

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 November 4, 2020

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

Guests Present

Donahue, Rick
Jorgenson, Catherine
Harney, Sharon

CCWRD
CC District Attorney
CLV

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 AUGUST 26, 2020

Mark Dunbar moved and Todd Tietjen seconded to accept the August 26, 2020 minutes. The motion was unanimously approved.

4. APPROVAL OF AGENDA WITH THE INCLUSION OF ADDING EMERGENCY ITEMS/DELETING ITEMS

Howard Analla moved and Todd Tietjen seconded to approve the agenda. The motion was unanimously approved.

5. OPEN MEETING LAW DISCUSSION

- The Clark County DA, Catherine Jorgenson, provided a technical overview of Open Meeting Law requirements that apply to SWAC. As a public body created by statutes, SWAC is upheld by Open Meeting Law.

6. DISCUSSION AND DISTRIBUTION OF QUARTERLY FLOW REPORTS

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

- Members who submitted data to both SWAC and the Colorado River Commission are requested to re-verify data.
- WRD continues to see decreased (5%) flows (likely due to decreased tourist contributions originating from the Strip) compared to this quarter from last year, versus COH, CLV, CNLV, Boulder City who are all seeing higher flow rates compared to this quarter from last year.
- Reuse flows are affected by the shutdown of WRD's Desert Breeze and CLV's Durango Hills plants.

7. MEMBER UPDATES

A. Moapa Valley Water District

- N/A

B. Las Vegas Valley Water District

- Completed second round of flow tests at the River Mountain treatment plant. Tests demonstrated that the plant can produce more water than expected.
- Capital Improvement Projects are being re-evaluated and modified with exit points, if financial situations and/or needs change.

C. Boulder City

- Recently completed conditions assessment of the water and sewer system. Headworks system needs some repairs.
- Additional repairs are needed on the aerated lagoons, chlorine contact basin, as well as three lift stations. All are being added to the Capital Program over the next five years.
- Currently, the effluent is diverted to the desert.

D. Virgin Valley Water District

- N/A

E. City of Mesquite

- N/A

F. City of Las Vegas

- Item on the November City Council meeting agenda to approve new SWAC member, Sharon Harney, and also formalize the alternate, Nalleli Herrera.
- Entering the final stage of a rate study of sewer systems. The process has attracted the attention of prominent public figures. Funding options have been identified and are set to be presented to the council in the spring.
- New City Manager, Jorge Cervantes, is starting later this month.
- Influent and effluent flow meters:
 - HACH calibrated new flow meters that were installed on the influent to WPCF. Project is in commission for the next two weeks; evaluation is ongoing and adjustments will be made as needed.
 - Effluent flow meters are facing interference and location issues. The City has spent some money and put some redundancy in the hopes of resolving issues.
- Construction project updates:
 - Digester rehabilitation project is 90% complete.
 - BNR rehabilitation project is underway.
 - Nitrification miscellaneous improvement project is complete.
- Projects in design:
 - Process air systems rehabilitation project is preparing for site visits to evaluate the different technology options and the determination moving forward.
 - Dewatering building rehabilitation study is underway. The project will focus on evaluating new technology that could be used to update the plant's current dewatering building.
- Negotiations are ongoing to determine the future of the Durango Hills Plant. Data needs to be evaluated to determine if the nitrate from the plant negatively impacts the groundwater. The goal is to finalize plans by end of this year.

G. Clark County Water Reclamation District

- Collection System Updates:
 - Since August, two of the recently rehabilitated lift stations have failed. The contractor is back on site to fix the issues.
 - Whitney lift station rebuild is in pre-redesign. Evaluating technology options that will prevent future ragging of the pumps. Set aside 40 million dollars to rebuild Whitney lift station.
- Flamingo Plant Updates:
 - Moving forward with design of an expanded front end of the plant, including headworks, primary, and secondary areas.
 - Construction is ongoing on a new reclaimed water pump station.
 - DAFTS rehabilitation project is on-going.
- Moapa Valley lift station replacement is in redesign. A second lift station in Laughlin is being considered for replacement.

H. City of North Las Vegas

- Continue to work on the Nellis reuse water line. Currently, the system is manually operational, but work is being taken to fully automate the system. The City continues to supply water to Nellis.
- Plan to replace carbon and GAC in five units within the next month because they have been depleted.
- Membrane replacement contract was awarded to Suez. The replacement project is underway.
- Membrane recoating project is underway. Three membranes will be taken out of service and relined. As they are put back online, move the new membranes into the existing recoated tanks.
- EQ basin project is designed and planning to go out for bid in 2021.
- Sludge conveyer system project is out for bid.

I. City of Henderson

- Wastewater projects:
 - WRF expansion project entered phase 4. The project is expanding the east complex by adding process trains to increase capacity by 8 MGD to allow segments of the west side to be shut down and rehabilitated.
 - Jacobs Engineering is assisting with UV system expansion and rehabilitation project. Once completed, the UV disinfection system will have full redundancy.
 - West chemical building at WRF is being revamped. Plans to relocate feed systems for the supplemental phosphorus removal and separate out the electrical services as well.
 - LEAP aeration system project is underway at the SWRF. The plan is to have all trains back in service later this week. Estimate the upgrades will provide 30% energy savings.
 - Lake Las Vegas lift station is being upgraded. The project is delayed till March 2021 because of a delayed pump delivery. The project is moving forward, and a bypass pump was successfully installed.
 - Green Valley Force Main Reclaim line is going to be inspected and will be relined in certain sections. Moving forward, the line will operate only in downhill mode to bring water back from the SWRF when all the produced reclaim is not being used.
 - Black Mountain reclaim system is being modified. The ponds once used as storage are being shut down. One pond is already closed, plan to shut down the second by 2022.
- Potable water projects:
 - Reviewing design plans and preparing for infrastructure construction in West Henderson. Coordinating with multiple engineering companies to build largescale infrastructure, such pump stations.

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

- A. Water Quality Standards update: Selenium project is progressing well. A meeting is scheduled with EPA on 11/19 to discuss existing fish tissue data and proposed methodology for developing site-specific standards for Las Vegas Wash.
- B. MS4 Permit update: The draft permit is still being reviewed by the NDEP BWPC Bureau Chief 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.

9. MEMBER VACANCIES

A. Virgin Valley Water District – 1 member vacancy

B. City of Las Vegas – 1 alternate vacancy; 1 member vacancy

10. COMMENTS BY THE GENERAL PUBLIC - None

11. SCHEDULE NEXT MEETING

The next meeting will be scheduled on February 3, 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.

12. ADJOURNMENT

The meeting was adjourned at 10:12 am.

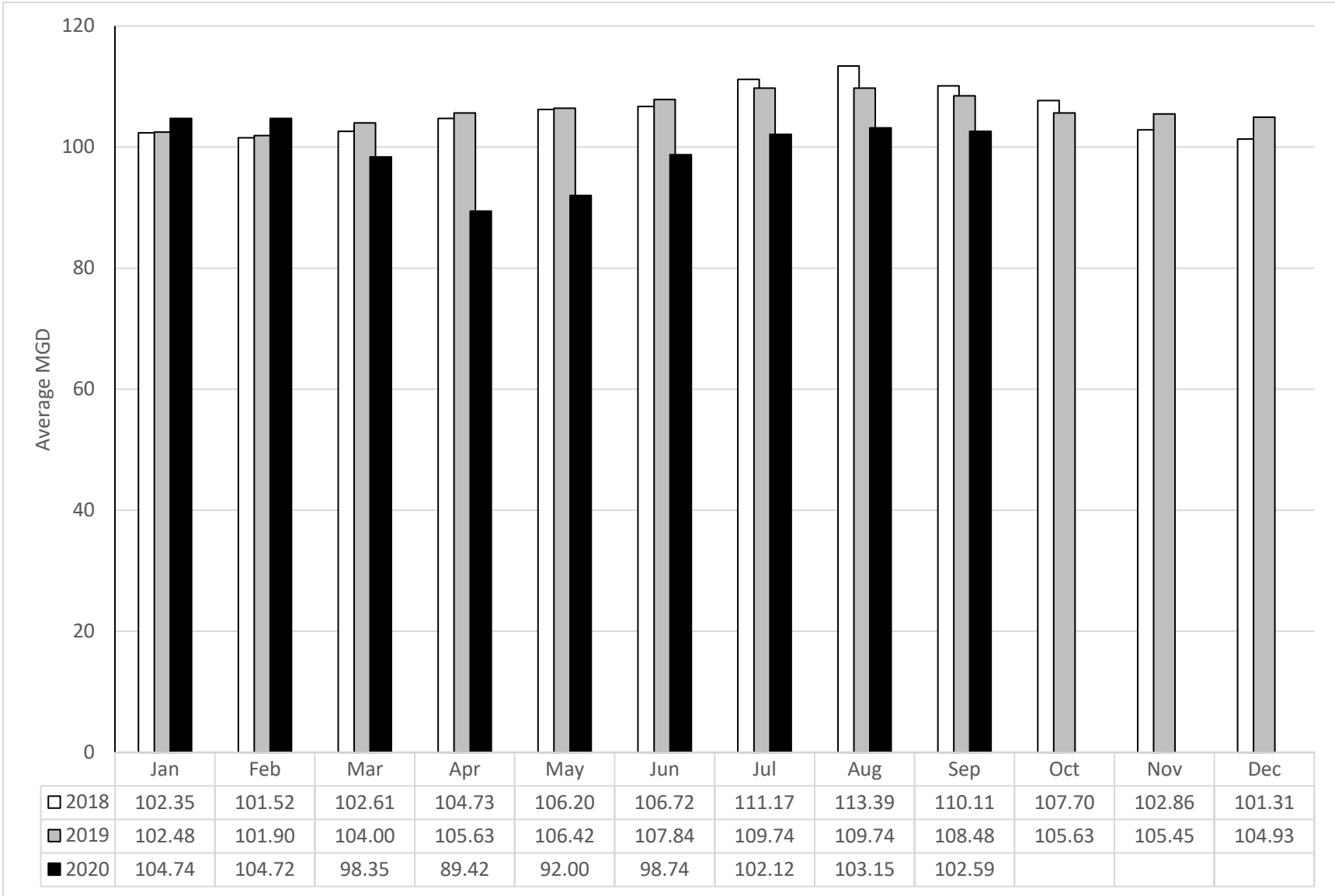
2020
3rd Quarter Flow Report
For
Clark County Sewage
And
Wastewater Advisory
Committee
(SWAC)

