Memorandum

Buckman Direct Diversion

Date: **March 26, 2018**

To: **Buckman Direct Diversion Board**

From: **Michael Dozier, BDD Operations Superintendent** MD

Subject: **Update on BDD Operations for the Month of March 2018**

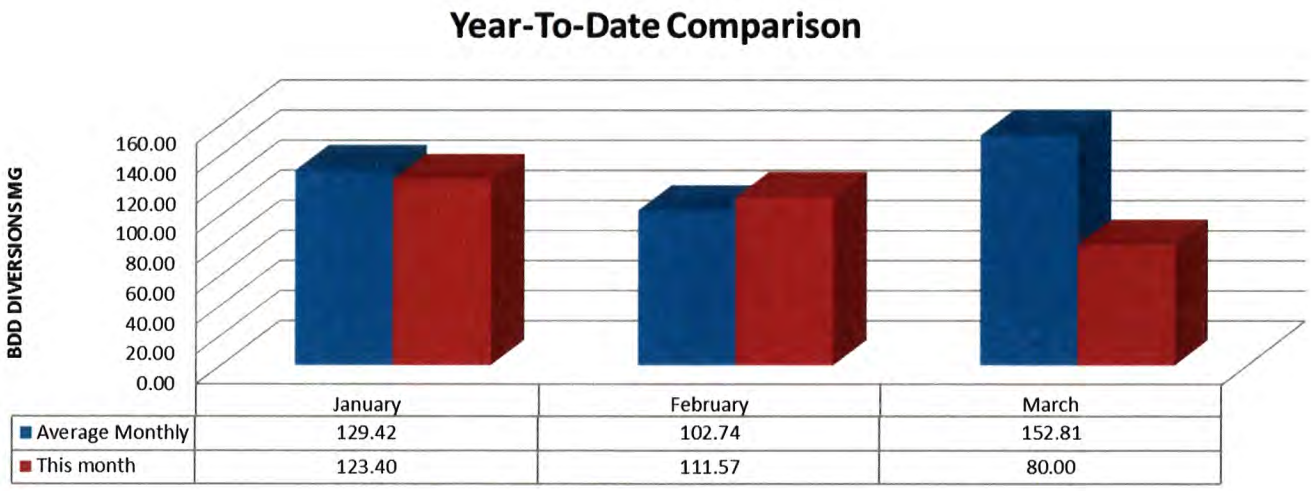
ITEM:

1. This memorandum is to update the Buckman Direct Diversion Board (BDDB) on BDD operations during the month of March 2018. The BDD diversions and deliveries have averaged, in Million Gallons Daily (MGD) as follows:

   a. Raw water diversions: 3.33 MGD Average
   b. Drinking water deliveries through Booster Station 4A/5A: 2.73 MGD Average
   c. Raw water delivery to Las Campanas at BS2A: 0.40 MGD Average
   d. Onsite treated and non-treated water storage: 0.20 MGD Average

2. The BDD is providing approximately 45% percent of the water supply to the City and County for the month.

3. The BDD year-to-date diversions are depicted below:



	January	February	March
Average Monthly	129.42	102.74	152.81
This month	123.40	111.57	80.00

4. Background Diversion tables:

Buckman Direct Diversion Monthly SJC and Native Diversions

Mar-18 In Acre-Feet

Month	**Total SJC + Native Rights**	**SP-4842 RG Native** COUNTY	**SD-03418 RG Native** LAS CAMPANAS	**SJC Call Total**	**SP-2847-E SJC Call** CITY	**SP-2847-N-A SJC Call** LAS CAMPANAS	All Partners Conveyance Losses
JAN	**391.362**	**85.737**	**0.000**	305.624	**305.624**	**0.000**	12.745
FEB	**354.287**	**78.300**	**0.000**	275.987	**275.987**	**0.000**	14.764
MAR	**260.248**	**179.506**	**0.000**	80.742	**80.742**	**0.000**	6.362
APR	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
MAY	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
JUN	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
JUL	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
AUG	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
SEP	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
OCT	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
NOV	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
DEC	**0.000**	**0.000**	**0.000**	0.000	**0.000**	**0.000**	0.000
TOTAL	**1,005.896**	**343.543**	**0.000**	**662.353**	**662.353**	**0.000**	**33.871**

In Acre-Feet

Month	**Native** COUNTY	**Native** Las Campanas	**SJC** TOTAL	**SJC** CITY	**SJC** Las Campanas	**All Partners Diversions**
JAN	85.737	0.000	292.879	292.879	0.000	378.617
FEB	78.300	0.000	261.223	261.223	0.000	339.523
MAR	179.506	0.000	74.380	74.380	0.000	253.886
APR	0.000	0.000	0.000	0.000	0.000	0.000
MAY	0.000	0.000	0.000	0.000	0.000	0.000
JUN	0.000	0.000	0.000	0.000	0.000	0.000
JUL	0.000	0.000	0.000	0.000	0.000	0.000
AUG	0.000	0.000	0.000	0.000	0.000	0.000
SEP	0.000	0.000	0.000	0.000	0.000	0.000
OCT	0.000	0.000	0.000	0.000	0.000	0.000
NOV	0.000	0.000	0.000	0.000	0.000	0.000
DEC	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	**343.543**	**0.000**	**628.483**	**628.483**	**0.000**	**972.026**

2016 Buckman Direct Diversion Monthly SJC and Native Diversions

Month	Total SJC Release (Ac-ft)	Convey-ance Losses (Ac-ft)	Total SJC Available at BDD Diversion (Ac-ft)	CITY Total SJC Diversion (Ac-ft)	Las Campanas Total SJC Diversion (Ac-ft)	Total Native Rio Grande Diversion (Ac-ft)	Total BDD Surface Diversion (Ac-ft)	SJC used to offset Buckman Wells
JAN	328.16	3.03	325.13	325.13		50.54	375.67	
FEB	248.93	2.29	246.65	246.65		77.48	324.13	
MAR	459.31	4.26	455.05	455.05		128.55	583.60	
APR	562.55	5.04	557.51	557.51		145.95	703.46	
MAY	407.82	3.63	404.19	404.19		179.69	583.88	
JUN	291.83	2.66	289.17	191.31	97.86	34.26	323.43	
JUL	360.03	3.26	356.77	251.89	104.87	113.93	470.69	
AUG	133.52	1.22	132.30	88.75	43.55	67.55	199.85	
SEP	313.61	2.52	311.09	311.09		316.73	627.82	
OCT	585.70	4.23	581.47	563.60	17.88	149.97	731.45	
NOV	288.72	2.58	286.14	282.09	4.05	122.83	408.97	
DEC	277.86	2.22	275.64	275.64		109.01	384.65	
TOTALS	**4,258.04**	**36.94**	**4,221.11**	**3,952.90**	**268.21**	**1,496.49**	**5,717.60**	

Source of SJC Releases in reporting month. Includes conveyance losses.

2016		ABIQUIU		
Month	Total Release (Ac-ft)	City	County	Club at Las Campanas
JAN	328.16	328.16		
FEB	248.93	248.93		
MAR	459.31	459.31		
APR	562.55	562.55		
MAY	407.82	407.82		
JUN	291.83	193.07		98.76
JUL	360.03	254.20		105.83
AUG	133.52	89.57		43.95
SEP	313.61	313.61		
OCT	585.70	567.69		18.01
NOV	288.71	284.63		4.08
DEC	277.86	277.86		
TOTALS	**4,258.03**	**3,987.40**		**270.63**

2015 Buckman Direct Diversion Monthly SJC and Native Diversions

Month	Total SJC Release (Ac-ft)	Convey-ance Losses (Ac-ft)	Total SJC Available at BDD Diversion (Ac-ft)	CITY Total SJC Diversion (Ac-ft)	Las Campanas Total SJC Diversion (Ac-ft)	Total Native Rio Grande Diversion (Ac-ft)	Total BDD Surface Diversion (Ac-ft)
JAN	246.57	2.40	244.17	244.17		66.12	310.29
FEB	272.15	2.36	269.79	269.79		56.73	326.52
MAR	180.19	1.60	178.59	178.59		178.02	356.61
APR	0.00	0.00	0.00	0.00		40.13	40.13
MAY	226.67	2.15	224.53	224.53		238.73	463.26
JUN	563.77	5.04	558.72	448.40	110.33	128.54	687.27
JUL	299.65	2.70	296.95	234.93	62.02	148.67	445.62
AUG	279.43	2.54	276.89	276.89		213.73	490.62
SEP	552.16	4.98	547.18	547.18		130.85	678.03
OCT	597.48	5.30	592.18	592.18		80.41	672.59
NOV	428.42	3.89	424.52	424.52		66.27	490.79
DEC	197.65	1.76	195.89	195.89		111.20	307.09
TOTALS	**3,844.14**	**34.72**	**3,809.41**	**3,637.07**	**172.35**	**1,459.40**	**5,268.82**

Source of SJC Releases in reporting month. Includes conveyance losses.

