

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 August 26, 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 | |
| Brian Oswald (Member) | | X |
| 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
Gerrity, Dan
Kodweis, Greg

CCWRD
CC District Attorney
SNWA
SNWA

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 9:10 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 FEBRUARY 5, 2020

Howard Analla moved and John Solvie seconded to accept the February 5, 2020 minutes. The motion was unanimously approved.

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

Ebrahim Juma moved and Howard Analla seconded to approve the agenda. The motion was unanimously approved.

5. OPEN MEETING LAW DISCUSSION

Postponed due to technical issues that occurred on the MS Teams platform.

6. COVID WASTEWATER EPIDEMIOLOGY PRESENTATION

- SARS-CoV-2 RNA is detected in feces of infected individuals. Wastewater surveillance looks for fragments of the genetic material to detect the presence of the virus in the community.
- Wastewater surveillance is a potential early warning tool to aid in clinical testing. Wastewater analysis can be completed in real-time (< day) and provide insight into actual conditions in the community.
- Wastewater surveillance confirms that infections in Southern Nevada increased in June/July, which correlated with increased community infection rate. DNA markers accurately characterize conditions in the community.
- Sequencing pooled wastewater samples has the potential identify the dominant genotypes in the community, which can help direct public health mitigation measures.

7. DISCUSSION AND DISTRIBUTION OF QUARTERLY FLOW REPORTS

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

- 2020 tourist contribution to wastewater was dramatically decreased due to COVID-19 restrictions in March through May 2020 than previous years. Lower flow rates were detected in CCWRD and CLV data.
- CCWRD flow rates over a four-day period in March dropped by 20% due to a decrease in tourism caused by the stay-at-home order.
 - CCWRD BOD and TSS dropped by 30%, resulted the influent becoming more dilute. Those lost flows were more concentrated than the average flows. Suggests that flows from the Strip are more concentrated than residential or commercial influent.

8. MEMBER UPDATES

A. Moapa Valley Water District

- N/A

B. Las Vegas Valley Water District

- CLV and SNWA samplers detected trace concentrations of microcysts in Lake Mead. Evaluations are currently underway to detect the toxin.

C. Boulder City

- N/A

D. Virgin Valley Water District

- N/A

E. City of Mesquite

- N/A

F. City of Las Vegas

- Construction project updates:
 - Digester rehabilitation project is 85% complete.
 - Nitrification miscellaneous improvement project is complete.
 - Effluent analyzer upgrade project is complete.
 - Bridge project to connect DI to Hollywood is underway. The bridge will cross the Wash.
 - Solar site security project is 60% complete.
- Projects in design:
 - Process air systems project has just entered the design phase. The project will evaluate the utility of new turbo blower technology before replacing the current blowers.
- Proposal updates:
 - SCADA intergrader project design was awarded to Wunderlich Malec Engineering.
 - RFP to move from current CMMS to a different CMMS has been place on hold.
- Sharon Hardy is the new Laboratory and Compliance Manager.
- Brian Oswalt no longer works for CLV; there is now SWAC member vacancy which be appointed soon.

G. Clark County Water Reclamation District

- Collection System Updates:
 - Rehabilitation of 4 small lift stations is complete. They plan to be deployed after Labor Day.
 - Lincoln and Whitney lift stations are in redesign. Set aside 40 million dollars to rebuild Whitney lift station.
 - NDEP was notified of a 500,000 gallon spill that occurred at Whitney lift station early in 2020. At the requested of NDEP, CCWRD submitted additional information; response is pending.
- Flamingo Plant Updates:
 - CCWRD is anticipating a reduction in user payments (due to COVID-19 impacts), which could potentially impact future CIP projects.
 - Planning to expand the front end of primary and secondary areas of the main plant.
 - Reuse pump station is nearing completion.

- DAFTS rehabilitation project is on-going.
- NPDES permit negotiations are on-going.
- Preparations to rehabilitate the Moapa Valley lift station are underway.

H. City of North Las Vegas

- N/A

I. City of Henderson

- On-going projects:
 - WRF project entered phase 4. The project is expanding the east complex by adding process trains to increase capacity by 8 million gallons/day to allow segments of the west side to be shutdown and rehabilitated.
 - Ultraviolet light disinfection upgrade project is underway.
 - West chemical building is undergoing rehabilitation to address electrical issues.
 - SWRF headworks air treatment system project will replace the air collection piping.
 - Lake Las Vegas lift station is undergoing rehabilitation to add a pump set and rehabilitate various components.
 - The construction of the new Summerhouse lift station at Lake Las Vegas is on-going.
- A project to add new leap aeration to the membrane system is scheduled to begin in October 2020.
- SWRF had problems with activated sludge settling and being cloudy. Identified the cause was due to a breakdown of a pretreatment system from one of their main customers. The system has been repaired.
- Lake Las Vegas lift station 19 was successfully rehabilitated and is back online. Another lift station was taken offline.
- Created Operator 2C position to assist in the oversight of larger projects. A pilot program, running through December, will help finalize the position's requirements and eligibility criteria.
- Unit Supervisor, Paul Gilgens, retired in August 2020.
- WW Operator II is retiring in September 2020.
- Assistant Manager is retiring in October 2020.
- To accommodate the development and projected growth within Henderson, there was a small expansion of the Green Valley reclaim distribution system going towards the SWRF. Additional conditions assessments are being conducted to determine if the system needs a complete rehabilitation.

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

- A. Water Quality Standards update: A presentation was made to NDEP on the efficacy of the existing Selenium data to use for calculating site-specific standards for Las Vegas Wash. NDEP is in concurrence. A meeting is being planned with EPA to present the proposed methodology for approval.
- 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.

10. MEMBER VACANCIES

- A. Virgin Valley Water District – 1 member vacancy
- B. City of Las Vegas – 1 alternate vacancy; 1 member vacancy

11. COMMENTS BY THE GENERAL PUBLIC - None

12. SCHEDULE NEXT MEETING

The next meeting will be scheduled on November 4, 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.

13. ADJOURNMENT

The meeting was adjourned at 10:34 am.

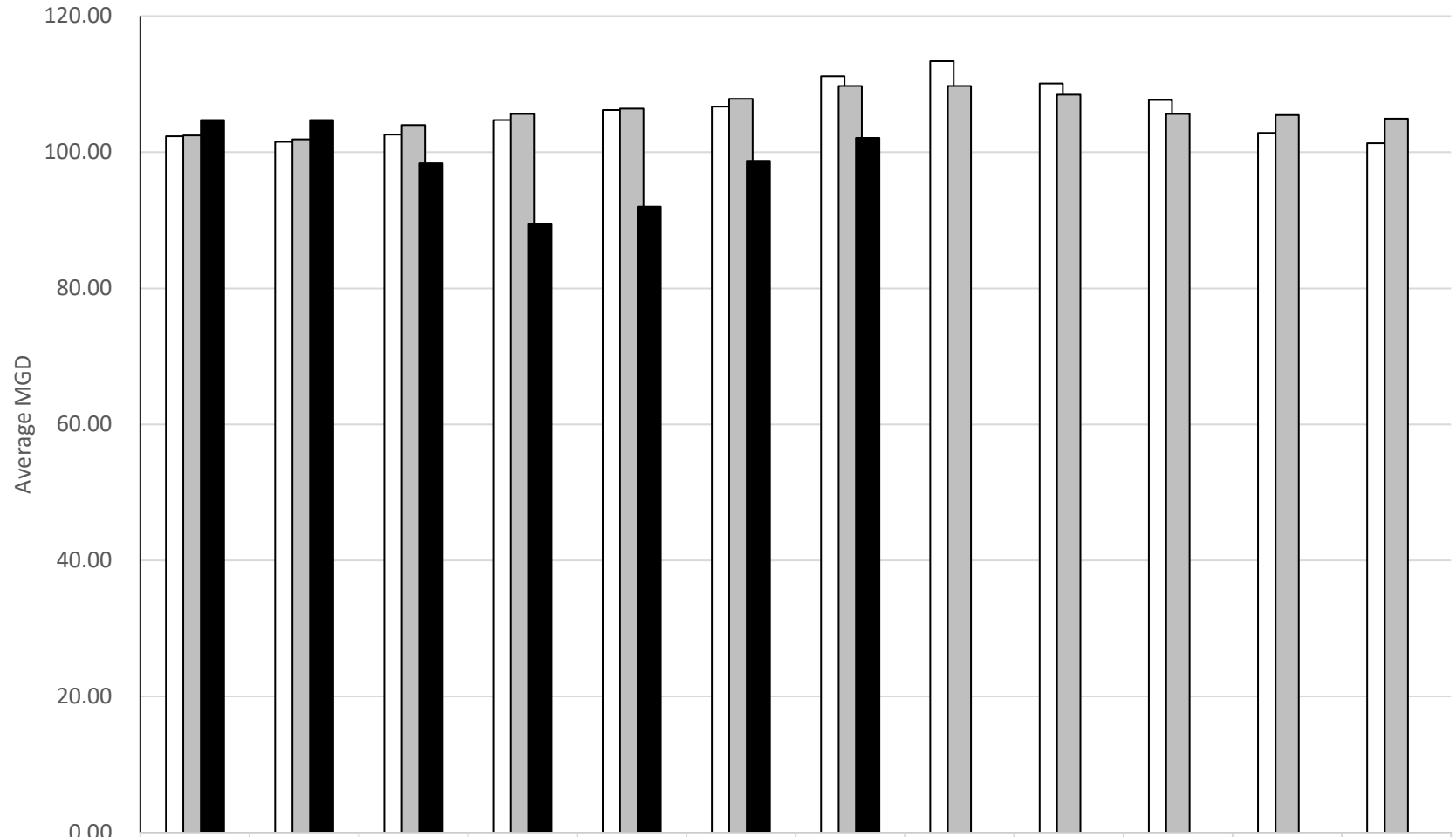
2020
2nd Quarter Flow Report
For
Clark County Sewage
And
Wastewater Advisory
Committee
(SWAC)