November 3, 2020

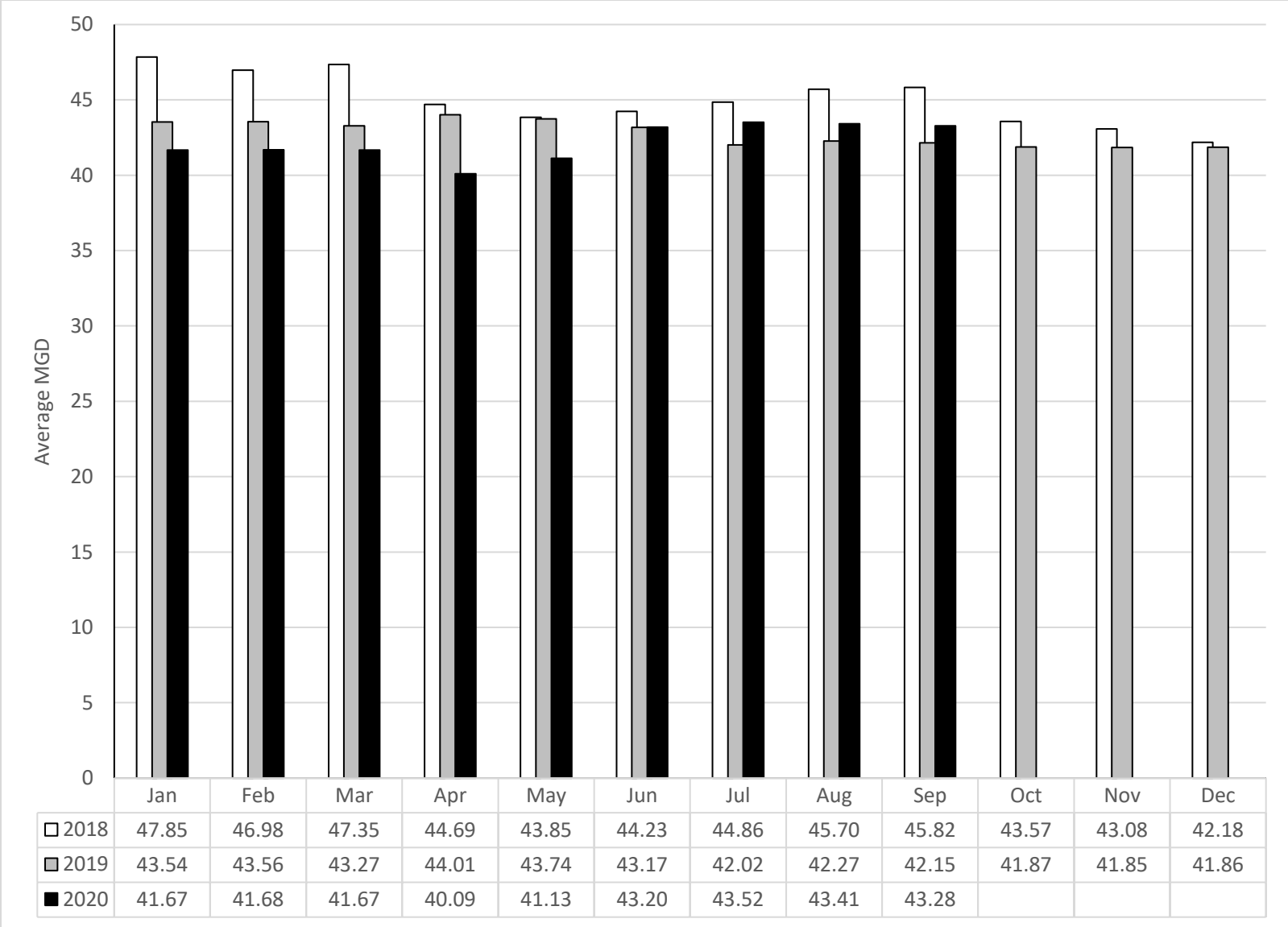
Wastewater Flows

2018 through 2020

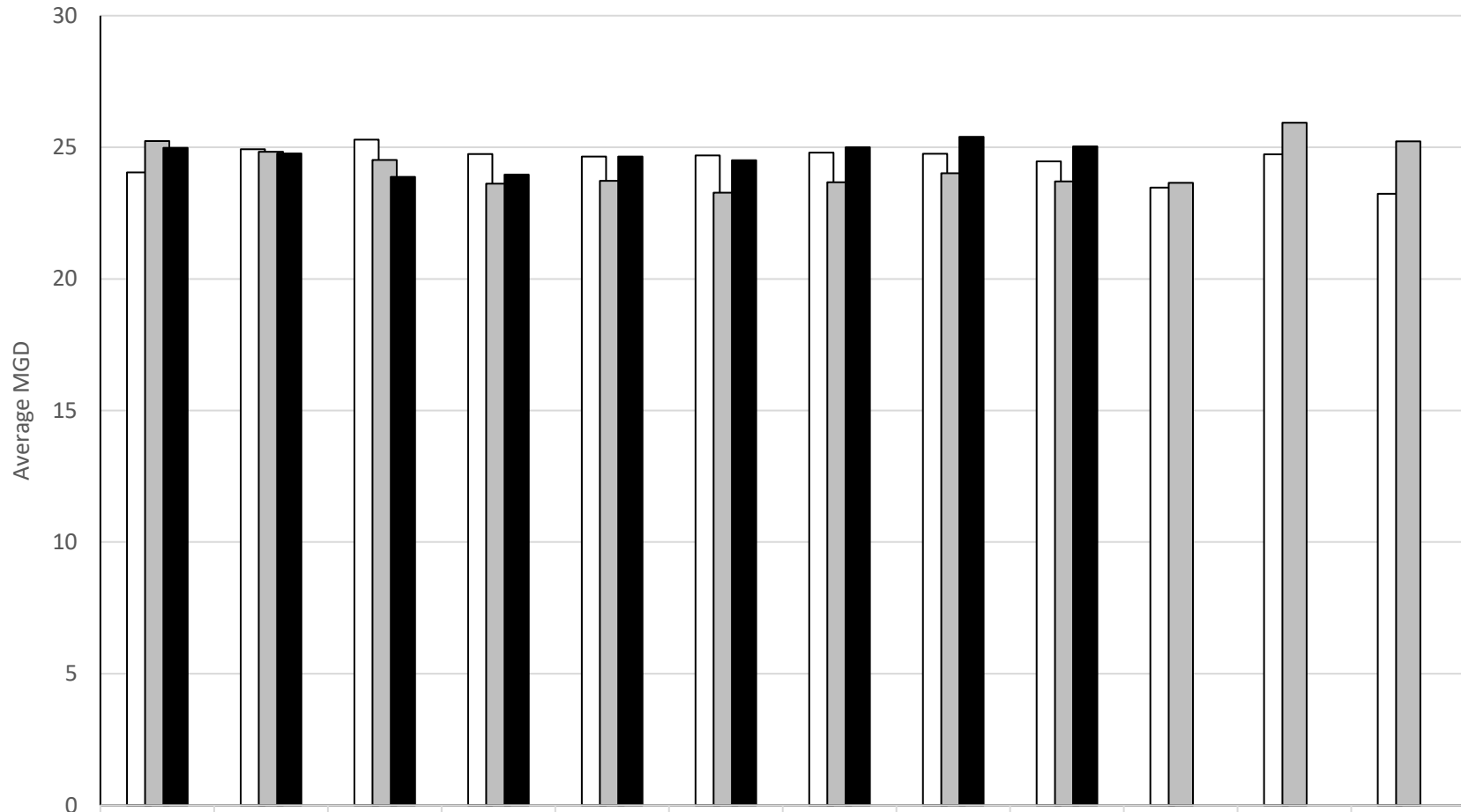
Clark County Water Reclamation District Wastewater Flows



