



Buckman Direct Diversion

A joint regional project of the City of Santa Fe and Santa Fe County to build a reliable and sustainable water supply.

Memorandum

Date: February 17, 2015
To: Buckman Direct Diversion Board
From: Michael Dozier, Interim Chief Operator BDD
Subject: Update on BDD Operations for the month of January 2015

ITEM:

1. This memorandum is to update the Buckman Direct Diversion (BDD) Board on BDD operations during the month of January 2015. The BDD diversions and deliveries have averaged, in Million Gallons Daily (MGD) as follows:
 - a. Raw water diversions: 3.76 MGD Average
 - b. Finished Drinking water deliveries through Booster Station 4A: 2.31 MGD Average
 - c. Finished Drinking water deliveries through Booster Station 5A: 1.15 MGD Average
 - d. Raw water delivery to Las Campanas at BS2A: 2.12 MG Total.
2. The BDD is providing approximately 60 percent of the water supply to the City and County for the month.
3. Please see the following pages from the Monthly report to the Office of the State Engineer (OSE) for accurate information for the month of January 2015.
4. Please note all prior years are also included for reference.



BACKGROUND AND SUMMARY:

**Monthly Diversions under SP-2847-E, SP-4842, and SP-2847-N-A
January 2015**

BDD Diversion of San Juan-Chama Water	af	mg
Total SJC water arrived at the BDD diversion site	244.18	79.57
Total SJC diverted at BDD	244.18	79.57
Total SJC available for offsetting depletions under RG-20516.	0	0.00

Total BDD water diverted from all water rights	af	mg
BDD Current Monthly Total	403.01	131.32
<i>SJC Diversion under Permit SP-2847-E</i>	<i>244.18</i>	<i>79.57</i>
<i>City of Santa Fe</i>	<i>244.18</i>	<i>79.57</i>
<i>Santa Fe County</i>	<i>0.00</i>	<i>0.00</i>
<i>SJC Diversion under SP-2847-N-A (CLCI)</i>	<i>0.00</i>	<i>0.00</i>
<i>Rio Grande native water rights (SP-4842;SFCCounty)</i>	<i>158.83</i>	<i>51.75</i>

Metered Diversions under Permit SP-2847-E and SP-4842						
Meter Serial Number	OSE Meter Number	Current Month Meter Reading	Previous Month Meter Reading	Diversion by Meter		
				ac-ft	mg	
CC004816000-Diversion	14113	1921.478	1874.3689	144.57	47.11	
CC004916000-Diversion	14114	1951.382	1908.1216	132.76	43.26	
CC004A16000-Diversion	14115	1933.774	1885.1042	149.36	48.67	
CC000A16000-Return	14255	192.2485	184.5315	23.68	7.72	
Total Metered Diversions				403.01	131.32	

Buckman Direct Diversion Monthly SJC and Native Diversions

January 2015

Month	Total SJC Release (AF)	SJC Conveyance Losses (AF)	Total SJC Available at BDD (AF)	SJC Diversion, SP-2847-E (AF)	SJC Diversion, SP-2847-N-A (AF)	Total Native Rio Grande Diversion SP-4842 (AF)	Release of SJC in Elephant Butte (AF)	Total BDD Surface Diversion (all permits)	SJC from SP-2847-E used to offset Buckman Wells RG-20516 (AF)	SJC from SP-2847-N used to offset Buckman Wells RG-20516 (AF)
JAN	237.20	2.34	244.18	244.18	0.00	158.83	0	403.01	0	0
FEB										
MAR										
APR										
MAY										
JUN										
JUL										
AUG										
SEP										
OCT										
NOV										
DEC										
TOTAL	237.20	2.34	244.18	244.18	0.00	158.83	0.00	403.01	0.00	0.00