August 18, 2020

Wastewater Flows

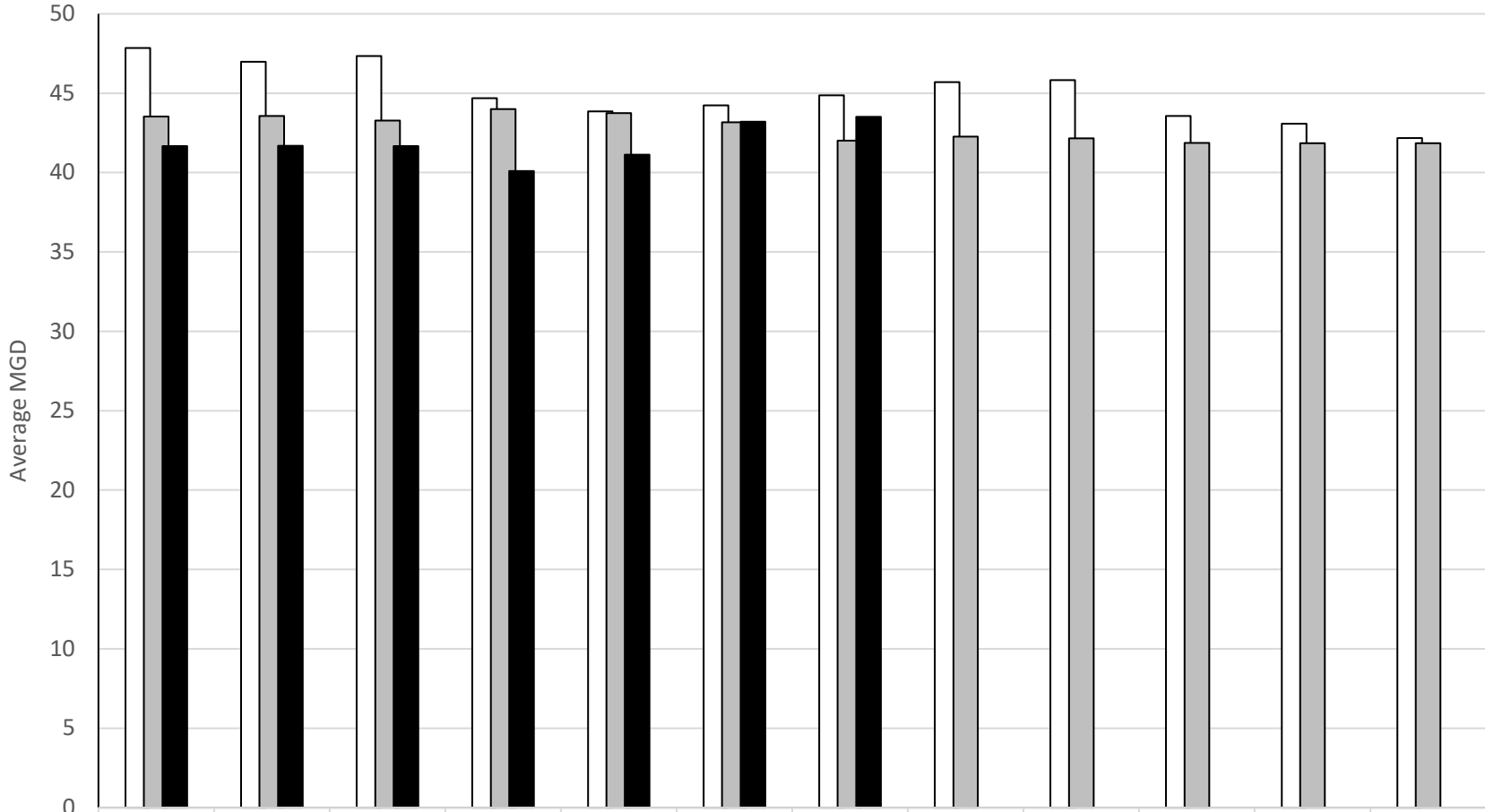
2018 through 2020

Clark County Water Reclamation District Wastewater Flows



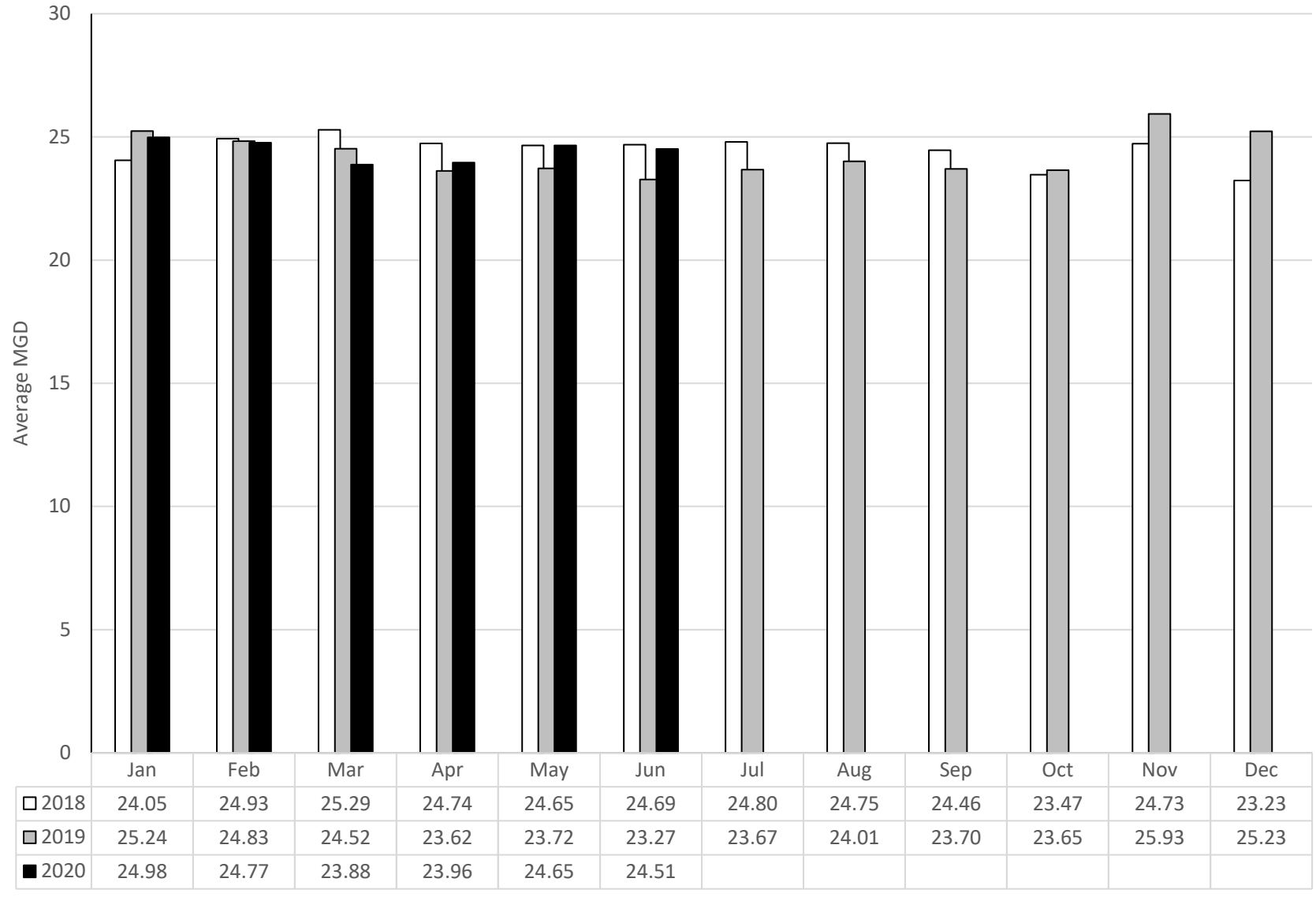
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| □ 2018 | 102.35 | 101.52 | 102.61 | 104.73 | 106.20 | 106.72 | 111.17 | 113.39 | 110.11 | 107.70 | 102.86 | 101.31 |
| ▒ 2019 | 102.48 | 101.90 | 104.00 | 105.63 | 106.42 | 107.84 | 109.74 | 109.74 | 108.48 | 105.63 | 105.45 | 104.93 |
| ■ 2020 | 104.74 | 104.72 | 98.35 | 89.42 | 92.00 | 98.74 | 102.12 | | | | | |