2015		ABIQUIU		
Month	Total Release (Ac-ft)	City	County	Club at Las Campanas
JAN	246.57	246.57		
FEB	272.15	272.15		
MAR	180.19	180.19		
APR	0.00	0		
MAY	226.67	226.67		
JUN	563.76	452.44		111.32
JUL	299.65	237.07		62.58
AUG	279.43	279.43		
SEP	552.16	552.16		
OCT	597.48	597.48		
NOV	428.42	428.42		
DEC	197.65	197.65		
TOTALS	**3,844.13**	**3,670.23**		**173.90**

2014 Buckman Direct Diversion Monthly SJC and Native Diversions

Month	Total SJC Release (Ac-ft)	Convey-ance Losses (Ac-ft)	Total SJC Available at BDD Diversion (Ac-ft)	CITY Total SJC Diversion (Ac-ft)	COUNTY Total SJC Diversion (Ac-ft)	Total Native Rio Grande Diversion (Ac-ft)	Total BDD Surface Diversion (Ac-ft)	SJC used to offset Buckman Wells
JAN	383.35	3.74	390.34	390.34		12.68	403.02	
FEB	349.51	3.28	341.55	341.55		11.38	352.93	
MAR	373.88	3.66	381.69	357.07	34.09	148.83	539.99	
APR	178.75	1.70	176.78	92.46	84.47	227.22	404.15	
MAY	491.46	4.61	480.35	389.13	91.22	374.86	855.21	
JUN	427.50	3.96	412.65	295.07	117.58	292.84	705.49	
JUL	425.22	4.14	431.96	399.51	32.46	72.32	504.29	
AUG	496.68	4.60	479.66	479.66		96.07	575.73	
SEP	552.71	5.40	562.83	562.83		84.85	647.68	
OCT	381.93	3.63	378.30	378.30		142.46	520.76	
NOV	441.14	4.09	426.17	426.17		11.59	437.76	
DEC	423.99	4.13	430.74	430.74		19.56	450.30	
TOTALS	**4,926.12**	**46.94**	**4,893.02**	**4,542.83**	**359.82**	**1,494.66**	**6,397.31**	

Source of SJC Releases in reporting month. Includes conveyance losses.

2014		ABIQUIU		
Month	Total Release (Ac-ft)	City	County	Club at Las Campanas
JAN	383.35	383.35		
FEB	349.51	349.51		
MAR	373.74	346.37		27.37
APR	178.83	93.42		85.41
MAY	491.82	399.41		92.41
JUN	427.82	307.54		120.28
JUL	425.22	397.13		28.09
AUG	496.68	496.68		
SEP	552.71	552.71		
OCT	381.93	381.93		
NOV	441.14	441.14		
DEC	423.99	423.99		
TOTALS	**4,926.74**	**4,573.18**		**353.56**

2013 Buckman Direct Diversion Monthly SJC and Native Diversions

Month	Total SJC Release (Ac-ft)	Convey-ance Losses (Ac-ft)	Total SJC Available at BDD Diversion (Ac-ft)	CITY Total SJC Diversion (Ac-ft)	COUNTY Total SJC Diversion (Ac-ft)	Total Native Rio Grande Diversion (Ac-ft)	Total BDD Surface Diversion (Ac-ft)	SJC used to offset Buckman Wells
JAN	439.04	4.24	441.79	441.79		44.09	485.88	
FEB	261.03	2.47	257.94	257.94		10.49	268.43	
MAR	353.69	3.30	343.57	343.57		75.66	419.23	
APR	680.73	6.34	661.33	661.33		89.47	750.80	
MAY	1,045.27	9.88	1,030.46	1030.46		22.86	1,053.32	
JUN	817.91	7.85	734.56	734.56	83.44	260.03	1,078.03	
JUL	606.85	5.90	397.47	397.47	78.83		476.30	138.43
AUG	108.68	0.91	41.68	41.68	36.91		78.59	16.46
SEP	136.77	1.43	63.86	63.86	53.76		117.62	31.68
OCT	255.24	2.46	213.87	213.87	42.66	72.92	329.45	
NOV	196.45	1.88	187.02	187.02	8.48	117.33	312.83	
DEC	293.76	2.63	274.19	274.19		12.25	286.44	
TOTALS	**5,195.42**	**49.29**	**4,647.74**	**4,647.74**	**304.08**	**705.10**	**5,656.92**	**186.57**

Source of SJC Releases in reporting month. Includes conveyance losses.

2013		ABIQUIU		
Month	Total Release (Ac-ft)	City	County	Club at Las Campanas
JAN	439.04	439.04		
FEB	261.03	261.03		
MAR	353.69	353.69		
APR	680.73	680.73		
MAY	1,045.27	1045.27		
JUN	817.90	729.3		88.6
JUL	606.85	473.27		133.58
AUG	108.68	65.21		43.47
SEP	136.77	83.87		52.9
OCT	255.24	211.15		44.09
NOV	196.46	186.31		10.15
DEC	293.76	293.76		
TOTALS	**5,195.42**	**4,822.63**		**372.79**

2012 Buckman Direct Diversion Monthly SJC and Native Diversions

Month	Total SJC Release (Ac-ft)	Convey-ance Losses (Ac-ft)	Total SJC Available at BDD Diversion (Ac-ft)	Total SJC Diversion (Ac-ft)	Total Native Rio Grande Diversion (Ac-ft)	Total BDD Surface Diversion (Ac-ft)	SJC used to offset Buckman Wells
JAN	448.09	4.06	447.00	411.56	5.02	416.58	35.44
FEB	210.29	1.97	216.94	208.13	32.21	240.34	8.81
MAR	335.75	2.94	323.61	312.85	59.21	372.06	10.76
APR	528.63	4.72	519.90	519.90	108.61	628.51	
MAY	660.18	6.24	651.05	651.05	145.51	796.56	
JUN	722.36	6.79	692.21	692.21	120.92	813.13	
JUL	152.03	2.23	191.75	157.16		157.16	34.60
AUG	86.08	0.58	60.90	60.90	239.96	300.86	
SEP	637.17	6.05	630.92	630.92	110.07	740.99	
OCT	747.21	7.14	744.87	744.87	50.82	795.69	
NOV	479.19	4.63	482.65	482.65	120.91	603.56	
DEC	442.67	4.17	434.71	434.71	119.44	554.15	
TOTALS	**5,449.65**	**51.52**	**5,396.51**	**5,306.91**	**1,112.68**	**6,419.59**	**89.61**

Source of SJC Releases in reporting month. Includes conveyance losses.

2012		HERON		EL VADO		ABIQUIU	
Month	Total Release (Ac-ft)	City	County	City	County	City	County
JAN	448.09					448.09	
FEB						210.29	
MAR						335.75	
APR						528.63	
MAY						660.18	
JUN			27.21			695.15	
JUL			21.42			130.61	
AUG						86.08	
SEP						637.17	
OCT						747.21	
NOV						479.19	
DEC						442.67	
TOTALS	**448.09**		**48.63**			**5,401.02**	

5. Drought/Monsoon, Storage, and ESA Update:

NOAA has recently (03/08/18) updated ENSO (El Nino/La Niña) status to: **"A transition from La Niña to ENSO-neutral is most likely (~55% chance) during the March-May season, with neutral conditions likely to continue into the second half of the year."** Heron, Abiquiu, and El Vado reservoir levels on the Chama River are no longer rising. Runoff projections for this year are for far below normal. Local Upper Santa Fe River reservoir storage volume is slowly decreasing, but that is normal for this time of year (about 35% full). Recent minor snows may help (?) when runoff season begins later this Spring. The City received 100% delivery (5,230 AF) from BoR of full firm-yield of San Juan-Chama Project (SJCP) water for year 2017, and received a January, 2018 delivery of 2,290 AF. No new deliveries have been made since January but BoR is projecting a full 100% firm-yield delivery of SJCP water by the end of the year. There are no water-related Endangered Species Act (ESA) updates. Updates on ESA issues will be made as needed. Rio Grande Compact Article VII storage restrictions are not in effect, which means the City is allowed to impound "native" runoff into Nichols and McClure Reservoirs above the pre-Compact pool of 1,061 acre-feet (AF); however, Article VII is expected to go back into effect in June. Updates to this condition will be made as needed.