City of Las Vegas Wastewater Flows

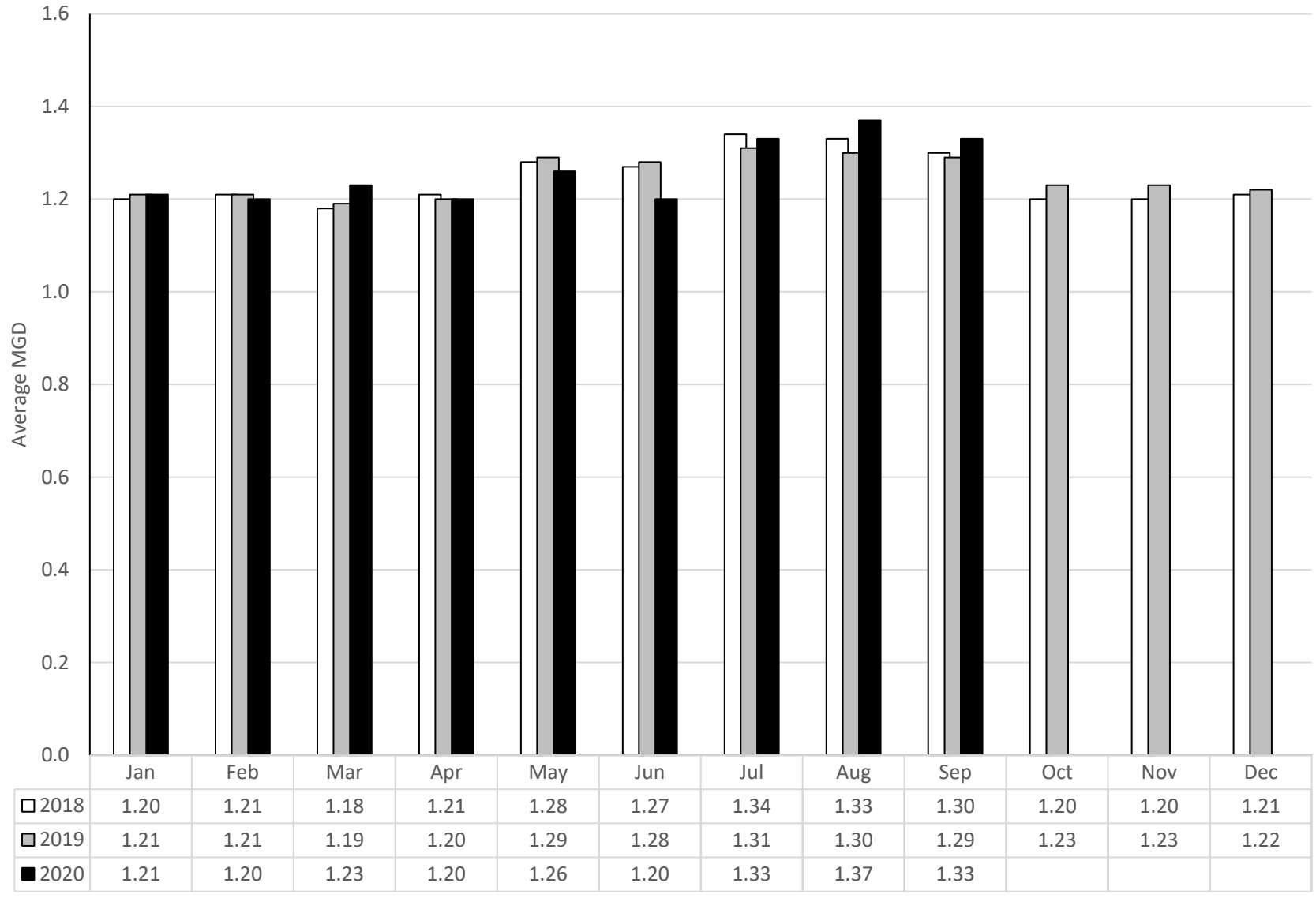


City of Henderson Wastewater Flows

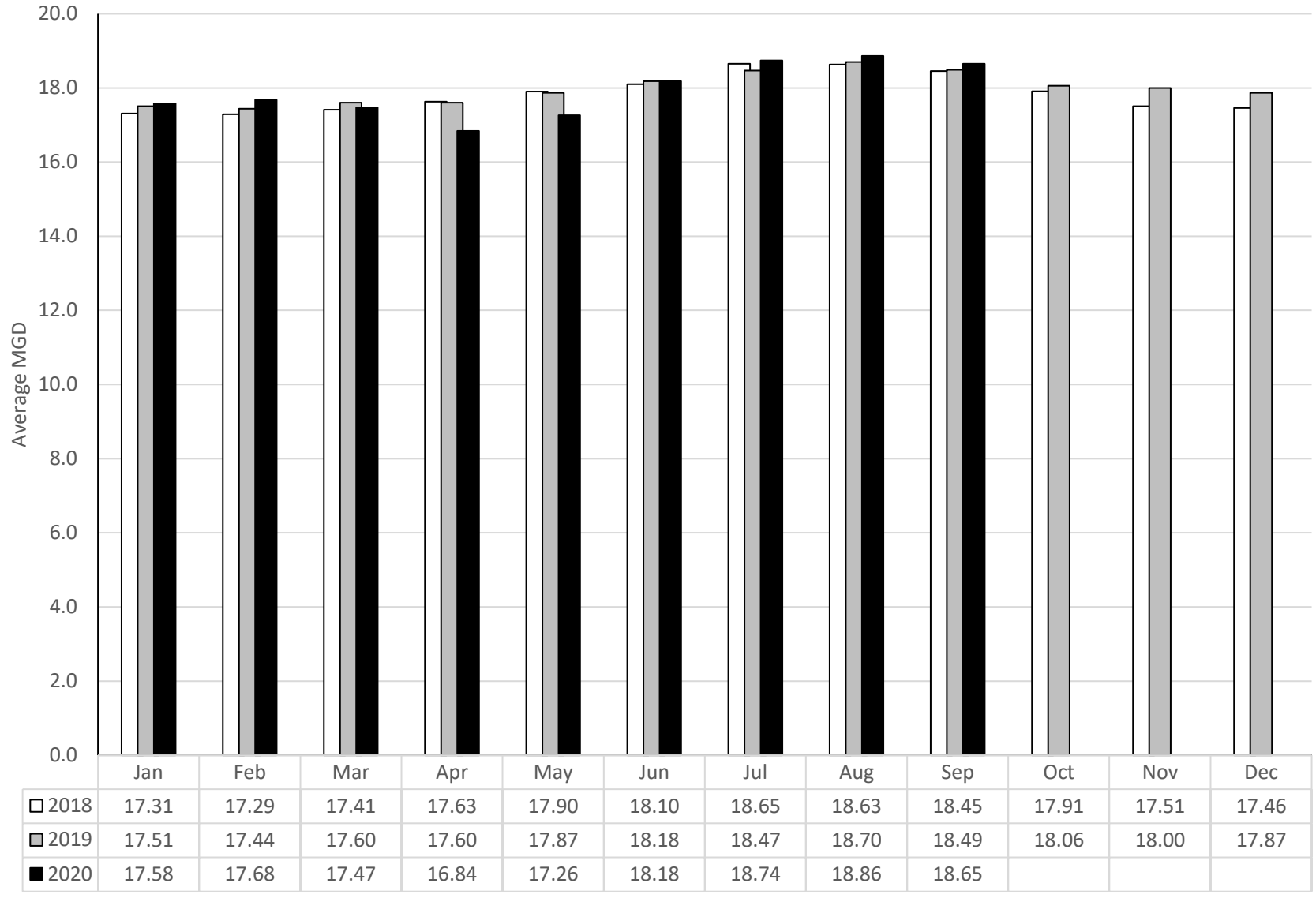


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	24.05	24.93	25.29	24.74	24.65	24.69	24.80	24.75	24.46	23.47	24.73	23.23
2019	25.24	24.83	24.52	23.62	23.72	23.27	23.67	24.01	23.70	23.65	25.93	25.23
2020	24.98	24.77	23.88	23.96	24.65	24.51	25.00	25.40	25.03			