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

Month	Total Release (AF)	ABIQUIU		
		City of Santa Fe (AF)	Santa Fe County (AF)	Club at Las Campanas (AF)
JAN	237.20	237.20	0	0
FEB	0.00	0.00	0	0
MAR	0.00	0.00	0	0
APR	0.00	0.00	0	0
MAY	0.00	0.00	0	0
JUN	0.00	0.00	0	0.00
JUL	0.00	0.00	0	0.00
AUG	0.00	0.00	0	0.00
SEP	0.00	0.00	0	0.00
OCT	0.00	0.00	0	0.00
NOV	0.00	0.00	0	0.00
DEC	0.00	0.00	0	0.00
TOTAL	237.20	237.20	0.00	0.00

Buckman Direct Diversion Monthly SJC and Native Diversions

Dec-14

Month	Total SJC Release (AF)	SJC Conveyance Losses (AF)	Total SJC Available at BDD (AF)	SJC Diversion, SP-2847-E (AF)	SJC Diversion, SP-2847-N-A (AF)	Total Native Rio Grande Diversion SP-4842 (AF)	Release of SJC in Elephant Butte (AF)	Total BDD Surface Diversion (all permits)	SJC from SP-2847-E used to offset Buckman Wells RG-20516 (AF)	SJC from SP-2847-N used to offset Buckman Wells RG-20516 (AF)
JAN	383.35	3.74	390.34	390.34	0.00	12.68	0	403.01	0	0
FEB	349.51	3.28	341.55	341.55	0.00	11.38	0	352.93	0	0
MAR	373.88	3.66	381.69	357.07	34.09	148.83	0	530.52	0	0
APR	178.75	1.70	176.78	92.46	84.47	227.22	0	404.00	0	0
MAY	491.46	4.61	480.35	389.13	91.22	374.86	0	855.21	0	0
JUN	427.50	3.96	412.65	295.07	117.58	292.84	0	705.49	0	0
JUL	425.22	4.14	431.96	399.51	32.46	72.32	0	504.28	0	0
AUG	496.68	4.60	479.66	479.66	0.00	96.07	0	575.74	0	0
SEP	552.71	5.40	562.83	562.83	0.00	84.85	0	647.68	0	0
OCT	381.93	3.63	378.30	378.30	0.00	142.46	0	520.76	0	0
NOV	441.14	4.09	426.17	426.17	0.00	11.59	0	437.76	0	0
DEC	423.99	4.13	430.74	430.74	0.00	19.56	0	450.30	0	0
TOTAL	4,926.12	46.93	4,893.03	4,542.84	359.82	1,494.66	0.00	6,387.69	0.00	0.00

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

Month	Total Release (AF)	ABIQUIU		
		City of Santa Fe (AF)	Santa Fe County (AF)	Club at Las Campanas (AF)
JAN	383.35	383.35	0.00	0.00
FEB	349.51	349.51	0.00	0.00
MAR	373.88	346.37	0.00	27.37
APR	178.75	93.42	0.00	85.41
MAY	491.46	399.41	0.00	92.41
JUN	427.50	307.54	0.00	120.28
JUL	425.22	397.13	0.00	28.09
AUG	496.68	496.68	0.00	0.00
SEP	552.71	552.71	0.00	0.00
OCT	381.93	381.93	0.00	0.00
NOV	441.14	441.14	0.00	0.00
DEC	423.99	423.99	0.00	0.00
TOTAL	4,926.12	4,573.19	0.00	353.55