Most current City of Santa Fe SJCP Reservoir Storage:

Heron:
5,230 AF. Year-2017 deliveries were 100% of annual total.
2,290 AF. Year 2018 deliveries through January.

El Vado:
0 AF.

Abiquiu:
9,733 AF. SJCP carry-over from previous years plus 2017 deliveries. No time limit to vacate due to storage agreement with ABCWUA

TOTAL:
17,253 AF

City of Santa Fe, New Mexico

memo

Date: March 23, 2018

To: Public Utilities Committee & BDD Project Board

Via: Shannon Jones, Acting Public Utilities Department Director.

Via: Rick Carpenter, Acting Water Division Director

From: Alan G. Hook, Water Resources Coordinator Assistant A.G.H.

Subject: City of Santa Fe Municipal Reservoir Storage, Rio Grande Compact Accounting in 2017 and Projected Santa Fe River Streamflow in 2018.

Background

The City of Santa Fe has several management options that allow the storage of water in Nichols and McClure Reservoirs, the municipal reservoirs, even if the conditions of the Rio Grande Compact (Compact) preventing upstream storage are in effect. Storing in post-1929 reservoirs may generally not occur if the content of Elephant Butte Reservoir is below 400,000 Acre-Feet (AF).

First, regardless of the water conditions at Elephant Butte, Santa Fe can store 1,061 AF in the municipal reservoirs. This storage amount is the 'Pre-Compact Pool', which is not subject to Compact restrictions; because this amount of water was historically stored before the Compact went into effect, see Attachment 1: 2017 Accounting for Water Storage in Nichols and McClure Reservoirs (in AF).

Second, the City of Santa Fe Water Division (Water Division) routinely stores water in the local, municipal reservoirs, which it pays for drop-for-drop with the exchange of San Juan-Chama Project water to the Interstate Stream Commission (ISC) as offsets for the Compact. In 2016, the City Santa Fe stored 755 AF of water in the 'Relinquishment Credit Pool' and "paid" for the water with an equivalent exchange of San Juan-Chama Project water to the ISC, see Attachment 1: 2017 Accounting for Water Storage in Nichols and McClure Reservoirs (in AF). The total amount of water in San Juan-Chama Project 'relinquishment credits' was 6,452 AF at the end of 2016.

Third, if the storage of water at Elephant Butte Reservoir is above 400,000 AF the Compact follows the Article VII rule, which allows local reservoirs to store water without having to exchange water to the ISC for Compact compliance. In 2017, the Water Division stored 985 AF of water in the 'Post Compact Pool' while the Article VII rule

was lifted, see Attachment 1: 2017 Accounting for Water Storage in Nichols and McClure Reservoirs (in AF).

All water not assigned to one of the categories or 'pools' above is subject to the Compact restrictions. City Water Division staff recognizes the importance of strategically managing reservoir storage and accounting. Staff meets regularly on the subject both internally and with the NM Interstate Stream Commission & Office of the State Engineer staff to discuss water management options.

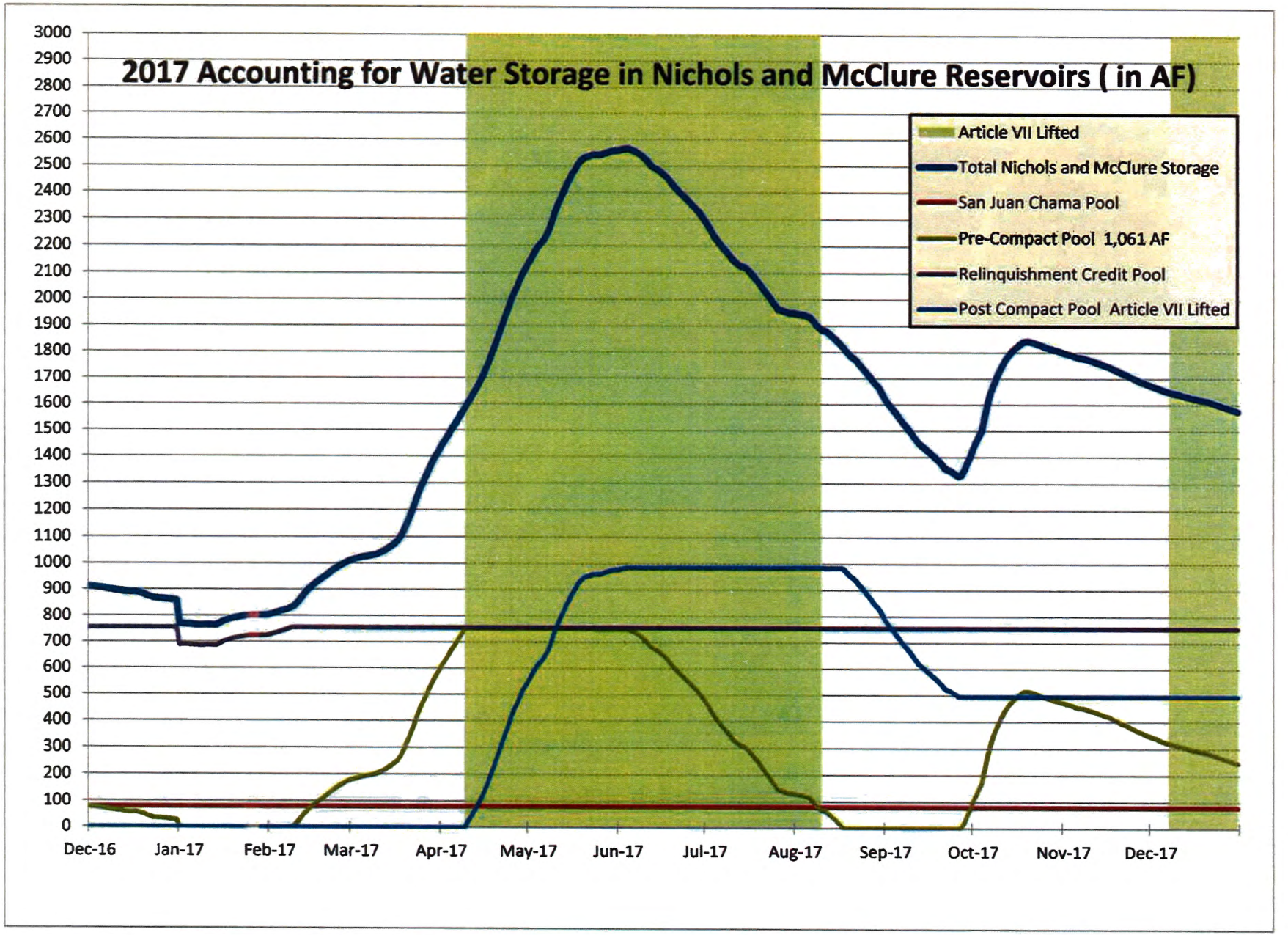
Informational Item

Through the winter of 2017-2018, both the precipitation and the snowpack within the Santa Fe Municipal Watershed have remained below the historical average, see Attachment 2: Rio Grande Basin Water Supply Outlook Report as of March 1, 2018. Given these drought conditions within our local, municipal watershed the projected Santa Fe River streamflow yield into the reservoirs is forecasted to be 16% of the 30 year average (1981-2010). With these conditions staff created a comparative analysis of 2006 Santa Fe River streamflow vs. 2018 projected streamflow into the municipal reservoirs, see Attachment 3: Average Santa Fe River Inflow Above McClure Reservoir vs. 2006 Inflows & 2018 Projections.