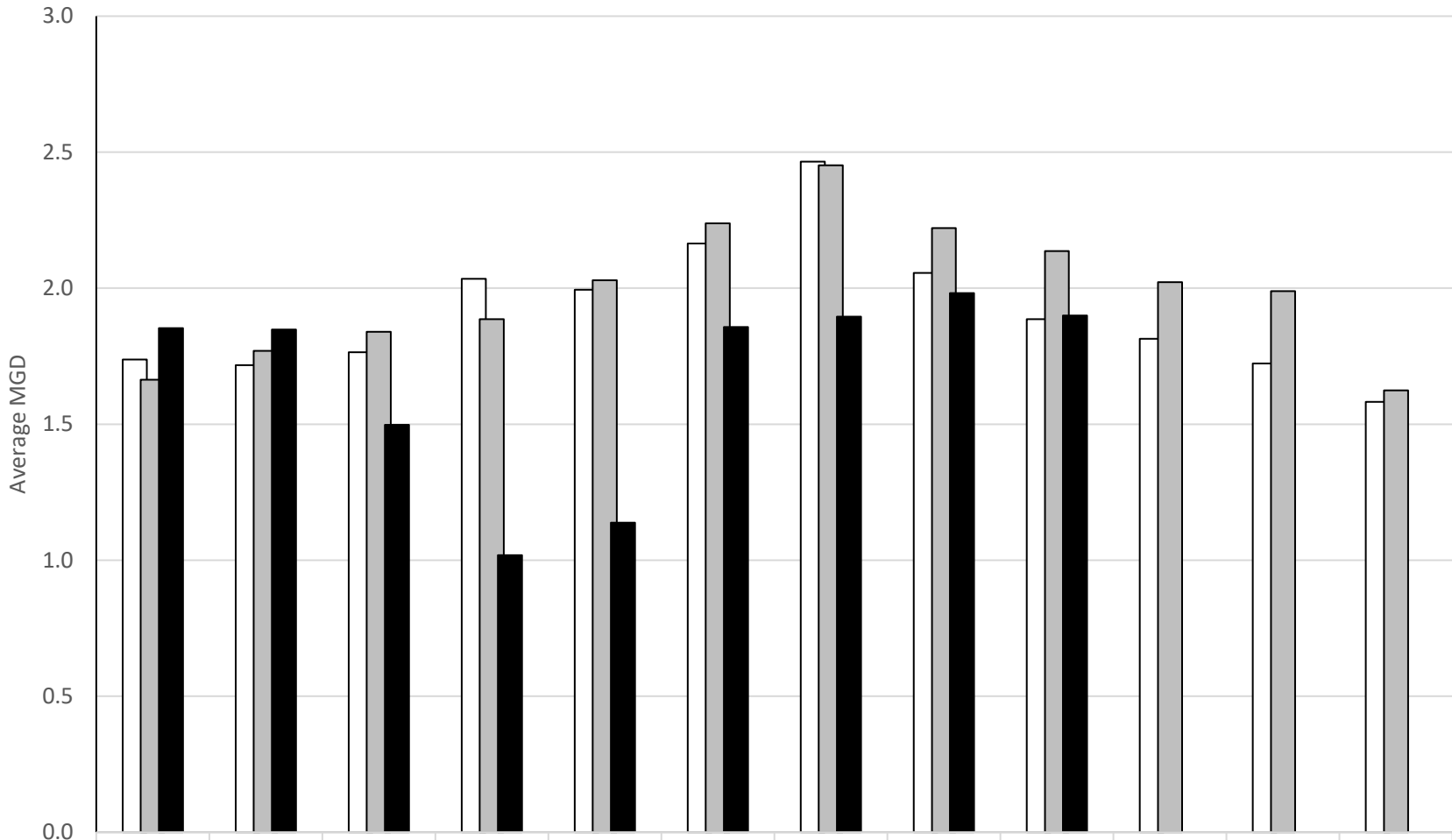
Boulder City Wastewater Flows



City of North Las Vegas Wastewater Flows

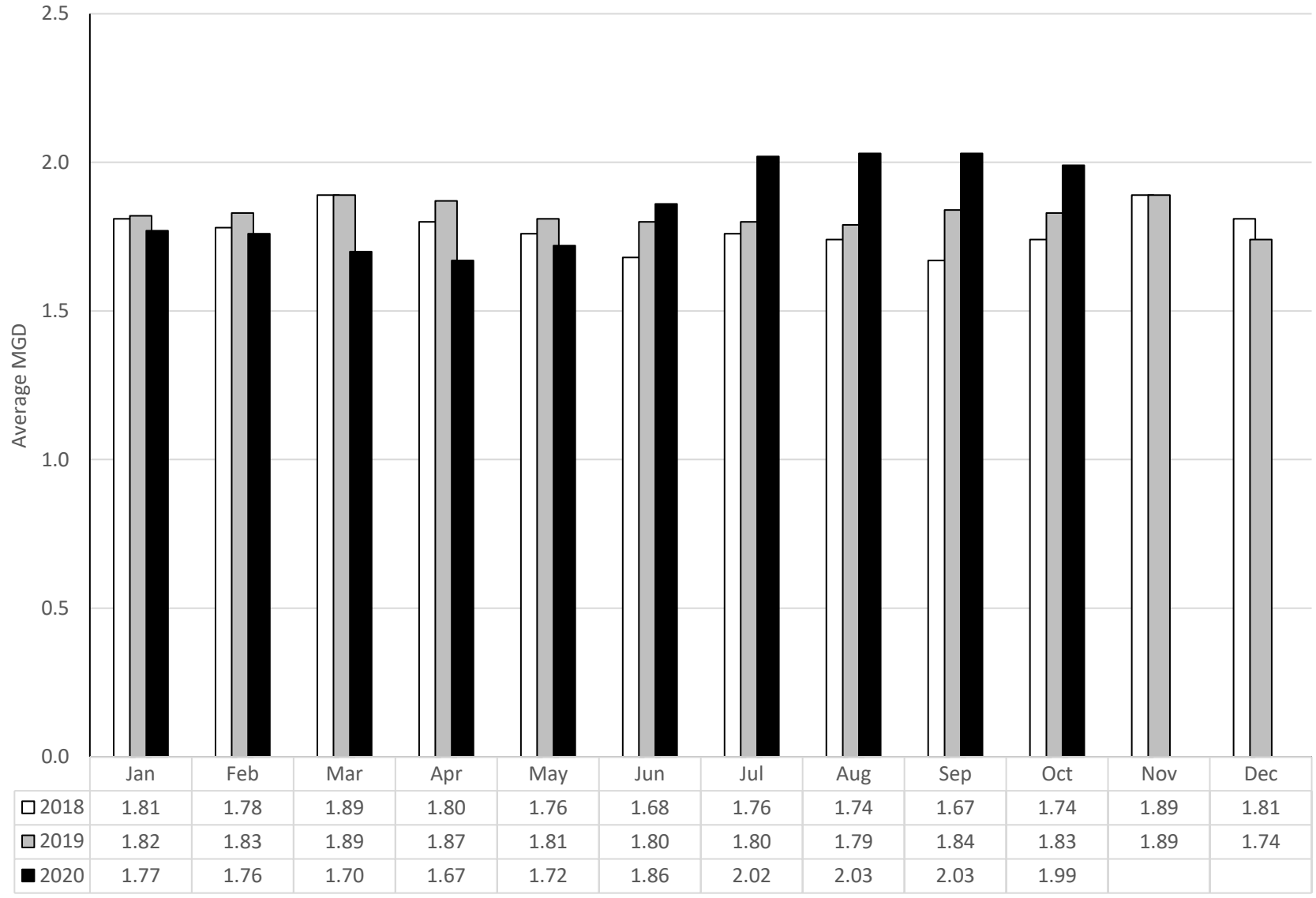


Laughlin Wastewater Flows

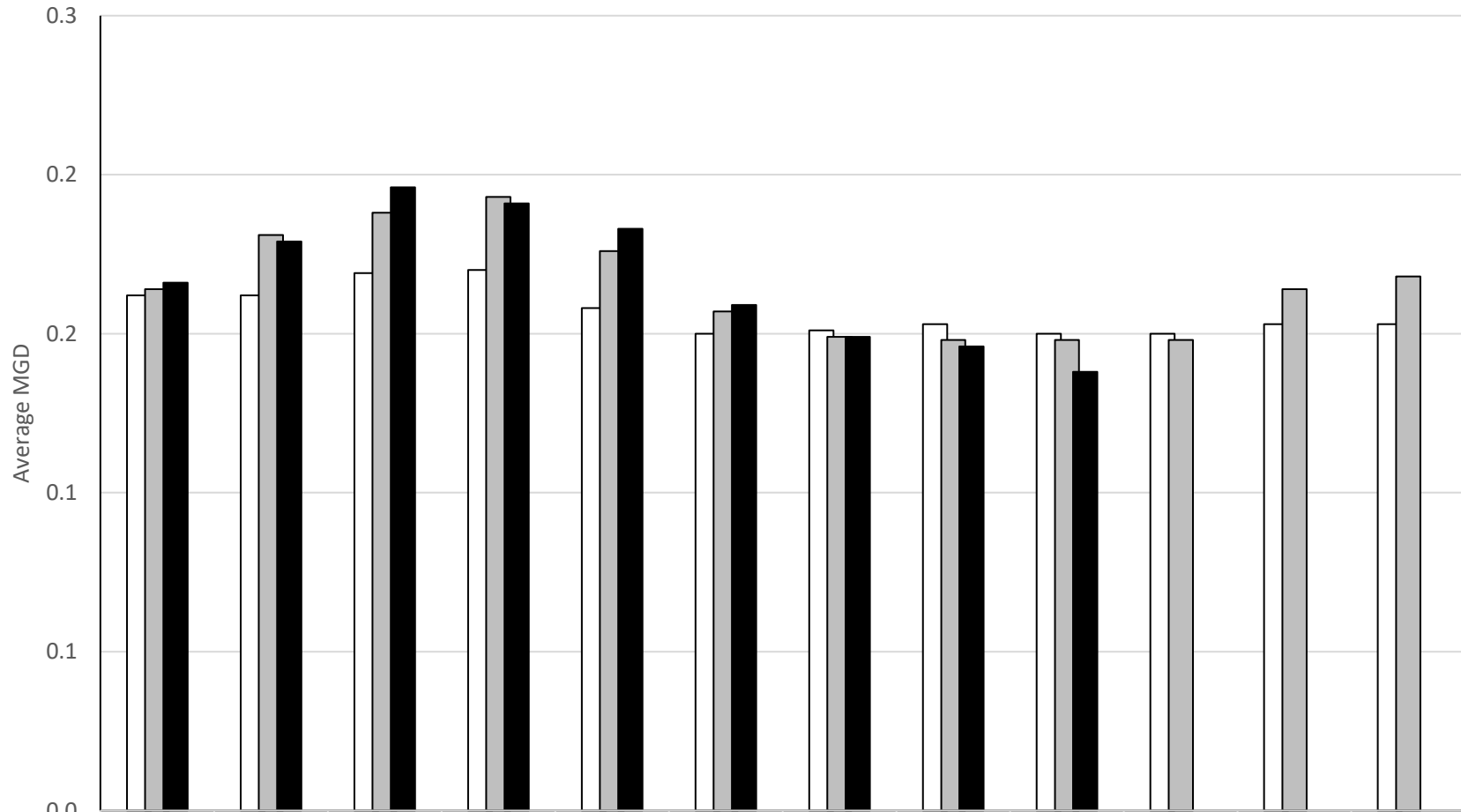


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	1.74	1.72	1.76	2.03	1.99	2.16	2.47	2.06	1.89	1.81	1.72	1.58
2019	1.66	1.77	1.84	1.89	2.03	2.24	2.45	2.22	2.14	2.02	1.99	1.62