City of Las Vegas Wastewater Flows

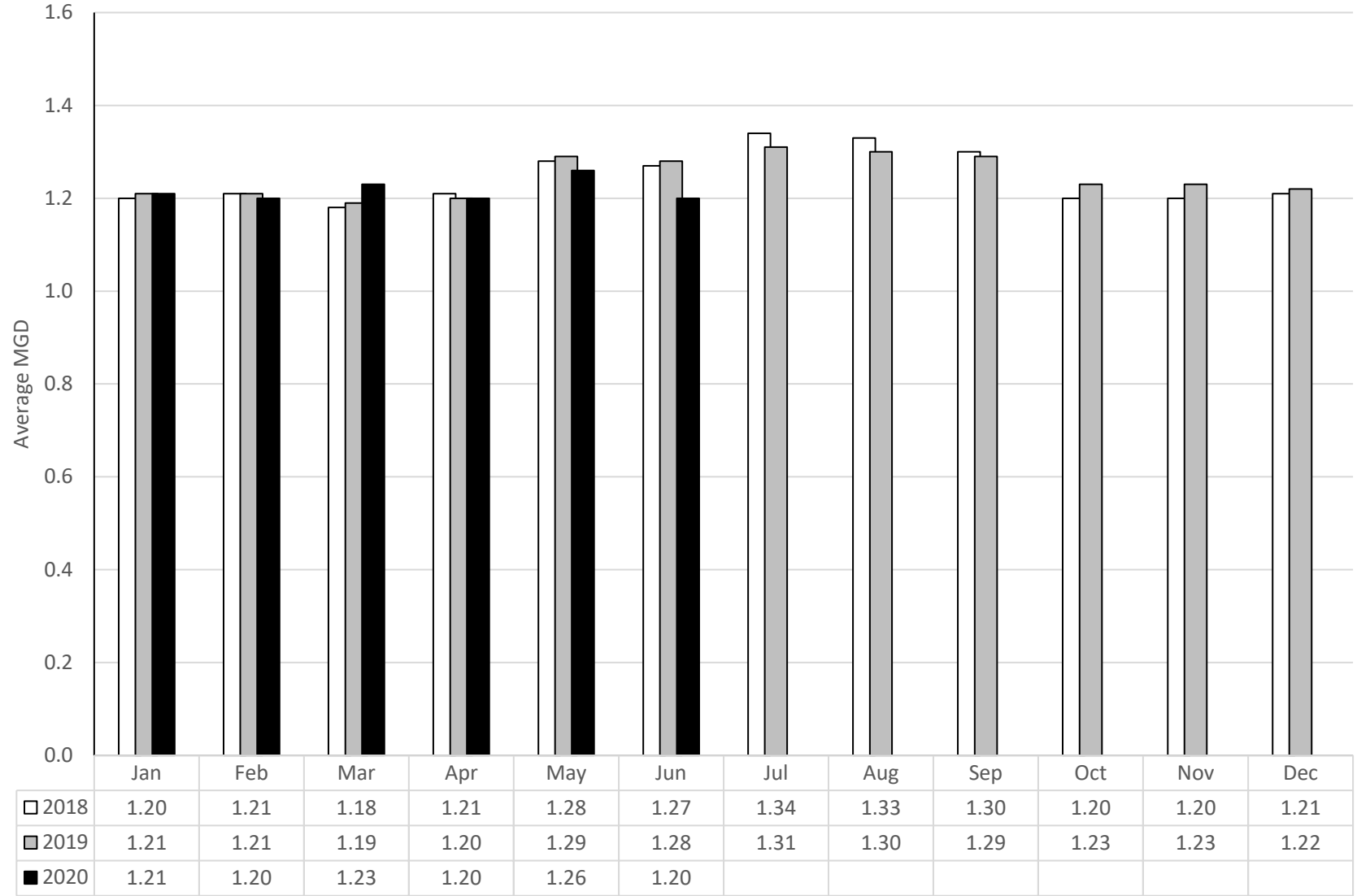


| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| □ 2018 | 47.85 | 46.98 | 47.35 | 44.69 | 43.85 | 44.23 | 44.86 | 45.70 | 45.82 | 43.57 | 43.08 | 42.18 |
| ■ 2019 | 43.54 | 43.56 | 43.27 | 44.01 | 43.74 | 43.17 | 42.02 | 42.27 | 42.15 | 41.87 | 41.85 | 41.86 |
| ■ 2020 | 41.67 | 41.68 | 41.67 | 40.09 | 41.13 | 43.20 | 43.52 | | | | | |