It is expected the Canyon Road Water Treatment Plant will be able to produce 1,500 acre-feet in 2018, given the carryover storage in the municipal reservoirs. The Water Division actively manages the many sources of supply to provide the City of Santa Fe customers safe and reliable water. In addition, water consumption has been generally declining since the early 2000's thanks largely to the highly successful water conservation program and the efforts of residential & commercial water consumers.

If you have any questions, please contact me at 955-4205 or aghook@santafenm.gov.

Attachments:
2017 Accounting for Water Storage in Nichols and McClure Reservoirs (in AF).
Rio Grande Basin Water Supply Outlook Report as of March 1, 2018.
Average Santa Fe River Inflow Above McClure Reservoir vs. 2006 Inflows & 2018 Projections.


2017 Accounting for Water Storage in Nichols and McClure Reservoirs (in AF)
Article VII Lifted
Total Nichols and McClure Storage
San Juan Chama Pool
Pre-Compact Pool 1,061 AF
Relinquishment Credit Pool
Post Compact Pool Article VII Lifted
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
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Dec-16
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Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17

USDA

United States Department of Agriculture

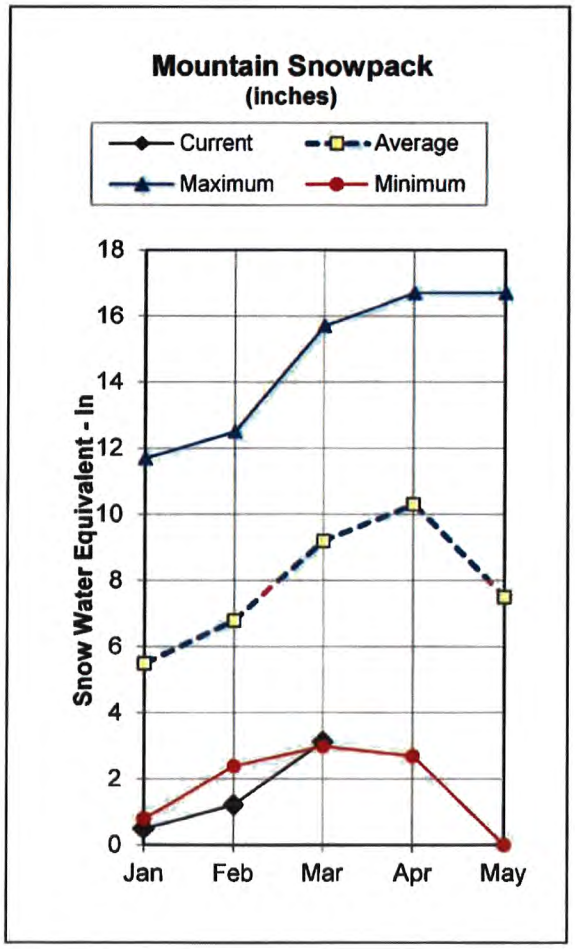
Natural Resources Conservation Service

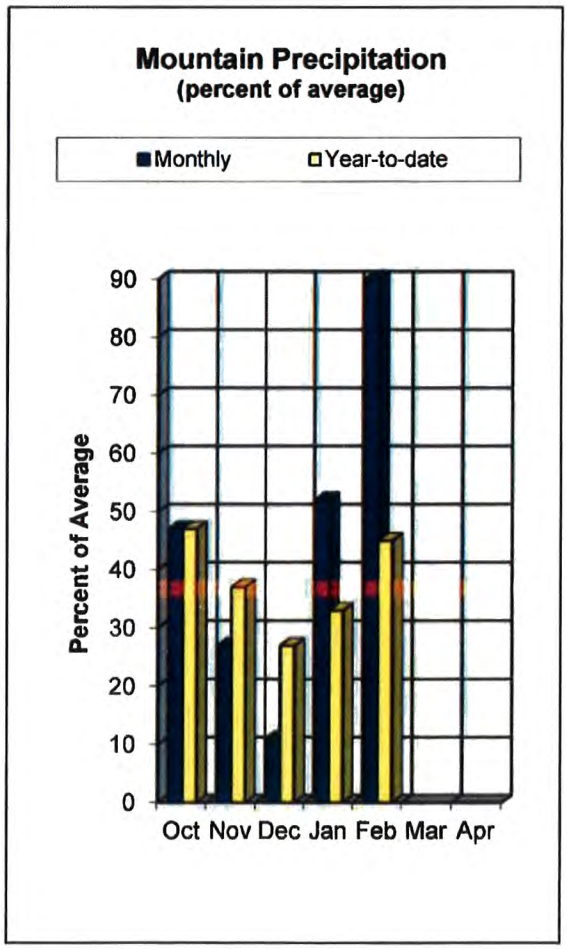
New Mexico Basin Outlook Report March 1, 2018

A good foot of fresh snow fell over the Taos ski valley and northern New Mexico during the last week of February. Although not enough to make a big dent in the states snow deficit it was sure nice to see winter!
Photo courtesy of Aaron Miller, NRCS

Rio Grande Basin
Water Supply Outlook Report
as of March 1, 2018

Streamflow forecasts for the Rio Grande Basin have increased slightly in the northern mountains, yet remain well below normal further to the south. Currently ranging from 18 to 68 percent in the north to single digit percentages below Jemez Dam. For the April to September forecasts, the Rio Grande near Del Norte is 60 percent of the average. Further south at Costilla Creek near Costilla the forecasts remains at 33 percent of average for the March to July time period. Additionally, for the March to July forecasts the Jemez River near Jemez has increased marginally to 19 percent of the average! The Rio Grande at Otowi Bridge is forecast at only 25 percent of average. Water year-to-date precipitation has increased slightly from 33 percent to 45 percent of the average. This is due to February being a wet month in the basin having received 90 percent of the average precipitation. Snowpack in the basin has almost doubled throughout the month from 18 to 34 percent of median. This is however 85 percent below last year's median! Snowpack in southern Colorado near the headwaters of the Rio Grande has also improved from 31to 55 percent of median. Current reservoir storage in the basin is 928,600 acre-feet. This is 298,400 more acre-feet than the basin had at this time last year and 46 percent of the average.