Buckman Direct Diversion Monthly SJC and Native Diversions

December 2013

Month	Total SJC Release (AF)	SJC Conveyance Losses (AF)	Total SJC Available at BDD (AF)	SJC Diversion, SP-2847-E (AF)	SJC Diversion, SP-2847-N-A (AF)	Total Native Rio Grande Diversion SP-4842 (AF)	Release of SJC in Elephant Butte (AF)	Total BDD Surface Diversion (all permits)	SJC from SP-2847-E used to offset Buckman Wells RG-20516 (AF)	SJC from SP-2847-N used to offset Buckman Wells RG-20516 (AF)
JAN	439.04	4.24	441.79	441.79	0	44.09	0	485.88	0	0
FEB	261.03	2.47	257.94	257.94	0	10.49	0	268.42	0	0
MAR	353.69	3.30	343.57	343.57	0	75.66	0	419.23	0	0
APR	680.73	6.34	661.33	661.33	0	89.47	0	750.80	0	0
MAY	1045.27	9.88	1030.46	1030.46	0	22.86	0	1053.32	0	0
JUN	817.91	7.85	818.00	734.56	83.44	260.03	0	1078.03	0	0
JUL	606.85	5.90	614.73	397.47	78.83	0.00	0	476.30	83.70	54.73
AUG	108.68	0.91	95.34	41.68	36.91	0.00	0	78.59	5.58	11.18
SEP	136.77	1.43	149.29	63.86	53.76	0.00	0	117.61	25.36	6.32
OCT	255.24	2.46	256.53	213.87	42.66	72.92	0	329.45	0	0
NOV	196.45	1.88	195.50	187.02	8.48	117.33	0	312.83	0	0
DEC	293.76	2.63	274.19	274.19	0.00	12.25	0	286.44	0	0
TOTAL	5195.42	49.29	5138.67	4647.73	304.07	705.09	0.00	5656.89	114.64	72.23

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

Month	Total Release (AF)	ABIQUIU		
		City of Santa Fe (AF)	Santa Fe County (AF)	Club at Las Campanas (AF)
JAN	439.04	439.04	0	0
FEB	261.03	261.03	0	0
MAR	353.69	353.69	0	0
APR	680.73	680.73	0	0
MAY	1045.27	1045.27	0	0
JUN	817.91	729.30	0	88.60
JUL	606.85	473.27	0	133.58
AUG	108.68	65.21	0	43.47
SEP	136.77	83.87	0	52.90
OCT	255.24	211.15	0	44.09
NOV	196.45	186.31	0	10.15
DEC	293.76	293.76	0	0.00
TOTAL	5195.42	4822.62	0.00	372.79

Buckman Direct Diversion Monthly SJC and Native Diversions

December 2012

Month	Total SJC Release SP-2847-E (AF)	Conveyance Losses (AF)	Total SJC Available at BDD Diversion (AF)	Total SJC Diversion SP-2847-E (AF)	Total Native Rio Grande Diversion SP-4842 (AF)	Release of SJC in Elephant Butte (AF)	Total BDD Surface Diversion SP-2847-E plus SP-4842 (AF)	SJC used to offset Buckman Wells RG-20516 (AF)
JAN	448.09	4.06	447.00	411.56	5.02	0	416.59	35.44
FEB	210.29	1.97	216.94	208.13	32.21	0	240.34	8.81
MAR	335.75	2.94	323.61	312.85	59.21	0	372.06	10.76
APR	528.63	4.72	519.90	519.90	108.61	0	628.51	0.00
MAY	660.18	6.24	651.05	651.05	145.51	0	796.55	0.00
JUN	722.36	6.79	692.21	692.21	120.92	0	813.12	0.00
JUL	152.03	2.23	191.75	157.16	0.00	0	157.16	34.60
AUG	86.08	0.58	60.90	60.90	239.96	0	300.87	0.00
SEP	637.17	6.05	630.92	630.92	110.07	0	740.99	0.00
OCT	747.21	7.14	744.87	744.87	50.82	0	795.69	0.00
NOV	479.19	4.63	482.65	482.65	120.91	0	603.56	0.00
DEC	442.67	4.17	434.71	434.71	119.44	0	554.15	0.00
TOTALS	5449.67	51.53	5396.51	5306.90	1112.67	0.00	6419.57	89.61