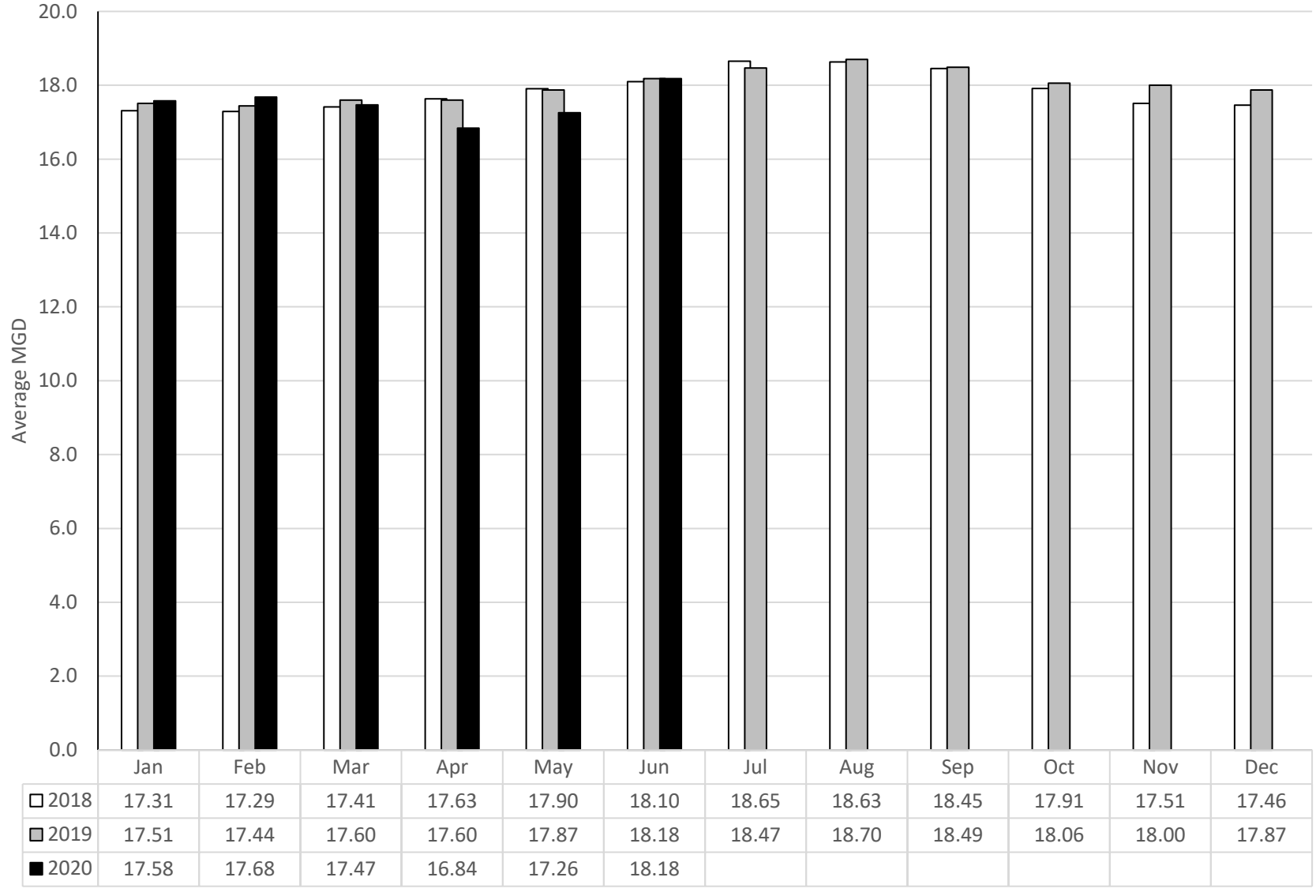
City of Henderson Wastewater Flows



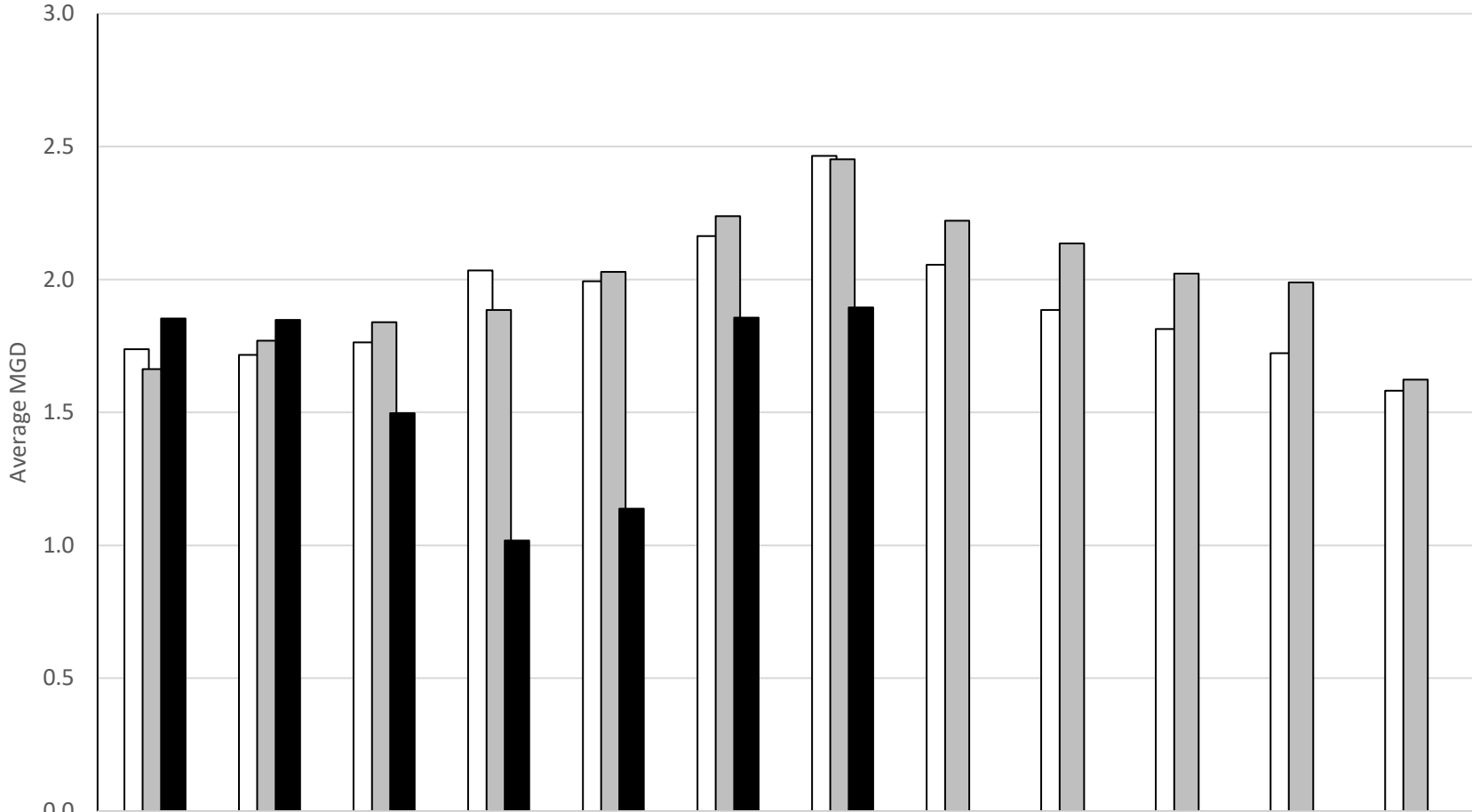
Boulder City Wastewater Flows



City of North Las Vegas Wastewater Flows

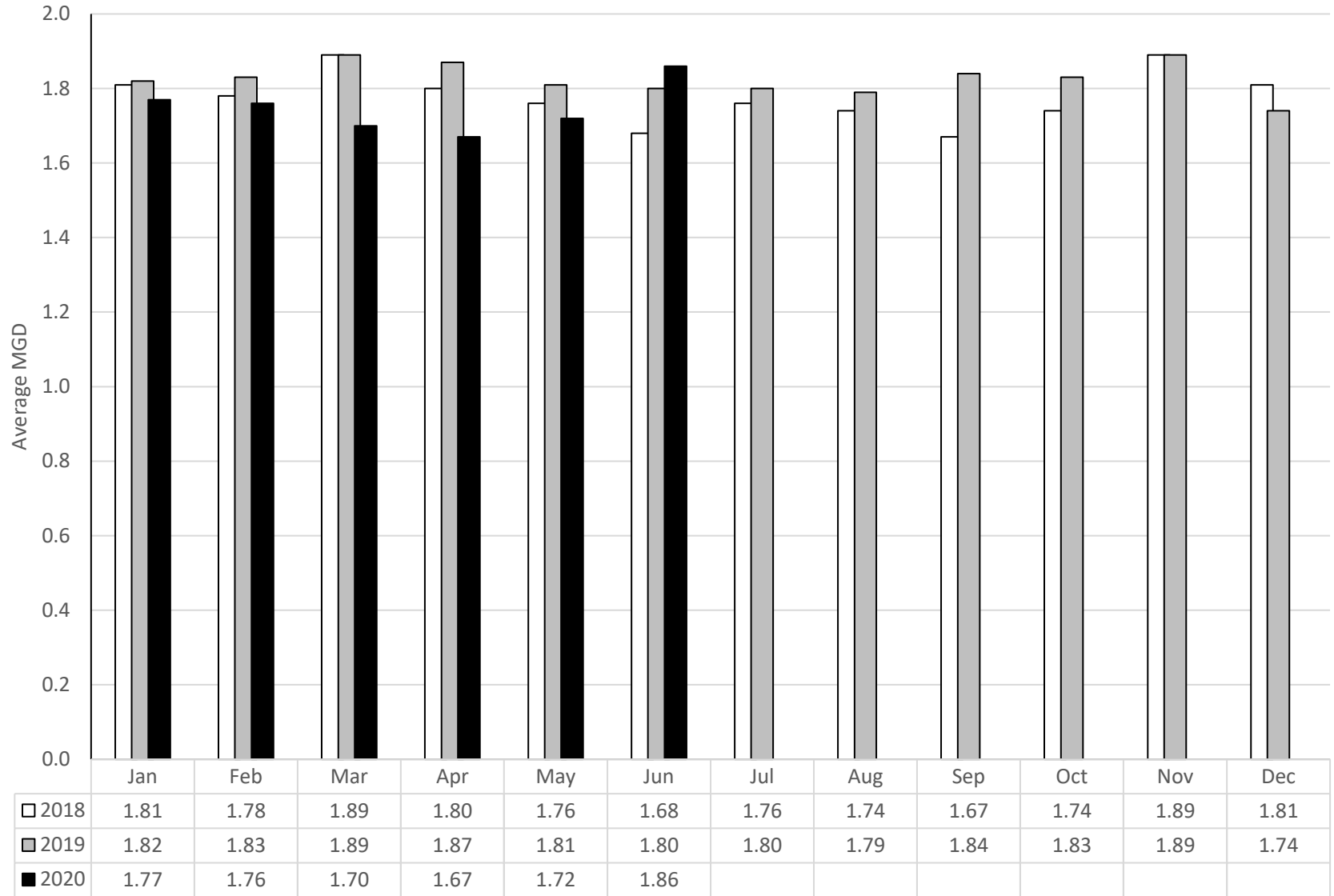


Laughlin Wastewater Flows

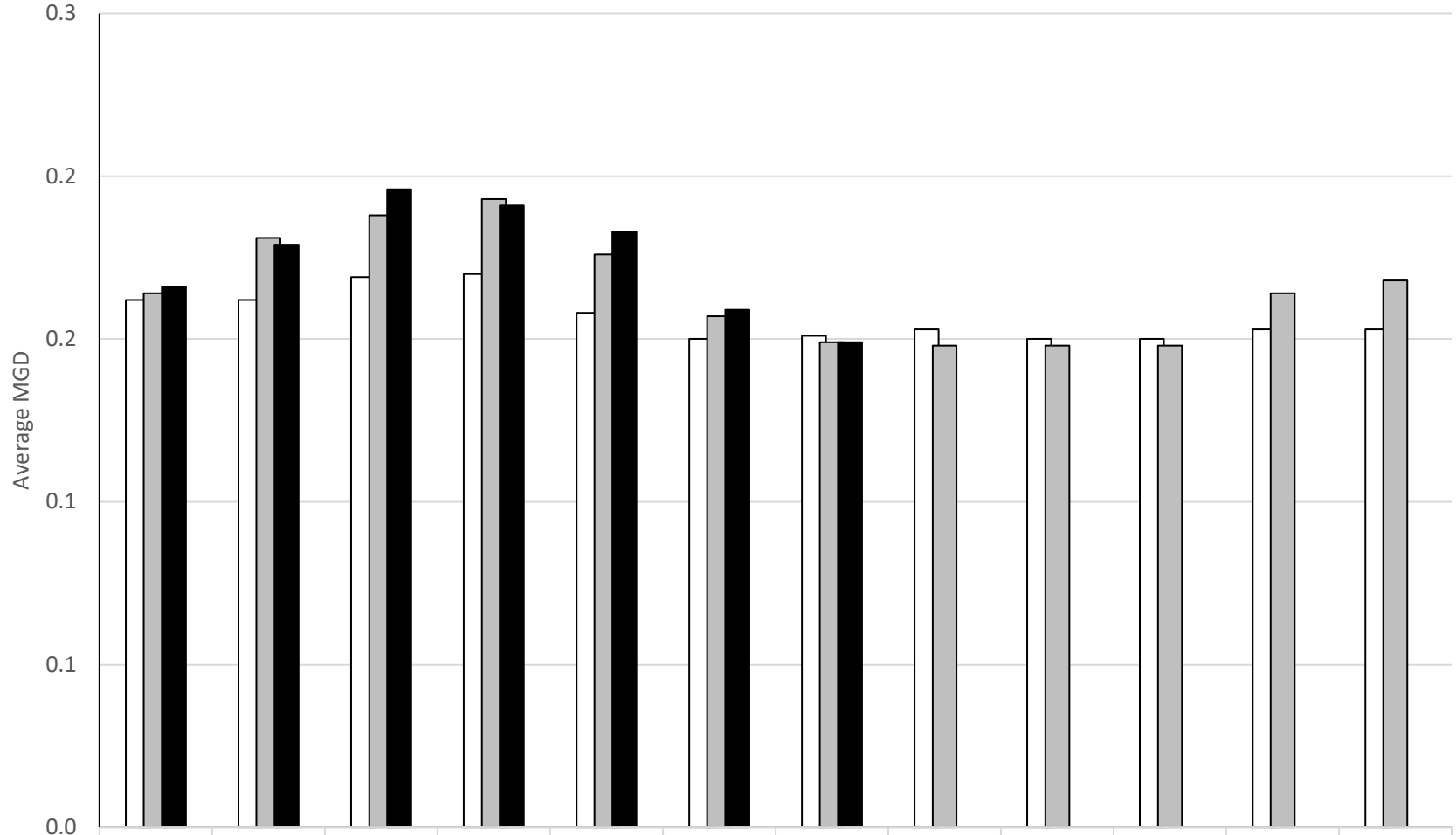


| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|
| □ 2018 | 1.74 | 1.72 | 1.76 | 2.03 | 1.99 | 2.16 | 2.47 | 2.06 | 1.89 | 1.81 | 1.72 | 1.58 |