Data Current as of: 3/5/2018 3:10:16 PM

Rio Grande Basin
Streamflow Forecasts - March 1, 2018

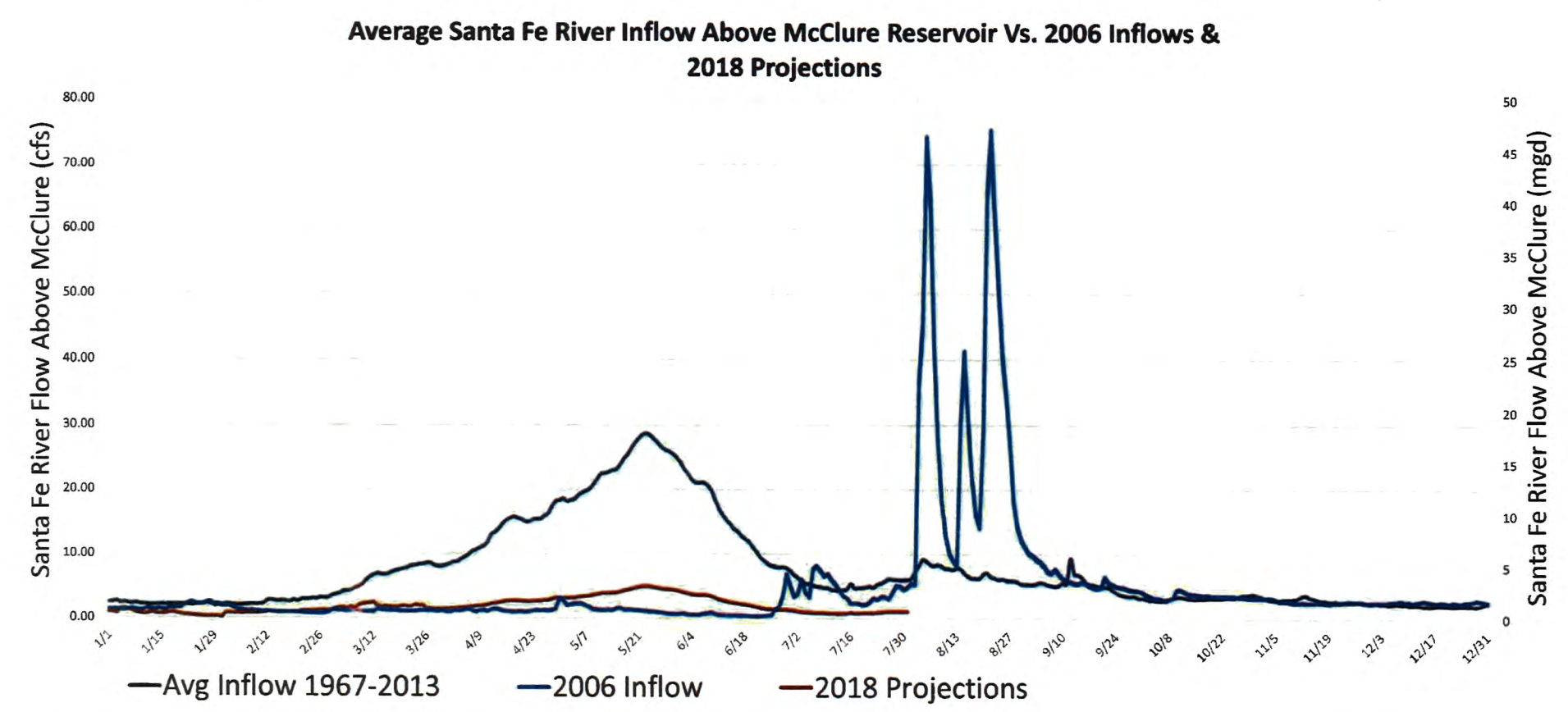
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande nr Del Norte [2]	APR-SEP	172	250	310	60%	375	485	515
Platoro Reservoir Inflow	APR-JUL	25	33	38	68%	44	53	56
	APR-SEP	27	35	42	68%	48	59	62
Conejos R nr Mogote [2]	APR-SEP	75	102	123	63%	145	181	194
Costilla Reservoir Inflow	MAR-JUL	2.2	3.7	5	45%	6.4	8.9	11.1
Costilla Ck nr Costilla [2]	MAR-JUL	2.5	5.7	8.7	33%	12.3	18.7	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	5.1	9.1	12.5	37%	16.4	23	34
Rio Hondo nr Valdez	MAR-JUL	1.2	2.9	4.6	25%	6.5	10.1	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	0.34	1.6	3	18%	4.8	8.3	17
Rio Lucero nr Arroyo Seco	MAR-JUL	1.05	2.3	3.5	32%	4.9	7.5	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	0	0.5	2.4	7%	5.7	13.2	36
Embudo Ck at Dixon	MAR-JUL	0.34	3.9	8.4	18%	14.8	27	48
El Vado Reservoir Inflow [2]	MAR-JUL	21	44	64	28%	87	129	225
	APR-JUL	17.9	39	58	28%	80	120	205
Santa Cruz R at Cundiyo	MAR-JUL	1.59	3.2	4.7	26%	6.4	9.4	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	0.54	1.11	1.61	25%	2.2	3.2	6.5
Tesuque Ck ab diversions	MAR-JUL	0.04	0.18	0.33	25%	0.51	0.86	1.34
Rio Grande at Otowi Bridge [2]	MAR-JUL	54	121	182	25%	255	385	720
Santa Fe R nr Santa Fe [2]	MAR-JUL	0.17	0.43	0.67	16%	0.96	1.5	4.3
Jemez R nr Jemez	MAR-JUL	2.1	5.1	7.8	19%	11.2	17.1	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	0.09	1.29	2.9	9%	5.2	9.6	34
Rio Grande at San Marcial [2]	MAR-JUL	-330	-136	-4.5	-1%	127	320	510

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of February, 2018	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	125.0	123.8	154.8	1198.5
Bluewater Lake	6.2	7.8	6.6	38.5
Caballo Reservoir	44.5	29.6	101.1	332.0
Cochiti Lake	48.1	46.0	58.3	491.0
Costilla Reservoir	11.4	6.1	6.9	16.0
El Vado Reservoir	70.6	52.8	100.8	184.8
Elephant Butte Reservoir	482.8	295.3	1305.0	2195.0
Heron Reservoir	139.9	68.7	297.8	400.0
Basin-wide Total	928.6	630.2	2031.3	4855.8
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis March 1, 2018	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	19	34%	119%


Average Santa Fe River Inflow Above McClure Reservoir Vs. 2006 Inflows & 2018 Projections
Santa Fe River Flow Above McClure (cfs)
Santa Fe River Flow Above McClure (mgd)
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
50
45
40
35
30
25
20
15
10
5
0
1/1
1/15
1/29
2/12
2/26
3/12
3/26
4/9
4/23
5/7
5/21
6/4
6/18
7/2
7/16
7/30
8/13
8/27
9/10
9/24
10/8
10/22
11/5
11/19
12/3
12/17
12/31
—Avg Inflow 1967-2013
—2006 Inflow
—2018 Projections

City of Santa Fe, New Mexico

memo

Date: March 23, 2018

To: Buckman Direct Diversion Board

Via: Shannon Jones, Public Utilities Division Director (Acting)
Via: Rick Carpenter, Water Division Director (Acting)

From: Nick Schiavo, Source of Supply Manager
From: Andrew Erdmann, Water Resources Coordinator

Re: Projections for Water Demand and Water Supply for the 2018 Calendar Year

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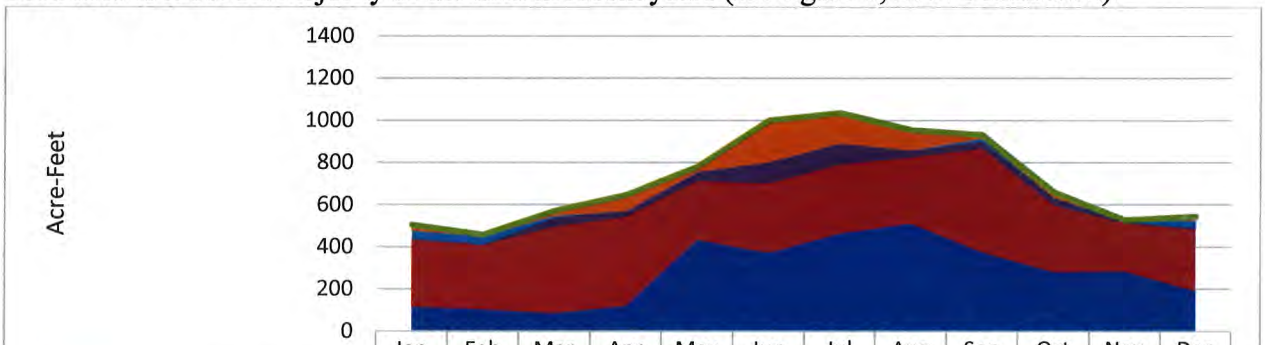
Informational Item Summary: The City Water Division has developed supply- and demand-projections based on two high-demand, low-surface water availability scenarios. These projections demonstrate the City water system's ability to meet demand even in the event that demand increases substantially and surface water availability is significantly reduced. This memo describes the development and outcome of these projections.

Detailed Background: The City of Santa Fe water system has four water sources: The Santa Fe River accessed via the Canyon Road Water Treatment Plant, San Juan – Chama Project (SJCP) water accessed via the BDD, City Wellfield water, and Buckman Wellfield water. The City Water Division works to minimize groundwater use in years when surface water availability is limited – like this year – and preferentially uses Santa Fe River and SJCP surface water sources which have been able to meet the majority of demand in recent years (see figure 1, 2017 Production).