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

Month	Total Release (AF)	HERON		EL VADO		ABIQUIU	
		CITY	COUNTY	CITY	COUNTY	CITY	COUNTY
JAN	448.09	0.00	0.00	0.00	0.00	448.09	0.00
FEB	210.29	0.00	0.00	0.00	0.00	210.29	0.00
MAR	335.75	0.00	0.00	0.00	0.00	335.75	0.00
APR	528.63	0.00	0.00	0.00	0.00	528.63	0.00
MAY	660.18	0.00	0.00	0.00	0.00	660.18	0.00
JUN	722.36	0.00	27.21	0.00	0.00	695.15	0.00
JUL	152.03	0.00	21.42	0.00	0.00	130.61	0.00
AUG	86.08	0.00	0.00	0.00	0.00	86.08	0.00
SEP	637.17	0.00	0.00	0.00	0.00	637.17	0.00
OCT	747.21	0.00	0.00	0.00	0.00	747.21	0.00
NOV	479.19	0.00	0.00	0.00	0.00	479.19	0.00
DEC	442.67	0.00	0.00	0.00	0.00	442.67	0.00
TOTALS	5449.67	0.00	48.63	0.00	0.00	5401.04	0.00

Note: Grey fields indicate revisions to previous monthly report

MEMORANDUM

TO: City of Santa Fe Public Utilities Committee
City of Santa Fe Water Conservation Committee
Buckman Direct Diversion Board

FROM: Rick Carpenter, Water Resources and Conservation Manager *RC*

VIA: Nick Schiavo, Public Utilities Department and Water Division Director

DATE: February 18, 2015

SUBJECT: 42nd Monthly Update on Drought and Water Resource Management

CURRENT UPDATE – GENERAL WATER RESOURCE MANGEMENT

As the Committee/Board is aware, our region is still suffering through a drought. Our region has gone through four consecutive years of record drought and heat, and it appears that we may be heading into our fifth year of drought. This drought is likely present significant challenges to all water purveyors, utilities, and irrigators going forward into the rest of this water-year.

July/August/September, 2014 yielded good summer rains due to a series of moist northeast cold fronts and monsoonal flow, but the monsoons generally exited by early October. Most models are still predicting the likelihood of a return of an El Nino weather pattern, 50%-60% chance of a return to El Nino conditions with normal to above normal precipitation over the rest of winter and through early spring. This could mean good precipitation for the remaining winter months (snow pack) (see attached figure). Therefore, while El Nino seems to be weakening relative to early predictions, normal to above normal snow pack is still likely over the next several weeks. The most recent February NOAA ENSO update states that:

ENSO-neutral (El Nino) conditions continue. Positive equatorial sea surface temperature (SST) anomalies continue across the Pacific Ocean. There is an approximate 50%-60% chance of El Nino conditions for winter and early spring."

It is worth noting that City of Santa Fe has invested in a robust and diverse portfolio of four distinct water supply sources that allows for flexibility in meeting demand: Buckman well field, City well field, Canyon Road Water Treatment Plant on the Upper Santa Fe River, and the Buckman Direct Diversion on the Rio Grande. Supply from these groundwater and surface water sources are expected to be adequate in meeting local demands. The City also has a considerable amount of SJCP water stored ("banked from previous years") in reservoirs upstream from the BDD diversion, and that water could be called for if needed over the coming 2 or 3 years.

LOCAL CONDITIONS

Source of Supply Utilization Summary

January 2014

City Wells	14.78mg/m	45.36af/m
Buckman Wells	0.00mg/m	0.00af/m
CRWTP	84.05mg/m	257.93af/m
BRWTP	141.46mg/m	434.14af/m
<i>Other Wells(Osage, MRC, etc)</i>	<i>0.00mg/m</i>	<i>0.00af/m</i>

Upper Santa Fe River/CRWTP

	Total Combined Reservoir Level	Santa Fe Snow Gage	Reservoir Inflow
February 18, 2015	7.1.0%	34.00 inches	2.33 MGD
5-Year Average for This Date (2010 – 2014)	45.35 %	32.40 inches	1.53 MGD

As of February 18, 2015 total combined storage in Nichols and McClure reservoirs is 7.1% of total (or about 280 acre-feet of storage out of 4,000 acre-feet of capacity). Some flows have been by-passed due to construction on the new intake facilities. Minor inflows are expected to continue for the near future and so the reservoirs have been managed to allow for water treatment plant production, active construction, and draining/drying.