| ■ 2019 | 1.66 | 1.77 | 1.84 | 1.89 | 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 | | | | | |

City of Mesquite Wastewater Flows



Moapa Wastewater Flows

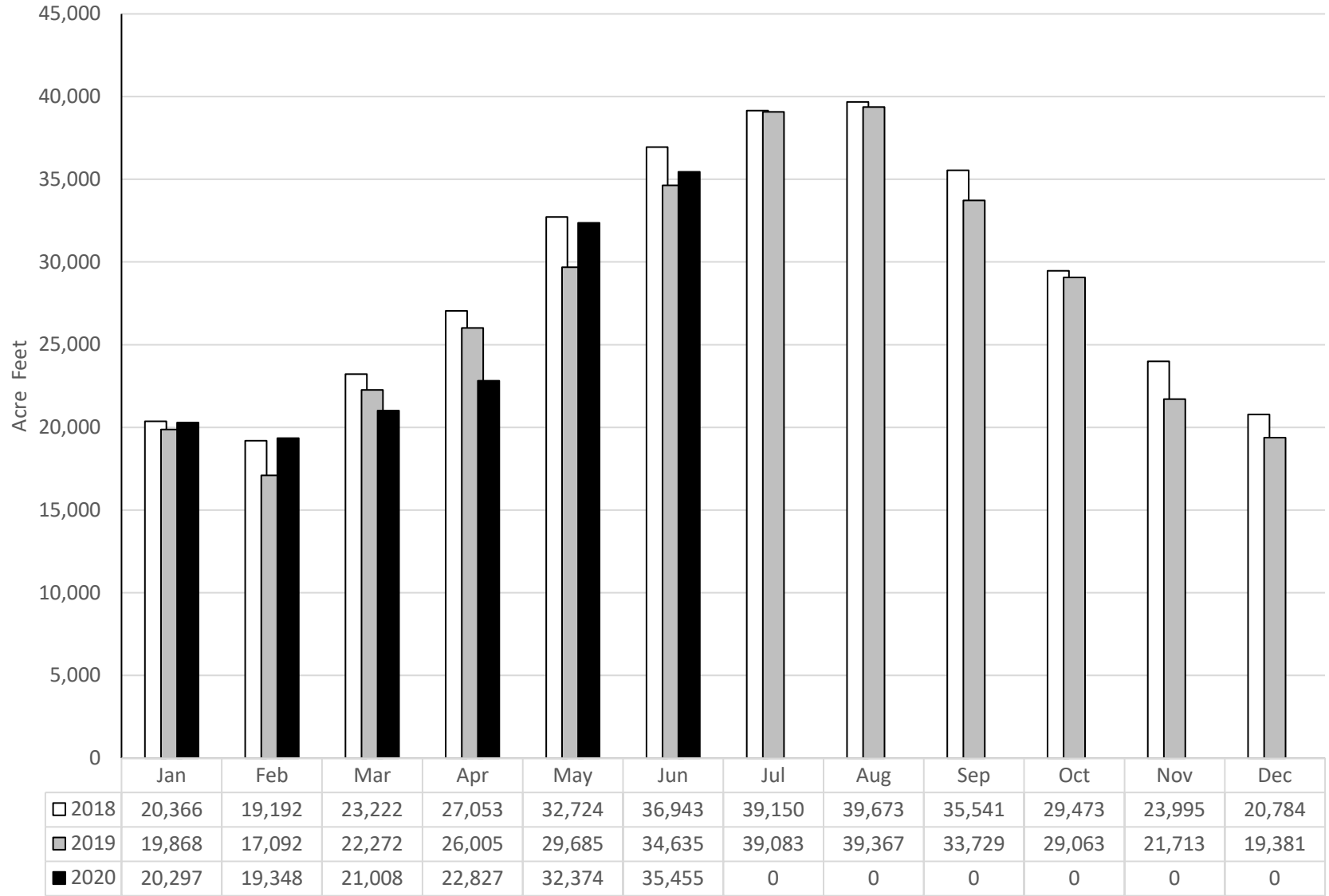


| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2018 | 0.162 | 0.162 | 0.169 | 0.170 | 0.158 | 0.150 | 0.151 | 0.153 | 0.150 | 0.150 | 0.153 | 0.153 |
| 2019 | 0.164 | 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 | | | | | |