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Buckman Wellfield	28	10	26	74	23	199	144	98	17	27	4	21
St. Mike's Well	36.0	39.0	8.0	0.0	0.0	0.0	0.0	0.7	13.0	3.0	4.0	36.0
City Wellfield	9	0	43	28	44	101	100	33	34	33	7	3
Buckman Direct Diversion	316.0	307.0	410.0	421.0	279.0	330.0	328.0	313.0	491.0	317.0	228.0	293.0
Santa Fe River	115.0	103.0	85.0	120.0	433.0	371.0	463.0	511.0	376.0	281.0	285.0	192.0
Baseline Groundwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Demand	505.0	458.0	572.0	646.0	782.0	1001.0	1036.0	956.0	933.0	662.0	529.0	546.0

Figure 1- 2017 Production

Total demand from the City water system has been generally declining since the early 2000's thanks largely to the highly successful water conservation program and the efforts of residential water consumers. In 2017, City water demand was 8,626 acre-feet (af) and surface water supplied greater than 85% of total demand, but 2018 is predicted to be hotter and drier resulting in increased demand and reduced surface water availability. These projections are based on a total system demand of 10,000 af distributed through the year based on patterns of average monthly use.

The **Santa Fe River** is the historic source of water for the City of Santa Fe and originates in the mountains above Canyon Road. The City is permitted for 5,040 af per year of water from the Santa Fe River including storage rights in the Nichols and McClure reservoirs. The River is also used to meet other water demands including the Living River and acequia deliveries. The National Resource Conservation Service is projecting that, for 2018, the total amount of water available from the Santa Fe River will be less than 20% of the historic average. For these projections a value of **1500 acre-feet** is being used the Santa Fe River production.

The **BDD** facility, co-owned by the City and County, diverts the City's SJCP water from the Rio Grande. The City has 5,230 af of SJCP water delivered from the upper Colorado River Basin into the Chama River by the Bureau of Reclamation via tunnels beneath the Continental Divide. The City holds over 14,000 af of SJCP water in storage in reservoirs in the northern part of the state and is expecting a full allocation of SJCP water in 2018. One of the operational complexities associated with the use of SJCP water is that the contractors of those flows, including the City of Santa Fe, are responsible for losses to infiltration and these losses increase when native water levels are low. In this instance, the Albuquerque – Bernalillo County Water Utility Authority (ABCWUA) is likely to suspend its use of SJCP water leaving Santa Fe in a position where the losses incurred to deliver water from storage reservoirs to the BDD intake are unacceptably high. This could result in a reduction or pause of BDD operations. Due to the possibility of reduced production from the BDD, these projections use a value of **3,000 af** of SJCP water. Also, there are two operational scenarios simulated: one in which the BDD is unable to operate for three months during the high demand season and another in which it remains operational year round. Total BDD production remains the same in both scenarios, and the scenario where BDD is shut down during high demand season is included to provide assurance that groundwater resources can meet demand in that instance.

Groundwater is the only source of water the City can use to meet demand that exceeds surface water availability. Total demand is projected at 10,000 af with 1500 af of Santa Fe River Water and another 3000 af of SJCP Water, leaving 5,500 af of demand to be met with groundwater. Groundwater, in these projections, is divided into four categories: City wellfield production, Buckman wellfield production, St. Mike's production, and baseline production. The differences between these categories are:

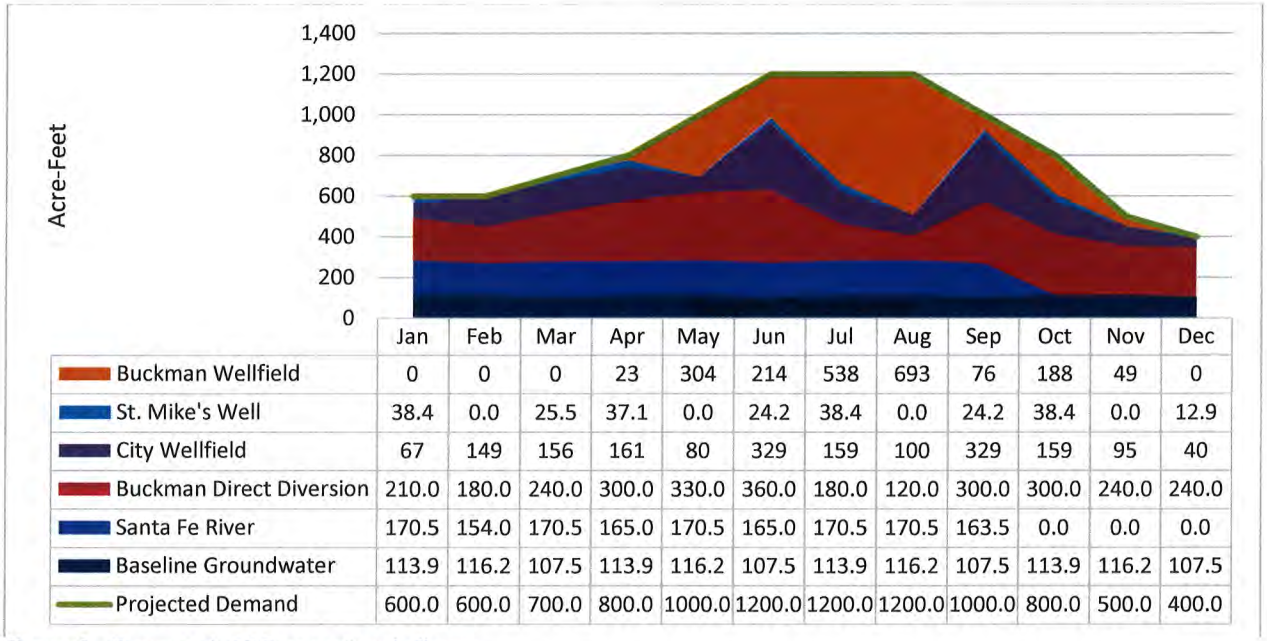
- City wellfield production = water produced from the City wellfield above the minimum required for sampling and operational exercise.
- Buckman wellfield production = water produced from the Buckman wellfield above the minimum required for sampling and operational exercise.
- St. Mike's production = water produced from the St. Mike's above the minimum required for sampling and operational exercise. The St. Mike's well is permitted as a Supplemental Point of Diversion for the Santa Fe River license and is tracked separately for this reason.

- Baseline production = water produced from all of the wells – City, Buckman, and St. Mike's –to meet City and LANL sampling requirements and to provide adequate operational exercise. Baseline production is intended to ensure regular operation of more wells than have been used in recent years and to ensure that wells are predictable and that reliable backup is always available.

Production capacities and constraints for each individual well were considered in determining an appropriate distribution of groundwater pumping and aggregated based on the categories listed above to develop these projections. The table below summarizes production targets from each groundwater source, and detailed tables including the specific projections for each well are included as an attachment to this memo.

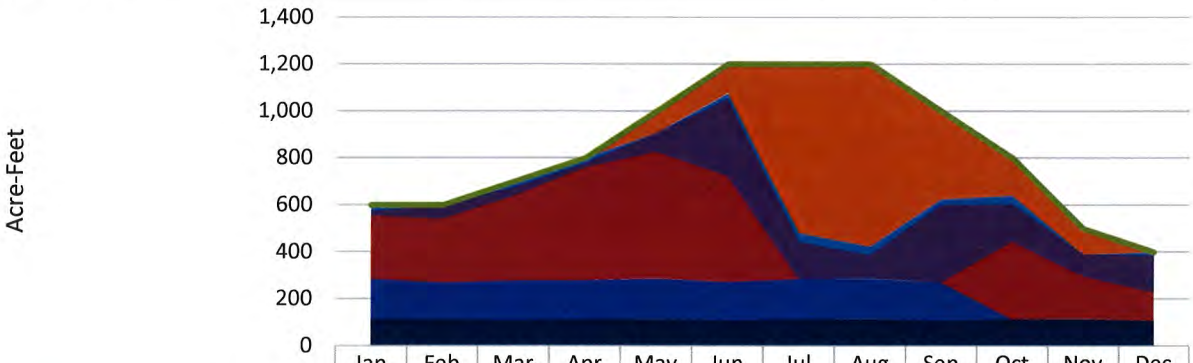
Source	Scenario A - BDD operational (af)	Scenario B - BDD suspended (af)
City Wellfield	1824	1546
Buckman Wellfield	2085	2355
St. Mike's	239	247
Baseline	1351	
TOTALS	5500	