Buckman Regional Water Treatment Plant (BDD)

Flows in the Rio Grande are relatively good for this time of year, and turbidity has been generally good. The BDD has been able to divert and treat in line with demand.

REGIONAL CONDITIONS

Rio Grande Basin

Surface flows in the Rio Grande and its tributaries through mid-January have been relatively good. However, storage levels in regional reservoirs are still very low (see attached figure). There was very little carry-over storage from 2014 into 2015. A good snow pack this winter is essential if there is to be significant runoff into regional reservoirs for next high demand season, but time is running short.

There are no new updates regarding Wild Earth Guardians legal actions or endangered species issues.

San Juan Basin

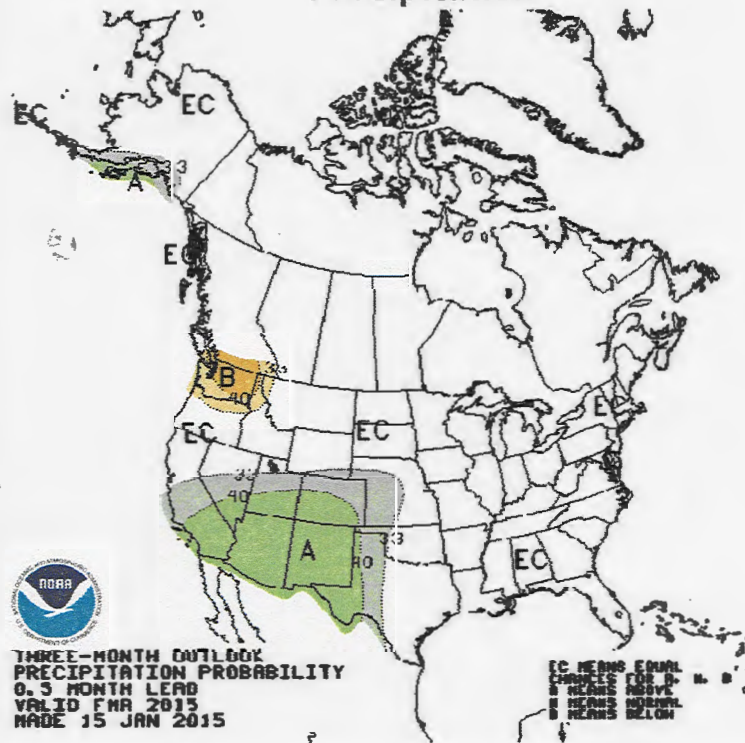
It should be stressed that, conditions could significantly worsen for San Juan Chama Project deliveries this coming year, if the drought persists, due to a lack of carry-over storage in Heron from last year to this year. Heron Reservoir is currently at a very low level. However, the San Juan Basin as well as the local Sangre de Cristo Mountains have experienced several snow storms recently. Recent estimates by the BoR suggest that the snow pack is about 50-60% of normal for this time of year (through December 2014), but with the dry conditions and unseasonably warm temperatures, these figures will likely continue to be revised downward.