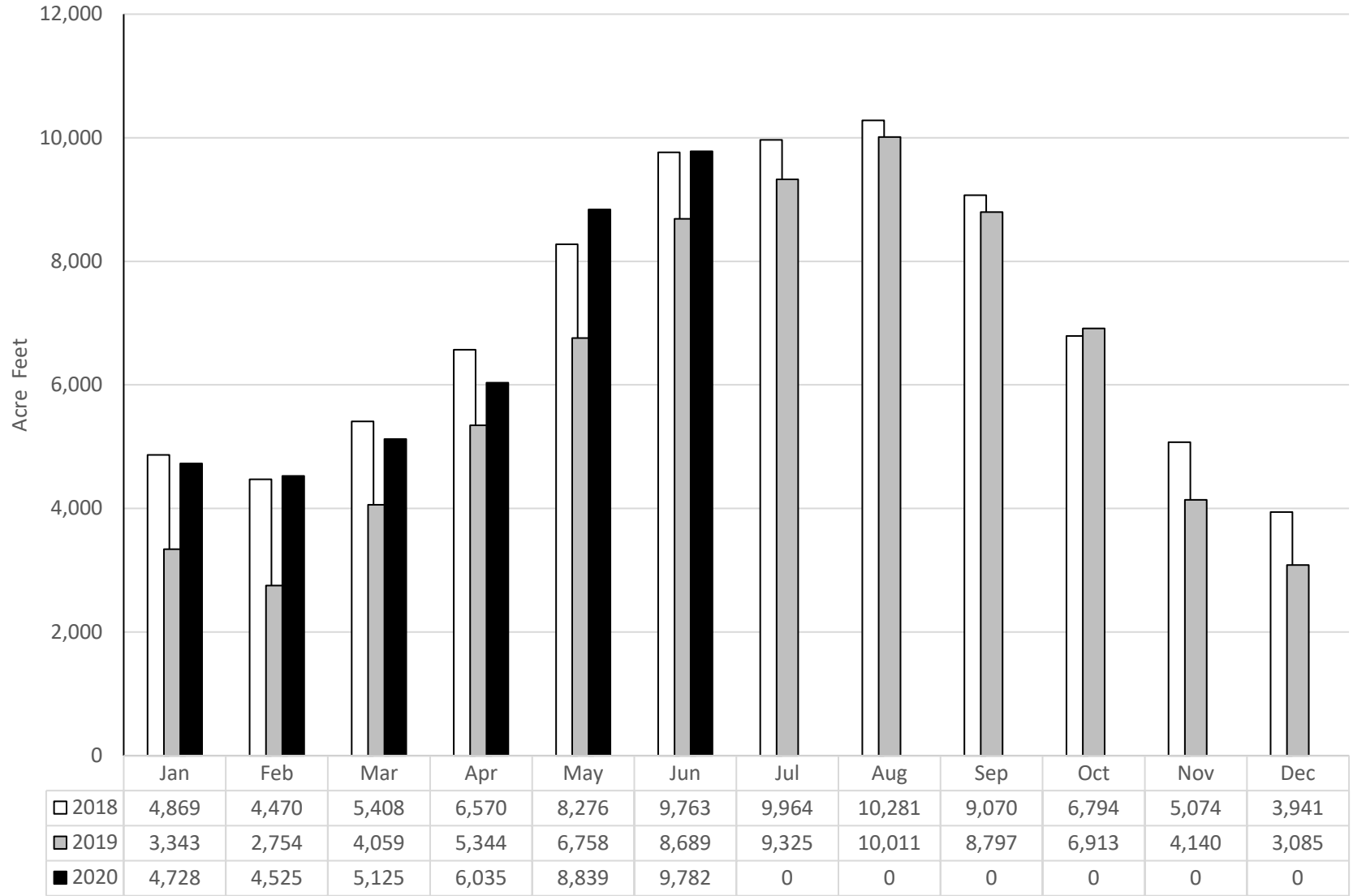
Water Production

2018 through 2020

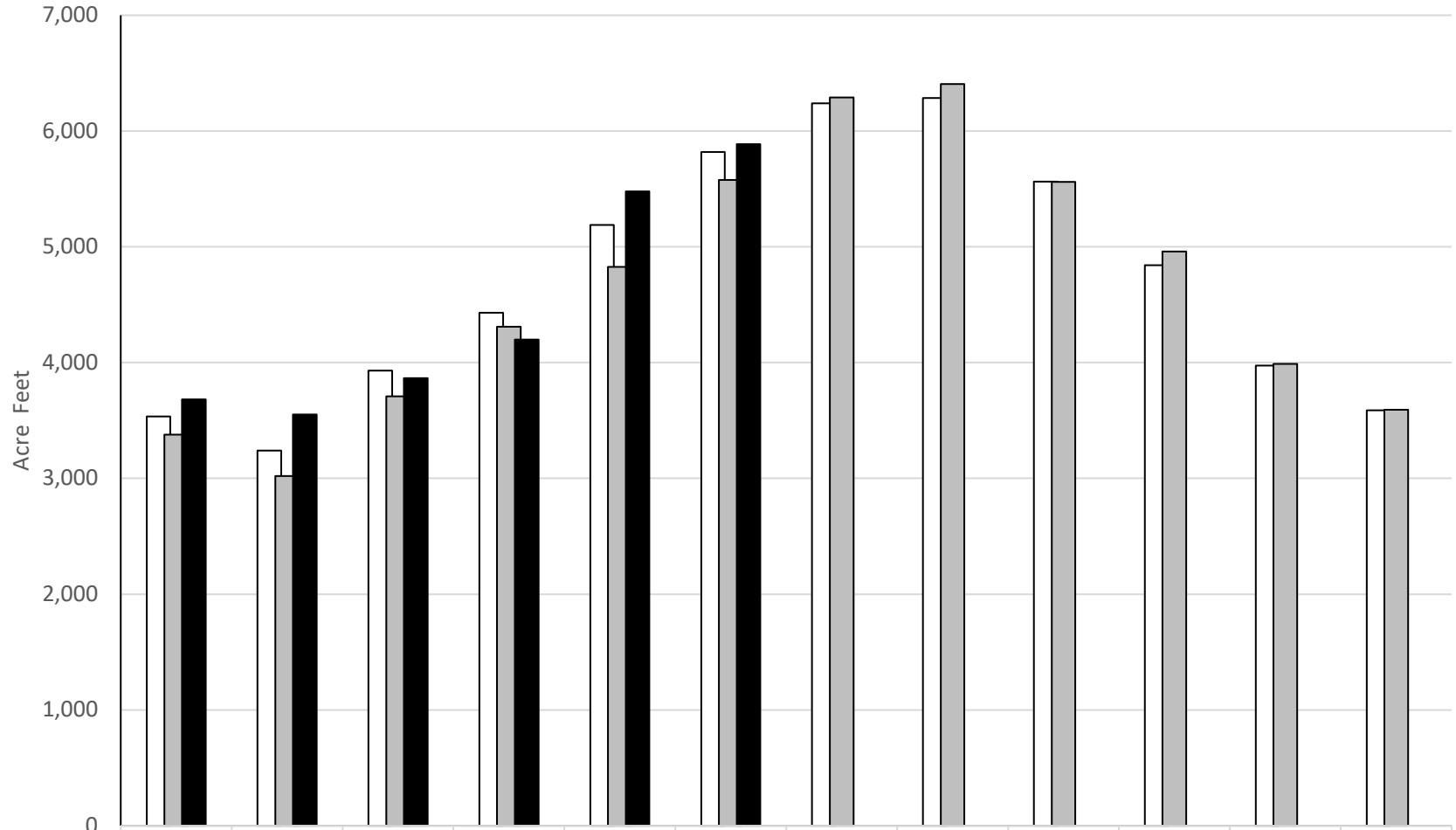
Las Vegas Valley Water District Water Production