2020	1.85	1.85	1.50	1.02	1.14	1.86	1.90	1.98	1.90			

City of Mesquite Wastewater Flows



Moapa Wastewater Flows

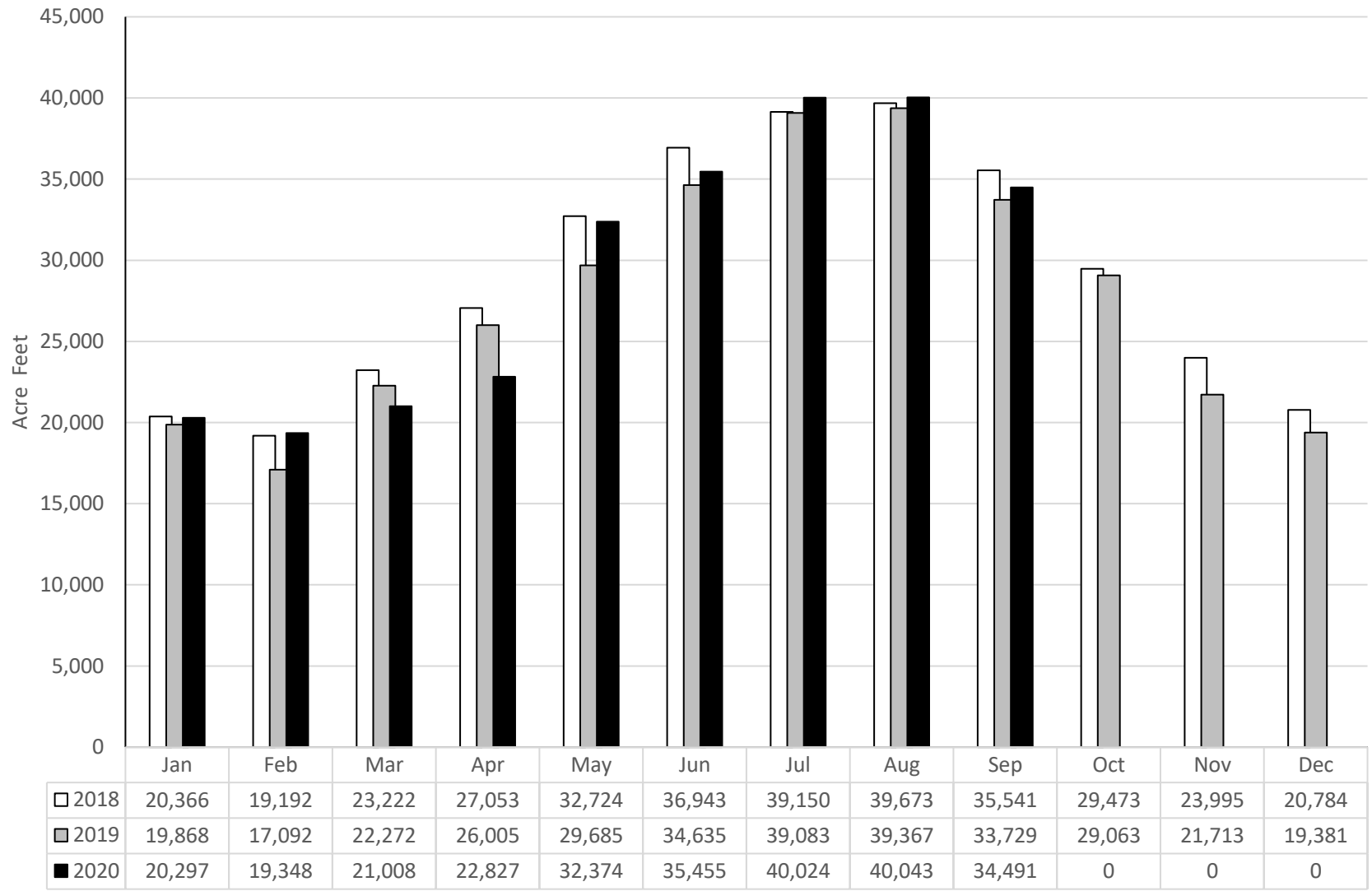


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	0.162	0.162	0.169	0.170	0.158	0.150	0.151	0.153	0.150	0.150	0.153	0.153
2019	0.164	0.181	0.188	0.193	0.176	0.157	0.149	0.148	0.148	0.148	0.164	0.168
2020	0.166	0.179	0.196	0.191	0.183	0.159	0.149	0.146	0.138			