U. S. Seasonal Outlooks

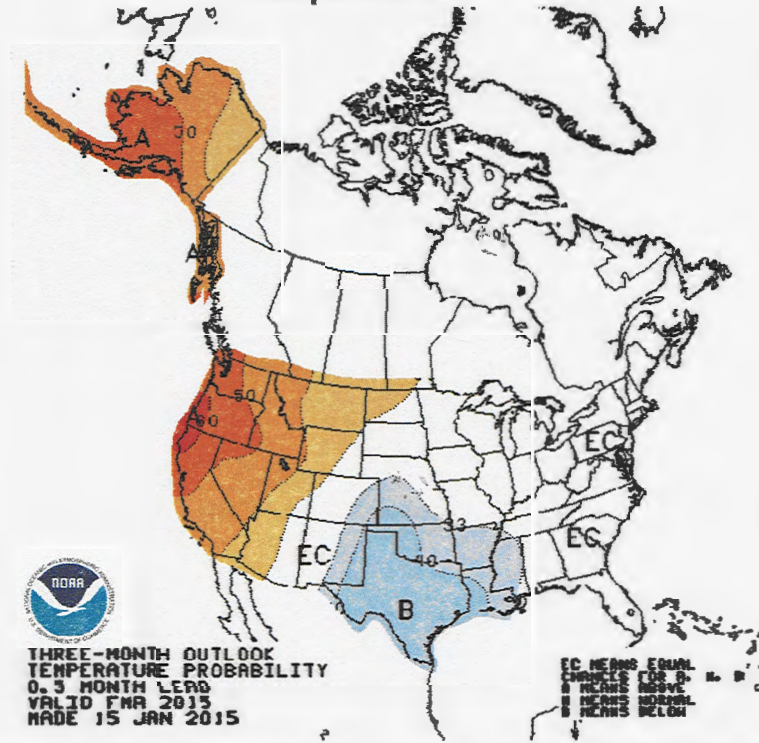
February - April 2015

The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.

Precipitation



Temperature



Online Resources

Portions of the information provided in this figure can be accessed at the Natural Resources Conservation Service

Arizona: <http://1.usa.gov/19e2BdJ>

New Mexico: http://www.wcc.nrcs.usda.gov/cgibin/resv_rpt.pl?state=new_mexico

Notes

The map gives a representation of current storage for reservoirs in Arizona and New Mexico. Reservoir locations are numbered within the blue circles on the map, corresponding to the reservoirs listed in the table. The cup next to each reservoir shows the current storage (blue fill) as a percent of total capacity. Note that while the size of each cup varies with the size of the reservoir, these are representational and not to scale. Each cup also represents last year's storage (dotted line) and the 1981–2010 reservoir average (red line).

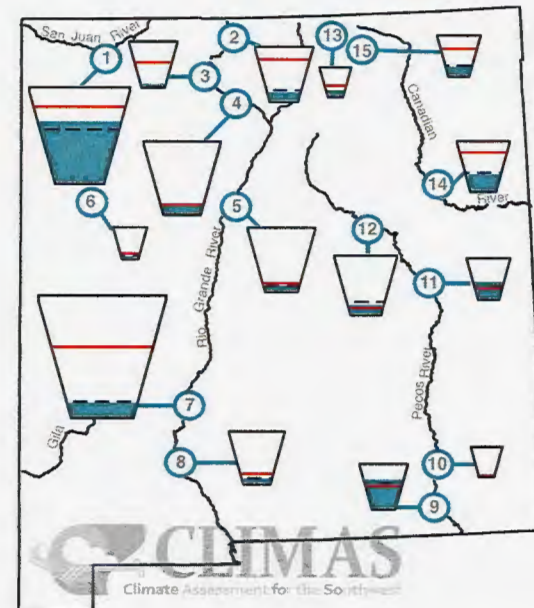
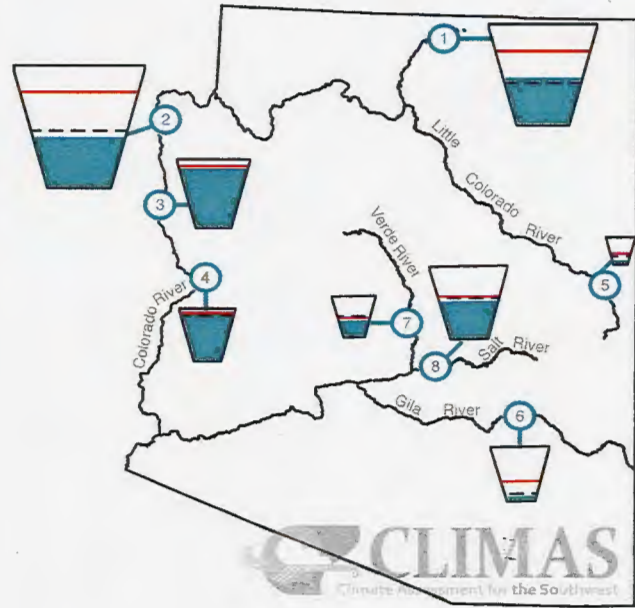
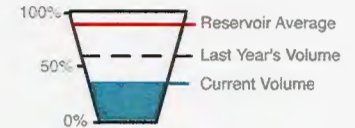
The table details more exactly the current capacity (listed as a percent of maximum storage). Current and maximum storage are given in thousands of acre-feet for each reservoir. One acre-foot is the volume of water sufficient to cover an acre of land to a depth of 1 foot (approximately 325,851 gallons). On average, 1 acre-foot of water is enough to meet the demands of 4 people for a year. The last column of the table lists an increase or decrease in storage since last month. A line indicates no change.