2018 Water Production Projections: There are two scenarios for which projections have been prepared. Both scenarios are intended to measure and plan for system capacity under high-demand and low-surface water availability. Total Demand values are the same for each projection, and specific projections for surface water are also the same. Scenario A assumes that BDD is operating all summer without having to shut down while production levels remain at 5500 af for groundwater.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Buckman Wellfield	0	0	0	23	304	214	538	693	76	188	49	0
St. Mike's Well	38.4	0.0	25.5	37.1	0.0	24.2	38.4	0.0	24.2	38.4	0.0	12.9
City Wellfield	67	149	156	161	80	329	159	100	329	159	95	40
Buckman Direct Diversion	210.0	180.0	240.0	300.0	330.0	360.0	180.0	120.0	300.0	300.0	240.0	240.0
Santa Fe River	170.5	154.0	170.5	165.0	170.5	165.0	170.5	170.5	163.5	0.0	0.0	0.0
Baseline Groundwater	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5
Projected Demand	600.0	600.0	700.0	800.0	1000.0	1200.0	1200.0	1200.0	1000.0	800.0	500.0	400.0

Figure 2 - Scenario A, BDD operational all year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Buckman Wellfield	0	0	0	0	94	124	718	776	376	158	109	0
St. Mike's Well	25.8	0.0	25.5	20.6	0.0	24.2	38.4	36.8	24.2	38.4	0.0	12.9
City Wellfield	20	60	36	20	80	329	159	100	329	159	95	159
Buckman Direct Diversion	270.0	270.0	360.0	480.0	540.0	450.0	0.0	0.0	0.0	330.0	180.0	120.0
Santa Fe River	170.5	154.0	170.5	165.0	170.5	165.0	170.5	170.5	163.5	0.0	0.0	0.0
Baseline Groundwater	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5
Projected Demand	600.0	600.0	700.0	800.0	1000.0	1200.0	1200.0	1200.0	1000.0	800.0	500.0	400.0

Figure 3 - Scenario B

Scenario B assumes that BDD has to shut down for three months of high system demand while production levels remain at 5500 af for groundwater.

Attachment – Pumping Tables for Individual Wells

SCENARIO A			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
Buckman Well Field	BWF 1	Production	0.0	0.0	0.0	0.0	110.5	0.0	0.0	83.8	0.0	0.0	0.0	0.0	194.3
		Baseline	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	92.1
	BWF 2	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	BWF 3	Production	0.0	0.0	0.0	0.0	0.0	0.0	55.2	46.0	0.0	46.0	0.0	0.0	147.3
		Baseline	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	46.0
	BWF 4	Production	0.0	0.0	0.0	0.0	0.0	49.7	0.0	46.0	0.0	0.0	0.0	0.0	95.8
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 5	Production	0.0	0.0	0.0	0.0	0.0	54.8	0.0	46.0	0.0	0.0	0.0	0.0	100.8
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 6	Production	0.0	0.0	0.0	0.0	110.5	0.0	133.5	114.0	0.0	0.0	48.8	0.0	406.8
		Baseline	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	92.1
	BWF 7	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 8	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	19.6	0.0	0.0	19.6	0.0	0.0	19.6	0.0	0.0	19.6	0.0	78.3
	BWF 9	Production	0.0	0.0	0.0	23.0	0.0	0.0	55.2	0.0	0.0	54.8	0.0	0.0	133.0
		Baseline	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	46.0
	BWF 10	Production	0.0	0.0	0.0	0.0	82.9	0.0	110.5	129.8	0.0	18.4	0.0	0.0	341.6
		Baseline	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	92.1
	BWF 11	Production	0.0	0.0	0.0	0.0	0.0	0.0	83.6	97.4	0.0	69.1	0.0	0.0	250.0
		Baseline	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	69.1
	BWF 12	Production	0.0	0.0	0.0	0.0	0.0	0.0	100.1	0.0	32.5	0.0	0.0	0.0	132.6
		Baseline	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	69.1
	BWF 13	Production	0.0	0.0	0.0	0.0	0.0	109.6	0.0	129.8	43.3	0.0	0.0	0.0	282.7
		Baseline	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	92.1
City Well Field	NW	Production	34.4	63.8	0.0	87.1	0.0	145.8	100.1	0.0	145.8	100.1	0.0	0.0	677.1
		Baseline	50.6	0.0	0.0	50.6	0.0	0.0	50.6	0.0	0.0	50.6	0.0	0.0	202.6
	Torreon	Production	32.9	0.0	5.5	57.0	0.0	37.2	58.9	0.0	37.2	58.9	0.0	0.0	287.7
		Baseline	0.0	0.0	19.8	0.0	0.0	19.8	0.0	0.0	19.8	0.0	0.0	19.8	79.2
	Ferguson	Production	0.0	23.3	41.1	16.6	6.9	39.8	0.0	27.3	39.8	0.0	26.0	0.0	220.7
		Baseline	0.0	13.8	0.0	0.0	13.8	0.0	0.0	13.8	0.0	0.0	13.8	0.0	55.2
	Hickox	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Alto	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Agua Fria	Production	0.0	62.2	109.6	0.0	72.8	106.1	0.0	72.8	106.1	0.0	69.2	39.8	638.5
		Baseline	0.0	36.8	0.0	0.0	36.8	0.0	0.0	36.8	0.0	0.0	36.8	0.0	147.3
	Santa Fe	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	St. Mikes	Production	38.4	0.0	25.5	37.1	0.0	24.2	38.4	0.0	24.2	38.4	0.0	12.9	239.0
		Baseline	0.0	0.0	12.9	0.0	0.0	12.9	0.0	0.0	12.9	0.0	0.0	12.9	51.6
	Osage	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TOTALS	Production	105.7	149.3	181.7	220.8	383.5	567.2	735.5	792.9	428.9	385.6	144.0	52.7	4147.7
	Baseline	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	1350.7
	Combined	219.6	265.5	289.2	334.8	499.7	674.7	849.4	909.2	536.3	499.6	260.2	160.2	5498.4

SCENARIO B			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
Buckman Well Field	BWF 1	Production	0.0	0.0	0.0	0.0	38.7	0.0	113.2	114.0	0.0	0.0	25.8	0.0	291.7
		Baseline	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	92.1
	BWF 2	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	BWF 3	Production	0.0	0.0	0.0	0.0	0.0	0.0	55.2	68.5	0.0	46.0	0.0	0.0	169.8
		Baseline	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	46.0
	BWF 4	Production	0.0	0.0	0.0	0.0	0.0	29.9	0.0	68.5	54.8	0.0	0.0	0.0	153.2
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 5	Production	0.0	0.0	0.0	0.0	0.0	29.9	66.8	0.0	54.8	0.0	0.0	0.0	151.5
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 6	Production	0.0	0.0	0.0	0.0	55.2	0.0	133.5	114.0	0.0	0.0	82.9	0.0	385.6
		Baseline	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	92.1
	BWF 7	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	8.3
		Baseline	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	46.0
	BWF 8	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.4	0.0	0.0	0.0	0.0	34.4
		Baseline	0.0	19.6	0.0	0.0	19.6	0.0	0.0	19.6	0.0	0.0	19.6	0.0	78.3
	BWF 9	Production	0.0	0.0	0.0	0.0	0.0	0.0	55.2	0.0	66.3	36.8	0.0	0.0	158.4
		Baseline	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	11.5	0.0	0.0	46.0
	BWF 10	Production	0.0	0.0	0.0	0.0	0.0	0.0	110.5	137.0	0.0	20.3	0.0	0.0	267.7
		Baseline	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	92.1
	BWF 11	Production	0.0	0.0	0.0	0.0	0.0	0.0	83.6	102.8	0.0	55.2	0.0	0.0	241.5
		Baseline	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	69.1
	BWF 12	Production	0.0	0.0	0.0	0.0	0.0	0.0	100.1	0.0	82.2	0.0	0.0	0.0	182.3
		Baseline	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	0.0	0.0	17.3	69.1
	BWF 13	Production	0.0	0.0	0.0	0.0	0.0	64.4	0.0	137.0	109.6	0.0	0.0	0.0	311.0
		Baseline	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	0.0	0.0	23.0	92.1
City Well Field	NW	Production	0.0	0.0	0.0	12.2	0.0	145.8	100.1	0.0	145.8	100.1	0.0	119.5	623.5
		Baseline	50.6	0.0	0.0	50.6	0.0	0.0	50.6	0.0	0.0	50.6	0.0	0.0	202.6
	Torreon	Production	19.8	0.0	5.5	7.9	0.0	37.2	58.9	0.0	37.2	58.9	0.0	0.0	225.5
		Baseline	0.0	0.0	19.8	0.0	0.0	19.8	0.0	0.0	19.8	0.0	0.0	19.8	79.2
	Ferguson	Production	0.0	16.6	0.0	0.0	6.9	39.8	0.0	27.3	39.8	0.0	26.0	0.0	156.3
		Baseline	0.0	13.8	0.0	0.0	13.8	0.0	0.0	13.8	0.0	0.0	13.8	0.0	55.2
	Hickox	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Alto	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Agua Fria	Production	0.0	43.5	30.9	0.0	72.8	106.1	0.0	72.8	106.1	0.0	69.2	39.8	541.1
		Baseline	0.0	36.8	0.0	0.0	36.8	0.0	0.0	36.8	0.0	0.0	36.8	0.0	147.3
	Santa Fe	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	St. Mikes	Production	25.8	0.0	25.5	20.6	0.0	24.2	38.4	0.0	24.2	38.4	0.0	12.9	209.9
		Baseline	0.0	0.0	12.9	0.0	0.0	12.9	0.0	0.0	12.9	0.0	0.0	12.9	51.6
	Osage	Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0	0.0	0.0	0.0	36.8
		Baseline	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TOTALS	Baseline	45.6	60.0	61.9	40.7	173.6	477.4	915.5	913.0	729.0	355.7	203.8	172.2	4148.5
	Production	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	113.9	116.2	107.5	1350.7
	Combined	159.5	176.3	169.4	154.6	289.8	584.9	1029.4	1029.3	836.5	469.6	320.1	279.7	5499.1