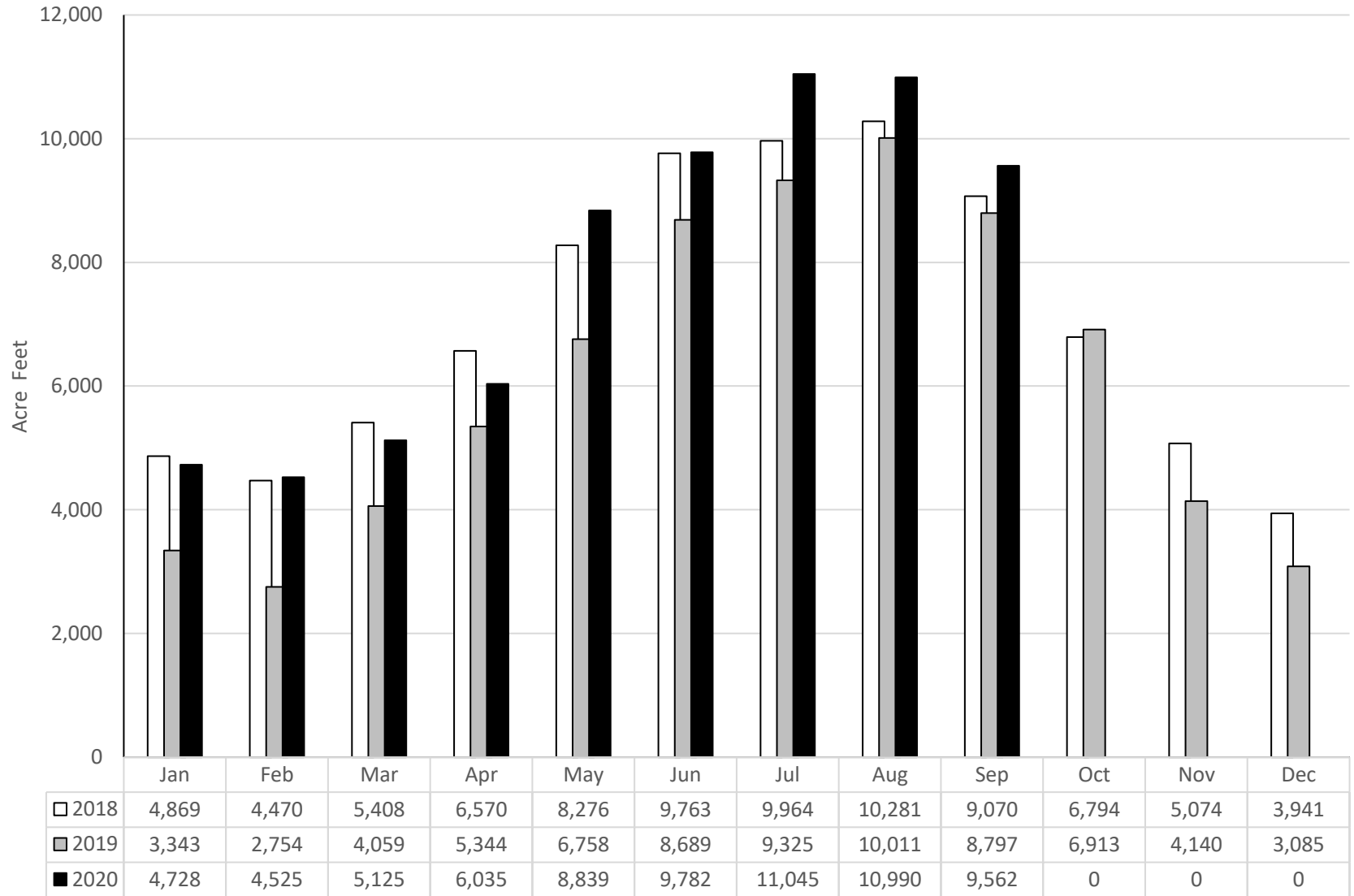
Water Production

2018 through 2020

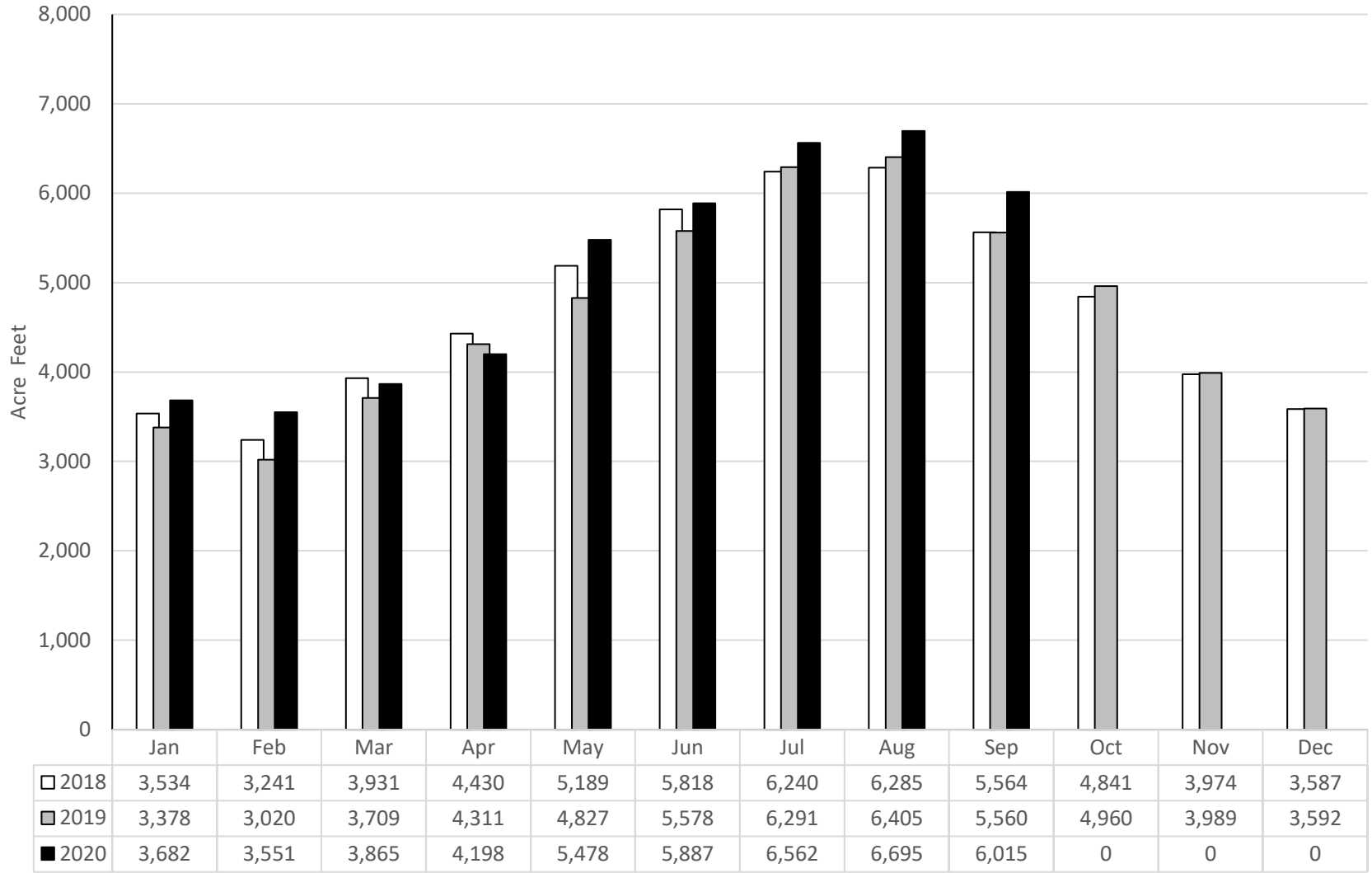
Las Vegas Valley Water District Water Production