These data are based on reservoir reports updated monthly by the National Water and Climate Center of the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS).

Reservoir Volumes

DATA THROUGH DECEMBER 31, 2014

Data Source: National Water and Climate Center, Natural Resources Conservation Service



Reservoir	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Lake Powell	47%	11,523.0	24,322.0	-406.0
2. Lake Mead	41%	10,676.0	26,169.0	367.0
3. Lake Mohave	86%	1,559.7	1,810.0	39.6
4. Lake Havasu	89%	551.1	619.0	-24.6
5. Lyman	13%	4.0	30.0	0.2
6. San Carlos	8%	74.3	875.0	-0.5
7. Verde River System	38%	110.0	287.4	-3.3
8. Salt River System	50%	1,020.5	2,025.8	11.1

*KAF: thousands of acre-feet

Reservoir	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Navajo	64%	1090.5	1,696.0	-5.4
2. Heron	16%	64.3	400.0	-3.6
3. El Vado	7%	13.5	190.3	-4.2
4. Abiquiu	11%	128.6	1,192.8	0.9
5. Cochiti	9%	45.8	491.0	-0.1
6. Bluewater	6%	2.4	38.5	0.0
7. Elephant Butte	12%	256.4	2,195.0	43.9
8. Caballo	10%	32.5	332.0	0.9
9. Lake Avalon	65%	2.6	4.0	0.6
10. Brantley	8%	81.1	1,008.2	1.6
11. Sumner	41%	41.5	102.0	3.3
12. Santa Rosa	16%	69.2	438.3	-0.6
13. Costilla	21%	3.3	16.0	0.4
14. Conchas	33%	83.9	254.2	-0.7
15. Eagle Nest	22%	17.2	79.0	0.2

* in KAF = thousands of acre-feet

Online Resources

Figure 1,4
High Plains Regional Climate Center - HPRCC
<http://www.hprcc.uni.edu/maps/current/>

Figure 2
National Climatic Data Center - NCDC
<http://www.ncdc.noaa.gov>

Figure 3
Natural Resources Conservation Service - NRCS
<http://www.wcc.nrcs.usda.gov/gis/snow.html>

Figure 5-6
NOAA-Climate Prediction Center
<http://www.cpc.ncep.noaa.gov/products/forecasts/>