City of Henderson Water Production

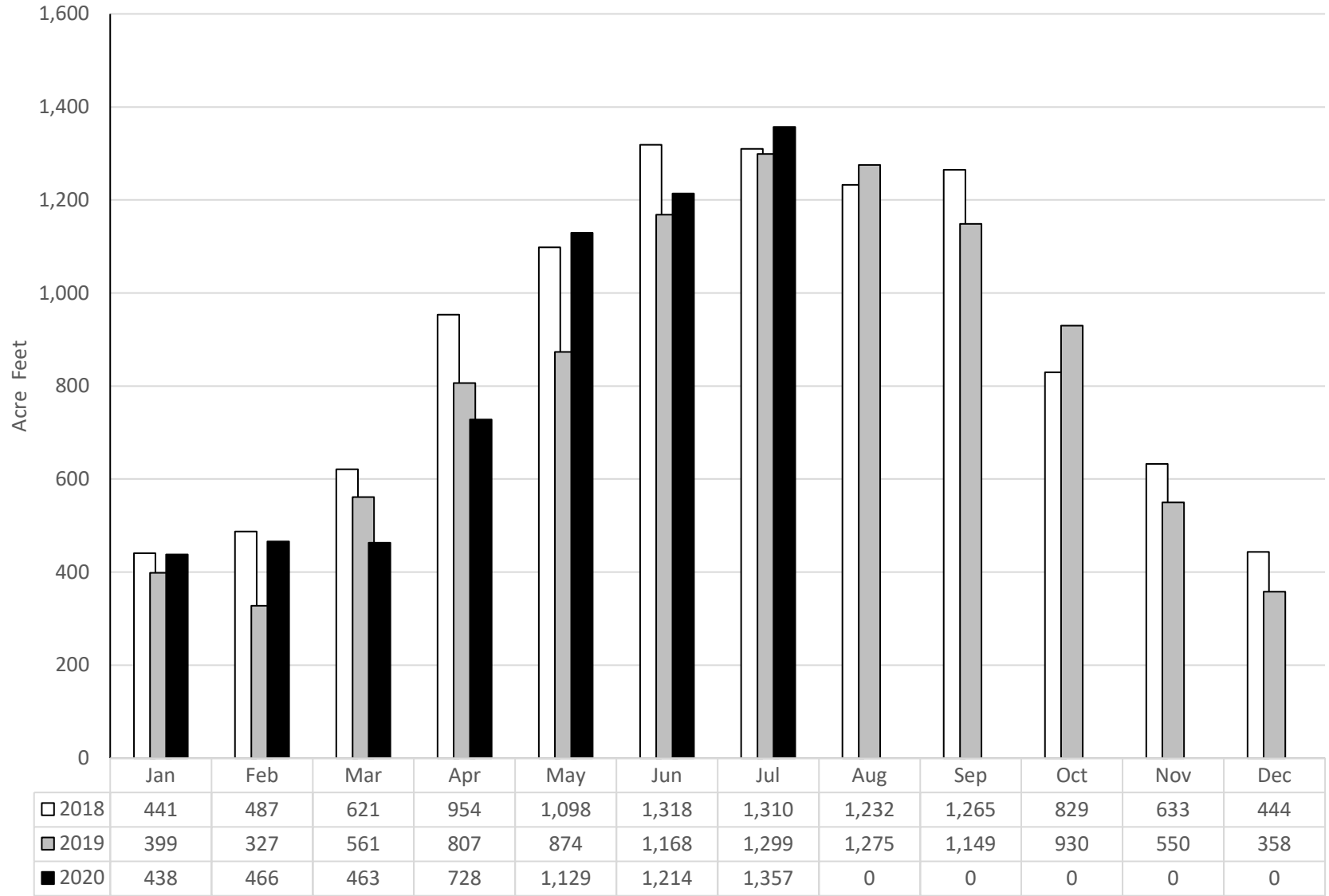


City of North Las Vegas Water Production

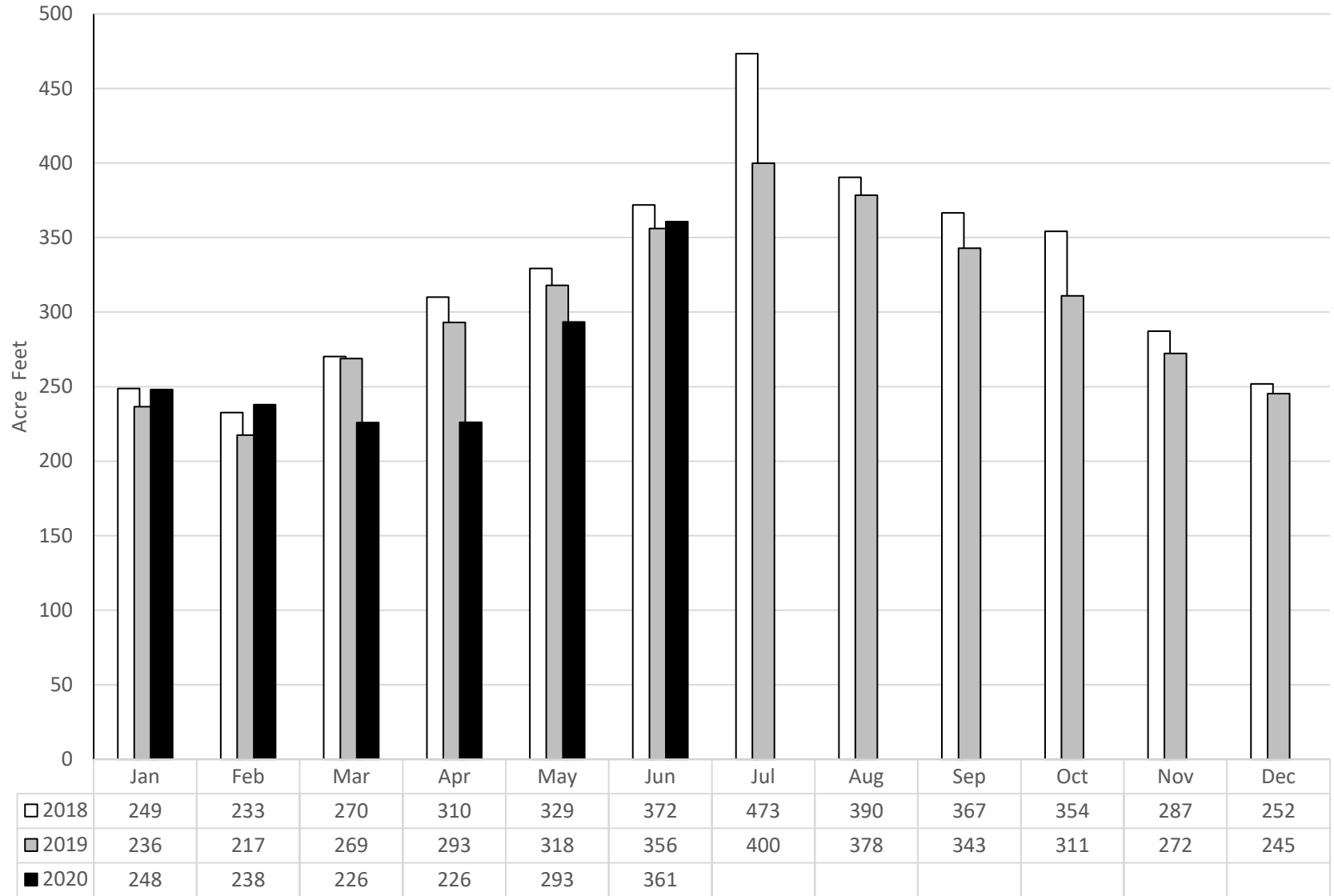


| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2018 | 3,534 | 3,241 | 3,931 | 4,430 | 5,189 | 5,818 | 6,240 | 6,285 | 5,564 | 4,841 | 3,974 | 3,587 |
| 2019 | 3,378 | 3,020 | 3,709 | 4,311 | 4,827 | 5,578 | 6,291 | 6,405 | 5,560 | 4,960 | 3,989 | 3,592 |
| 2020 | 3,682 | 3,551 | 3,865 | 4,198 | 5,478 | 5,887 | 0 | 0 | 0 | 0 | 0 | 0 |