Memorandum

Buckman Direct Diversion

Date: **April 5, 2015**

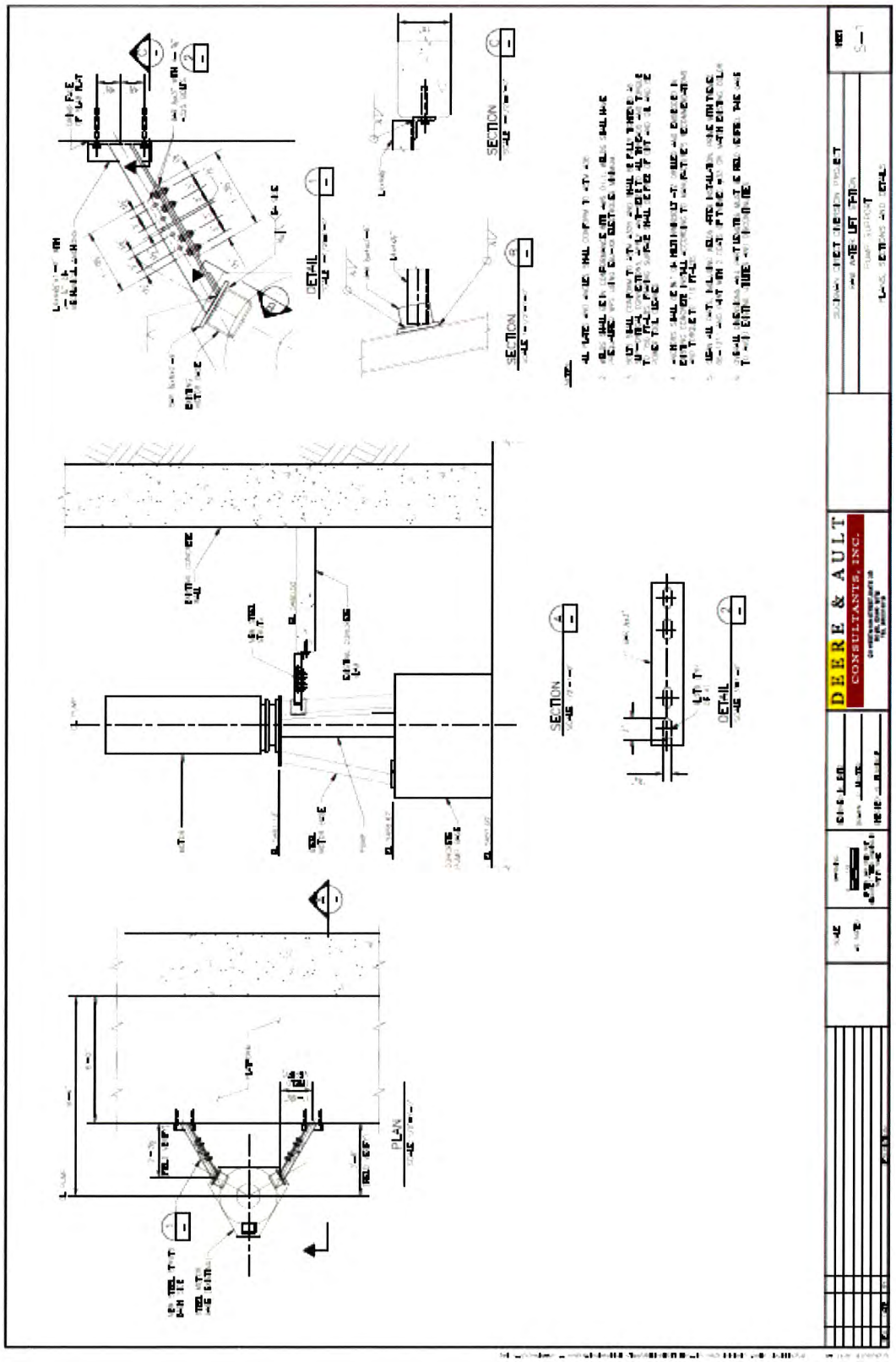
To: **Buckman Direct Diversion Board**

From: **Charles Vokes, BDD Facilities Manager** CV

Subject: **Update on Vibration Solutions to the BDD Raw Water Lift Station Pump System**

On September 1, 2016 the BDDB awarded RFP '17/02/P to Deere & Ault Consultants, Inc. for the BDD On-Call Engineering Services Contract in support of the BY 2016-2020 Buckman Direct Diversion Rehabilitation and Improvements to the Raw Water Delivery System project.

Part of this contract is Task Order #5, Task #4 which is for the "Review of the RWLS (Raw Water Lift Station) Rebuild Plans for Pumps No. 2 through 5". Included in this task order is vibration testing and plans for modifications to the pump stands and the addition of support systems to mitigate existing vibration issues. Initial modifications to the pump stands have already been completed by the BDD staff and the Deere and Ault engineers. Drawings and specifications for the additional support systems have been provided to the BDD staff (see attached). The BDD staff are procuring materials, to be followed by the construction and installation of the support systems. It is our goal to have these additional systems in place before pumps 2 and 3, which are in the process of being refurbished, are returned to service.


DEERE & AULT
CONSULTANTS, INC.

Memorandum

Buckman Direct Diversion

Date: **April 5, 2018**

To: **Buckman Direct Diversion Board**

From: **Nancy R. Long** NRL

Subject: **Election of Chair and Vice Chair**

ITEM AND ISSUE:

Election of Chair and Vice Chair to the Buckman Direct Diversion Board ("Board").

BACKGROUND AND SUMMARY:

The Joint Powers Agreement between the City and the County establishing the Buckman Direct Diversion Board provides that the Board shall annually elect a Chairperson and a Chairperson Pro-Tempore (Vice Chair).

The Rules of Order for the Board in regard to the election of the Chair and Vice Chair provide as follows:

> During the April meeting of each year, a Chair and Vice-Chair of the Board shall be elected. The Chair position shall rotate between a City and County member each year. The Vice-Chair shall be elected from the opposite entity. Elections shall also be held when required to fill any vacancy that occurs in the Chair or Vice-Chair position.

Since the Chair elected at the last election (April 2017) was a County Commissioner, the Chair to be elected at this meeting, shall be a member of the City Council and the Vice-Chair shall be a County Commissioner.

ACTION REQUESTED:

It is recommended that the Board elect its officers for the next year.