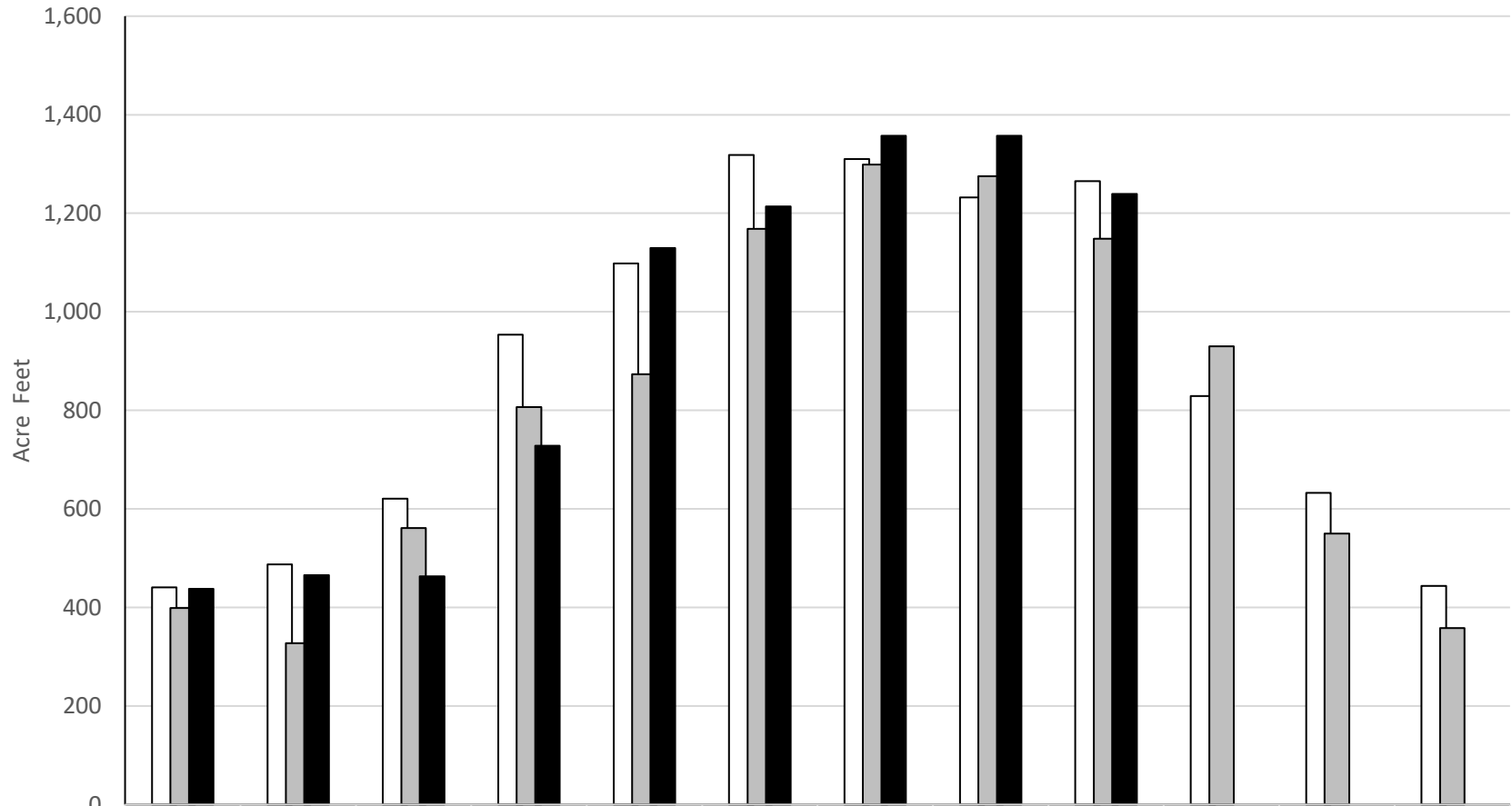
City of Henderson Water Production



City of North Las Vegas Water Production

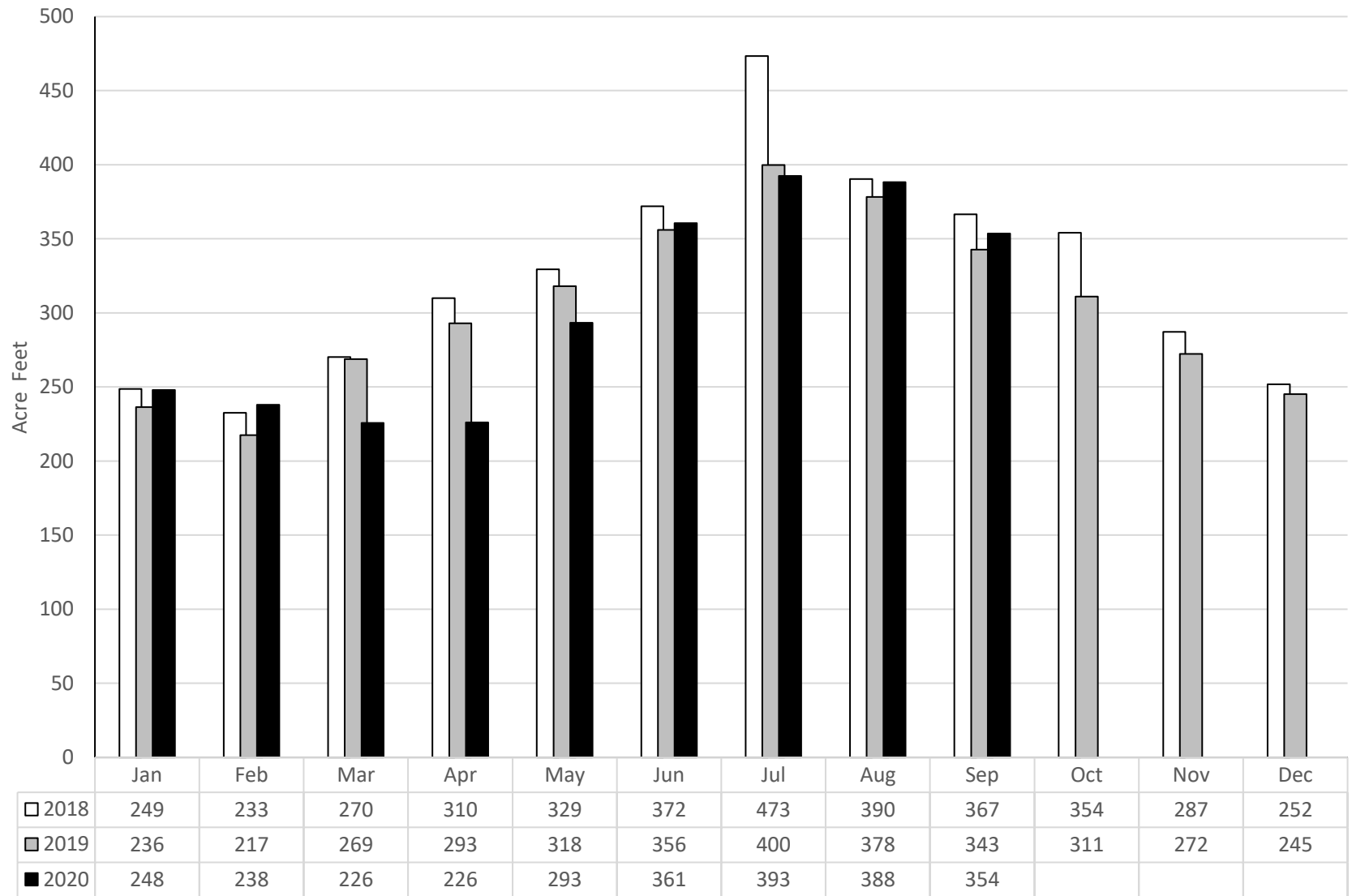


Boulder City Water Production

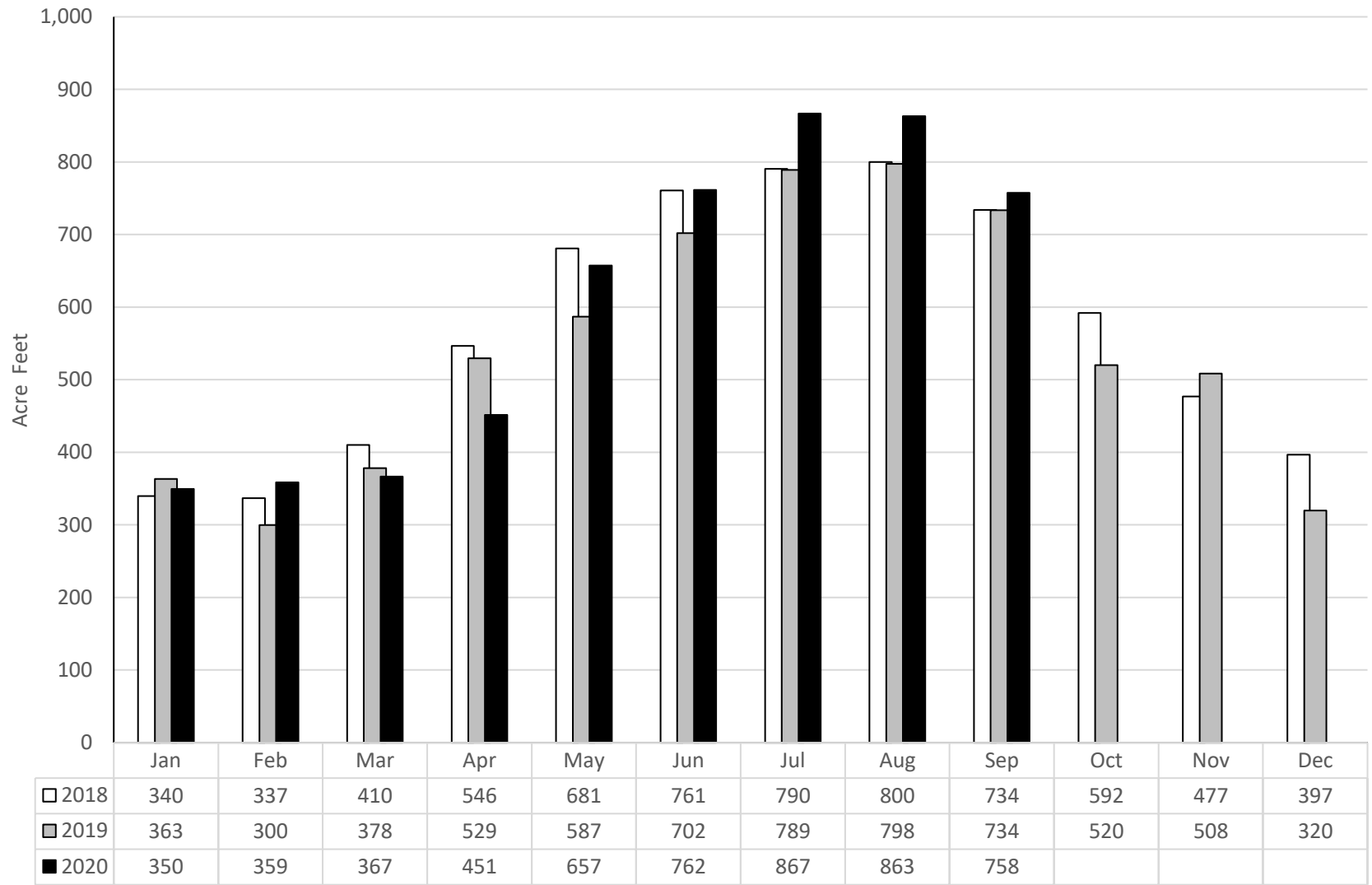


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
□ 2018	441	487	621	954	1,098	1,318	1,310	1,232	1,265	829	633	444
■ 2019	399	327	561	807	874	1,168	1,299	1,275	1,149	930	550	358
■ 2020	438	466	463	728	1,129	1,214	1,357	1,357	1,239	0	0	0