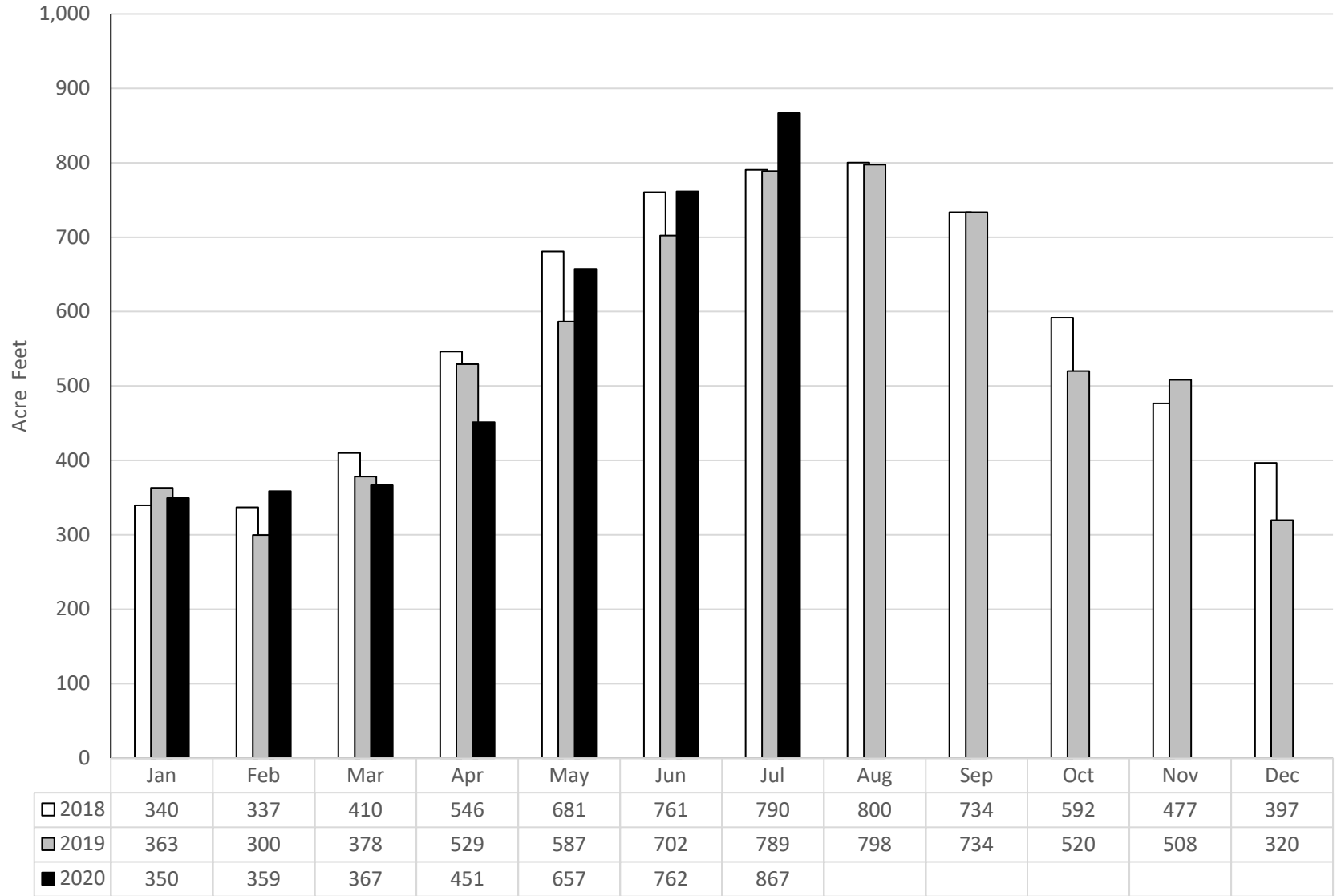
Boulder City Water Production



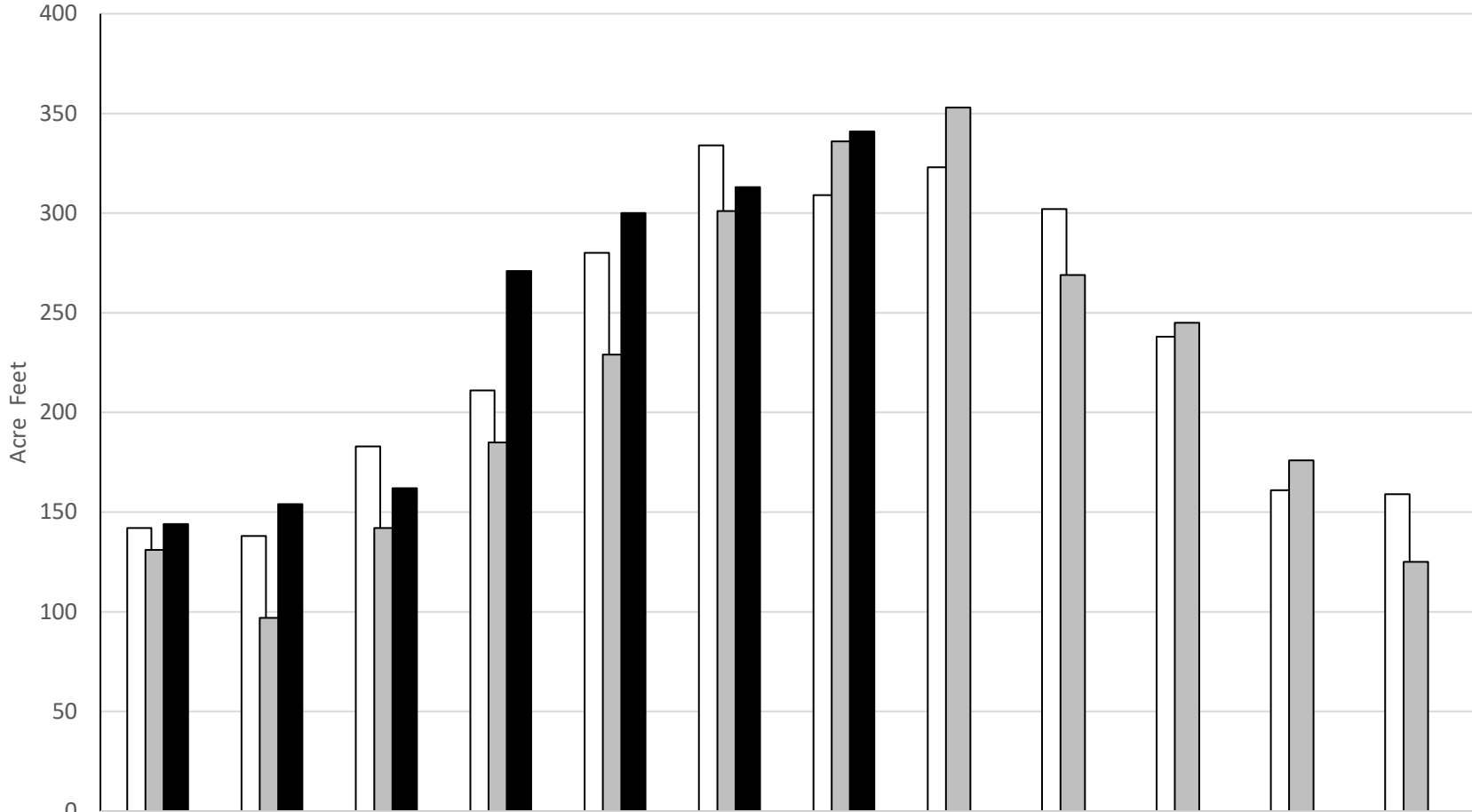
Big Bend Water District Water Production



Virgin Valley Water District Water Production



Moapa Valley Water District Water Production



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2018 | 142 | 138 | 183 | 211 | 280 | 334 | 309 | 323 | 302 | 238 | 161 | 159 |
| 2019 | 131 | 97 | 142 | 185 | 229 | 301 | 336 | 353 | 269 | 245 | 176 | 125 |
| 2020 | 144 | 154 | 162 | 271 | 300 | 313 | 341 | | | | | |

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 | | 24.80 | 23.67 | | 1.34 | 1.31 | |
| Aug | 113.39 | 109.74 | | 45.70 | 42.27 | | 18.63 | 18.70 | | 24.75 | 24.01 | | 1.33 | 1.30 | |
| Sep | 110.11 | 108.48 | | 45.82 | 42.15 | | 18.45 | 18.49 | | 24.46 | 23.70 | | 1.30 | 1.29 | |
| 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 | 98.58 | 45.02 | 42.78 | 41.85 | 17.86 | 17.98 | 17.50 | 24.23 | 24.48 | 24.46 | 1.16 | 1.24 | 1.22 |

* 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 | | 0.118 | 0.117 | 0.117 |
| Aug | 0.040 | 0.037 | | 0.015 | 0.017 | | 0.153 | 0.148 | | 2.06 | 2.22 | | 1.74 | 1.79 | | 0.110 | 0.120 | |
| Sep | 0.038 | 0.039 | | 0.013 | 0.022 | | 0.150 | 0.148 | | 1.89 | 2.14 | | 1.67 | 1.84 | | 0.107 | 0.119 | |
| Oct | 0.042 | 0.031 | | 0.014 | 0.020 | | 0.150 | 0.148 | | 1.81 | 2.02 | | 1.74 | 1.83 | | 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 | 0.018 | 0.162 | 0.165 | 0.175 | 2.10 | 1.99 | 1.59 | 1.77 | 1.75 | 1.75 | 0.100 | 0.103 | 0.118 |

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 | | | | |
| Aug | | | | |
| Sep | | | | |
| Oct | | | | |
| Nov | | | | |
| Dec | | | | |
| Annual | 1.22 | 0.32 | 220.30 | 57.35 |

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 | | | | | | 0.00 |
| Aug | | | | 0.00 | 0.00 | | | | | 0.00 | | | | | | | 0.00 |
| Sep | | | | 0.00 | 0.00 | | | | | 0.00 | | | | | | | 0.00 |
| 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 | 98.58 | 7.00 | 0.00 | 4.08 | 53.43 | 43.51 | 1.28 | 0.00 | 0.00 | 0.74 | 42.24 | 24.46 | 6.19 | 17.07 | 17.50 | 0.00 | 8.75 |

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 | Reuse | Net to LV Wash | Laughlin | Laughlin | Net to | Effluent |
| | Flow | | | Influent Flow | Reuse | River | 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 | 150.56 | 1.86 | 0.00 | 1.86 | 13,564.41 |
| Jul | 145.64 | 12.51 | 133.13 | 1.90 | 0.00 | 1.90 | 12,016.83 |
| Aug | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sep | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 1246.43 | 95.03 | 1128.08 | 11.11 | 0.00 | 11.11 | 102500.00 |

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 | 3,627 | 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 | | | 0 | | | 0 | | | 0 | 482 | 875 | 1,357 | | | 0 | 0 | 1,357 |
| 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 |
| YTD | 6,430 | 144,879 | 151,309 | 29,899 | 9,136 | 39,034 | 527 | 26,133 | 26,660 | 1,974 | 3,822 | 5,795 | 327 | 437 | 763 | 7,284 | 207,142 |

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 | 0 | 9,964 | 9,325 | 0 | 6,240 | 6,291 | 0 | 1,310 | 1,299 | 1,357 | 473 | 400 | | 790 | 789 | 867 | 309 | 336 | 341 |
| Aug | 39,673 | 39,367 | 0 | 10,281 | 10,011 | 0 | 6,285 | 6,405 | 0 | 1,232 | 1,275 | 0 | 390 | 378 | | 800 | 798 | | 323 | 353 | |
| Sep | 35,541 | 33,729 | 0 | 9,070 | 8,797 | 0 | 5,564 | 5,560 | 0 | 1,265 | 1,149 | 0 | 367 | 343 | | 734 | 734 | | 302 | 269 | |
| 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 | 151,309 | 84,107 | 73,217 | 39,034 | 54,481 | 55,618 | 26,660 | 10,650 | 9,697 | 5,795 | 4,043 | 3,639 | 1,592 | 6,535 | 6,528 | 3,812 | 2,892 | 2,940 | 1,685 |

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 | | 0.25 | 0.24 | | 0.28 | 0.28 | | 0.09 | 0.10 | | 0.51 | 0.58 | | 0.34 | 0.33 | |
| Aug | 0.39 | 0.37 | | 0.27 | 0.23 | | 0.28 | 0.28 | | 0.10 | 0.10 | | 0.53 | 0.56 | | 0.35 | 0.33 | |
| Sep | 0.42 | 0.41 | | 0.29 | 0.25 | | 0.31 | 0.31 | | 0.11 | 0.10 | | 0.51 | 0.57 | | 0.38 | 0.36 | |
| Oct | 0.52 | 0.48 | | 0.36 | 0.33 | | 0.37 | 0.35 | | 0.16 | 0.13 | | 0.51 | 0.62 | | 0.47 | 0.43 | |
| Nov | 0.61 | 0.62 | | 0.48 | 0.58 | | 0.44 | 0.42 | | 0.23 | 0.21 | | 0.63 | 0.67 | | 0.57 | 0.58 | |
| Dec | 0.70 | 0.72 | | 0.57 | 0.78 | | 0.47 | 0.47 | | 0.25 | 0.32 | | 0.66 | 0.63 | | 0.64 | 0.69 | |
| AVG. | 0.50 | 0.50 | 0.60 | 0.36 | 0.37 | 0.35 | 0.36 | 0.36 | 0.36 | 0.14 | 0.14 | 0.12 | 0.64 | 0.62 | 0.54 | 0.46 | 0.46 | 0.52 |

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 | 0 | 13,856 | 0 | 0 | 0 | 0 | 1,357 | 0 | 0 | 180 | 1,357 | 14,036 |
| Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 | 151,309 | 91,342 | 39,034 | 13,584 | 26,660 | 9,720 | 5,795 | 676 | 1,592 | 1,031 | 224,390 | 116,353 |

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 2020 | 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 |