1,310	1,299	462	473	400	795	790	789	324	309	336
Aug	38,573	39,673	39,367	10,000	10,281	10,011	5,948	6,285	6,405	1,215	1,232	1,275	413	390	378	749	800	798	347	323	353
Sep	33,071	35,541	33,729	8,233	9,070	8,797	5,168	5,564	5,560	1,153	1,265	1,149	377	367	343	676	734	734	295	302	269
Oct	29,505	29,473	29,063	7,410	6,794	6,913	4,732	4,841	4,960	989	829	930	368	354	311	599	592	520	253	238	245
Nov	23,653	23,995	21,713	5,906	5,074	4,140	4,001	3,974	3,989	646	633	550	286	287	272	447	477	508	192	161	176
Dec	21,792	20,784	19,381	5,122	3,941	3,085	3,708	3,587	3,592	528	444	358	260	252	245	383	397	320	170	159	125
ANNUAL	343,312	348,115	331,890	84,107	84,480	73,217	54,481	56,634	55,618	10,650	10,632	9,697	4,043	3,886	3,639	6,535	6,864	6,528	2,892	2,940	2,589

# 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 **		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Jan	0.69	0.74	0.70	0.55	0.59	0.72	0.52	0.52	0.49	0.31	0.30	0.29	0.56	0.85	0.67	0.64	0.69	0.67
Feb	0.68	0.70	0.73	0.52	0.56	0.77	0.47	0.49	0.50	0.28	0.24	0.32	0.57	0.85	0.70	0.62	0.64	0.70
Mar	0.57	0.60	0.63	0.43	0.45	0.57	0.43	0.43	0.45	0.16	0.18	0.20	0.55	0.77	0.65	0.53	0.55	0.59
Apr	0.52	0.51	0.53	0.36	0.36	0.41	0.36	0.38	0.38	0.15	0.13	0.14	0.48	0.72	0.59	0.47	0.46	0.48
May	0.40	0.47	0.48	0.29	0.33	0.33	0.31	0.34	0.35	0.12	0.12	0.14	0.46	0.63	0.61	0.37	0.43	0.43
Jun	0.36	0.39	0.40	0.24	0.26	0.25	0.28	0.29	0.30	0.10	0.10	0.10	0.44	0.55	0.58	0.33	0.35	0.36
Jul	0.37	0.38	0.37	0.25	0.25	0.24	0.28	0.28	0.28	0.11	0.09	0.10	0.46	0.51	0.58	0.33	0.34	0.33
Aug	0.38	0.39	0.37	0.26	0.27	0.23	0.29	0.28	0.28	0.11	0.10	0.10	0.45	0.53	0.56	0.35	0.35	0.33
Sep	0.46	0.42	0.41	0.33	0.29	0.25	0.34	0.31	0.31	0.14	0.11	0.10	0.46	0.51	0.57	0.42	0.38	0.36
Oct	0.50	0.52	0.48	0.35	0.36	0.33	0.37	0.37	0.35	0.13	0.16	0.13	0.47	0.51	0.62	0.45	0.47	0.43
Nov	0.63	0.61	0.62	0.47	0.48	0.58	0.44	0.44	0.42	0.20	0.23	0.21	0.55	0.63	0.67	0.57	0.57	0.58
Dec	0.71	0.70	0.72	0.59	0.57	0.78	0.48	0.47	0.47	0.30	0.25	0.32	0.56	0.66	0.63	0.66	0.64	0.69
AVG.	0.49	0.50	0.50	0.35	0.36	0.37	0.36	0.36	0.36	0.15	0.14	0.14	0.50	0.64	0.62	0.45	0.46	0.46

# 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	19,868	13,808	3,343	2,401	3,378	1,666	399	115	236	158	27,224	18,148
Feb	17,092	12,469	2,754	2,134	3,020	1,499	327	104	217	152	23,410	16,357
Mar	22,272	13,888	4,059	2,333	3,709	1,674	561	113	269	175	30,869	18,183
Apr	26,005	13,509	5,344	2,175	4,311	1,620	807	110	293	174	36,759	17,588
May	29,685	14,131	6,758	2,257	4,827	1,700	874	123	318	193	42,461	18,404
Jun	34,635	13,903	8,689	2,142	5,578	1,674	1,168	118	356	206	50,426	18,043
Jul	39,083	14,438	9,325	2,252	6,291	1,757	1,299	125	400	233	56,397	18,805
Aug	39,367	14,462	10,011	2,284	6,405	1,779	1,275	124	378	211	57,436	18,860
Sep	33,729	13,868	8,797	2,182	5,560	1,702	1,149	119	343	197	49,577	18,068
Oct	29,063	14,032	6,913	2,250	4,960	1,718	930	117	311	192	42,177	18,310
Nov	21,713	13,561	4,140	2,387	3,989	1,657	550	113	272	183	30,664	17,902
Dec	19,381	13,965	3,085	2,400	3,592	1,700	358	116	245	155	26,661	18,336
YTD	331,890	166,034	73,217	27,197	55,618	20,147	9,697	1,397	3,639	2,229	474,062	217,004

# 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	0	0	0	0
Oct	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0
Total 2019	0	0	0	0	0	0	0
Total 2018	0	0	0	0	408	0	408
Total 2017	0	0	0	0	582	0	582