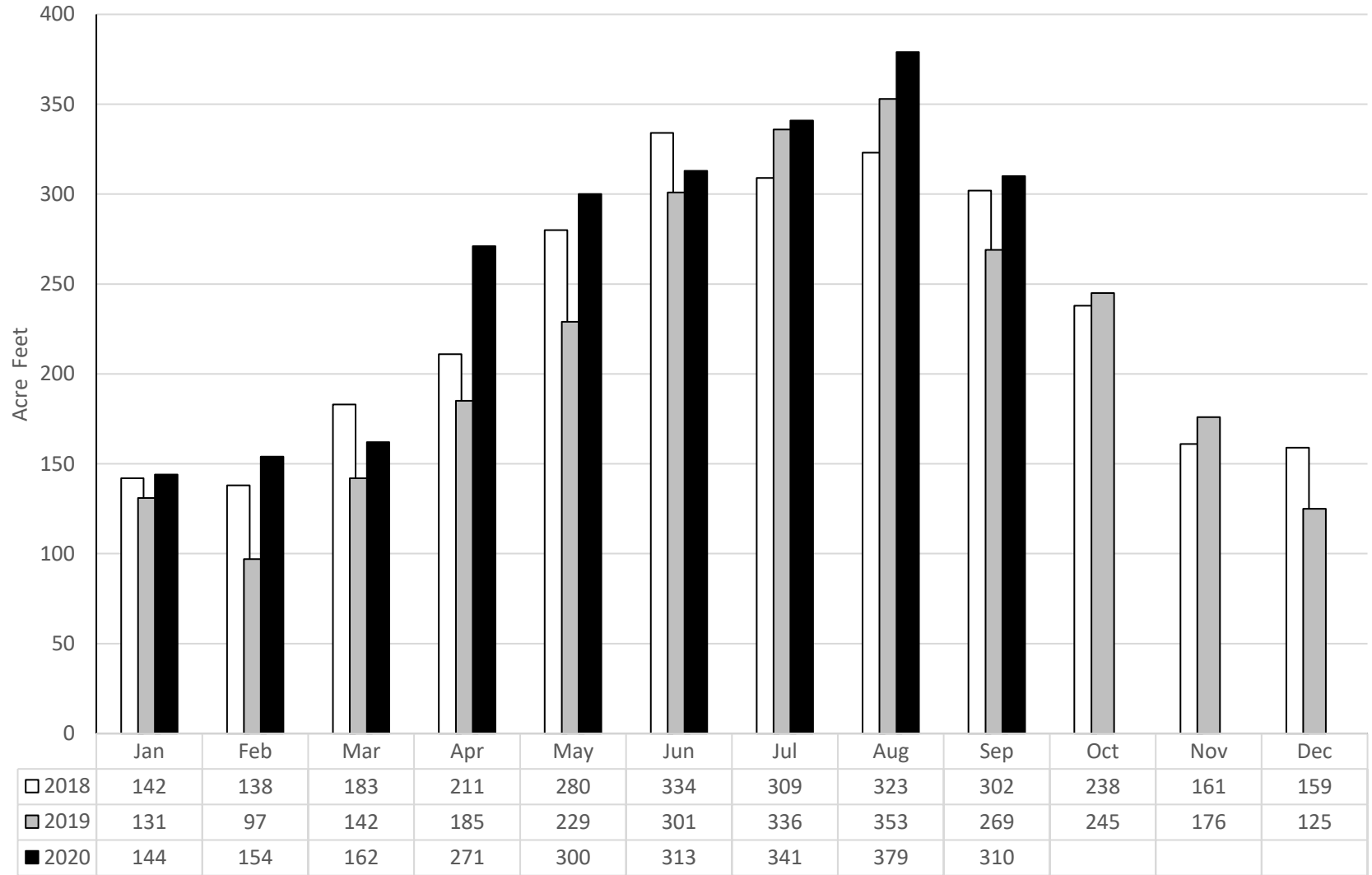
Big Bend Water District Water Production



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		43.57	41.87		17.91	18.06		23.47	23.65		1.20	1.23	
Nov	102.86	105.45		43.08	41.85		17.51	18.00		24.73	25.93		1.20	1.23	
Dec	101.31	104.93		42.18	41.86		17.46	17.87		23.23	25.23		1.21	1.22	
ANNUAL	105.89	106.02	99.54	45.02	42.78	42.18	17.86	17.98	17.92	24.23	24.48	24.69	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	0.025	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		0.014	0.020		0.150	0.148		1.81	2.02		1.74	1.83	1.99	0.108	0.127	
Nov	0.047	0.035		0.016	0.017		0.153	0.164		1.72	1.99		1.89	1.89		0.103	0.120	
Dec	0.043	0.034		0.011	0.017		0.153	0.168		1.58	1.62		1.81	1.74		0.101	0.114	
ANNUAL	0.041	0.039	0.032	0.011	0.013	0.017	0.162	0.165	0.167	2.10	1.99	1.67	1.77	1.75	1.86	0.100	0.103	0.116

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				
Nov				
Dec				
Annual	1.26	0.37	344.20	100.95

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	44.48	0.35	0.00	0.00	0.35	44.13	24.98	4.69	19.09	17.58	0.00	17.58
Feb	104.72	5.54	0.00	5.54	99.18	45.29	0.49	0.00	0.00	0.49	44.80	24.77	4.27	18.92	17.68	0.00	17.68
Mar	98.35	6.13	0.00	6.13	92.22	43.69	0.45	0.00	0.00	0.45	43.24	23.88	3.84	19.02	17.47	0.00	17.47
Apr	89.42	6.60	0.00	6.60	82.82	42.08	1.37	0.00	0.00	1.37	40.71	23.96	6.97	16.12	16.84	0.00	16.84
May	92.00	7.33	0.00	7.33	84.67	42.32	1.89	0.00	0.00	1.89	40.43	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				0.00	0.00					0.00							0.00
Nov				0.00	0.00					0.00							0.00
Dec				0.00	0.00					0.00							0.00
YTD	99.54	7.66	0.00	5.74	68.91	43.47	1.40	0.00	0.00	1.05	42.08	24.69	7.20	16.23	17.92	0.00	13.44

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	191.78	10.74	179.84	1.85	0.00	1.85	17,286
Feb	192.46	10.30	180.58	1.85	0.00	1.85	16,236
Mar	183.39	10.42	171.95	1.50	0.00	1.50	15,436
Apr	172.30	14.94	155.21	1.02	0.00	1.02	13,903
May	176.23	17.64	156.82	1.14	0.00	1.14	14,057.46
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	11.42	168.33	1.90	0.00	1.90	15,149.64
Oct	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00
YTD	1670.54	136.76	1510.95	14.99	0.00	14.99	136919.78

Water Production (2019)

(Totals in AF)

Month	Las Vegas Valley Water District			City of Henderson			City of North Las Vegas			Boulder City			Nellis Air Force Base			Totals	
	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	3,627	1,497	5,125	106	3,759	3,865	130	333	463	12	65	77	224	28,817
Apr	387	22,440	22,827	4,657	1,379	6,035	104	4,094	4,198	245	483	728	76	62	138	567	31,980
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	463	777	1,239	76	108	184	6,377	43,753
Oct			0			0			0			0			0	0	0
Nov			0			0			0			0			0	0	0
Dec			0			0			0			0			0	0	0
YTD	23,584	242,283	265,867	56,791	13,839	70,631	705	45,227	45,932	2,920	5,472	8,392	602	765	1,366	24,890	353,458

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	6,035	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	1,239	367	343	354	734	734	758	302	269	310
Oct	29,473	29,063	0	6,794	6,913	0	4,841	4,960	0	829	930	0	354	311		592	520		238	245	
Nov	23,995	21,713	0	5,074	4,140	0	3,974	3,989	0	633	550	0	287	272		477	508		161	176	
Dec	20,784	19,381	0	3,941	3,085	0	3,587	3,592	0	444	358	0	252	245		397	320		159	125	
ANNUAL	343,312	331,890	265,867	84,107	73,217	70,631	54,481	55,618	45,932	10,650	9,697	8,392	4,043	3,639	2,726	6,535	6,528	5,433	2,892	2,940	2,374

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	#DIV/0!	0.36	0.33	#DIV/0!	0.37	0.35	#DIV/0!	0.16	0.13	#####	0.51	0.62	#DIV/0!	0.47	0.43	#####
Nov	0.61	0.62	#DIV/0!	0.48	0.58	#DIV/0!	0.44	0.42	#DIV/0!	0.23	0.21	#####	0.63	0.67	#DIV/0!	0.57	0.58	#####
Dec	0.70	0.72	#DIV/0!	0.57	0.78	#DIV/0!	0.47	0.47	#DIV/0!	0.25	0.32	#####	0.66	0.63	#DIV/0!	0.64	0.69	#####
AVG.	0.50	0.50	0.45	0.36	0.37	0.29	0.36	0.36	0.33	0.14	0.14	0.13	0.64	0.62	#DIV/0!	0.46	0.46	0.40

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	6,035	2,206	4,198	1,550	728	110	226	94	34,014	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	1,239	122	354	175	51,660	17,749
Oct	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0
YTD	265,867	118,715	70,631	20,684	45,932	15,014	8,392	1,056	2,726	1,394	393,547	156,863

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	253	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 2020	0	0	0	253	0	0	0
Total 2019	0	0	0	0	0	0	0
Total 2018	0	0	0	0	408	0	408