January Southwest Climate Outlook

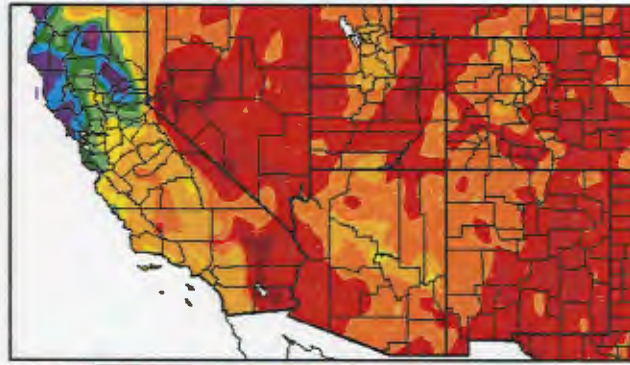


Figure 1: Total Precipitation 11/23/2014 - 01/21/2015

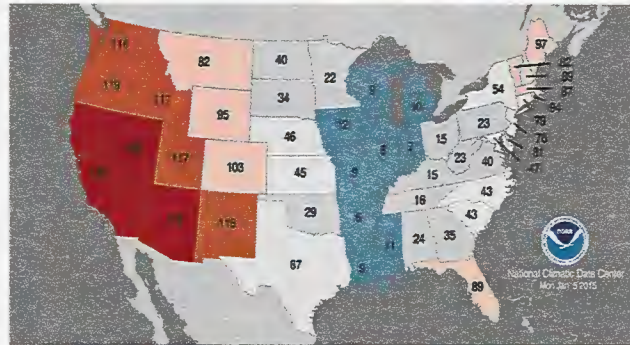


Figure 2: Statewide Average Temperature Ranks Jan-Dec 2014

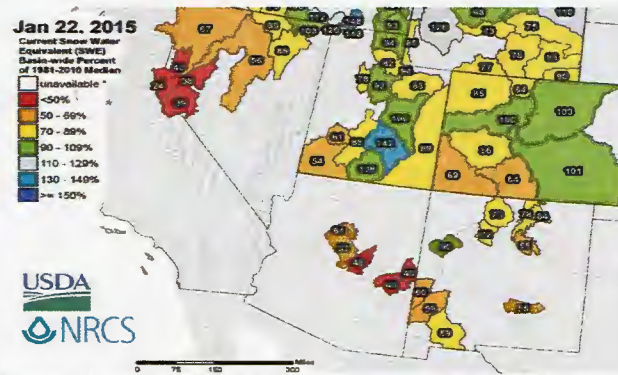


Figure 3: Percent of Normal Snow Water Equivalent (SWE) by Basin

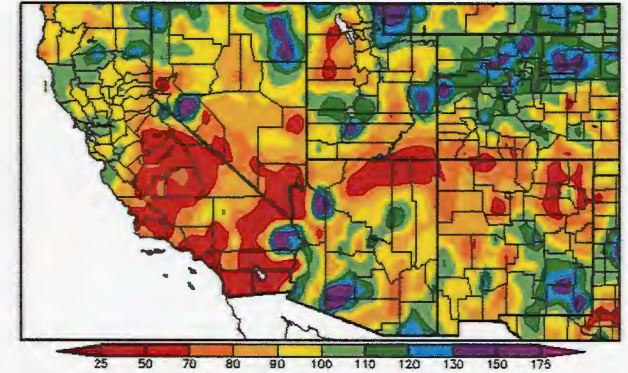
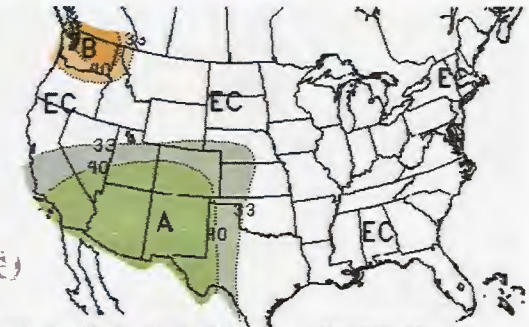
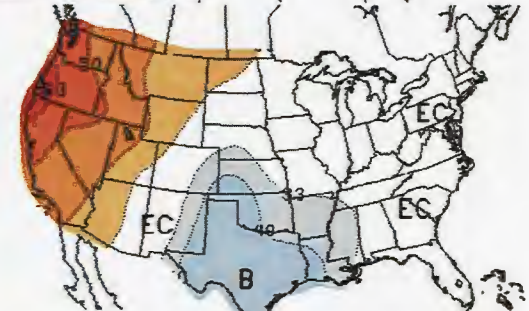


Figure 4: Percent of Normal Precipitation 1/22/2014 - 1/21/2015



THREE-MONTH OUTLOOK
 PRECIPITATION PROBABILITY
 0.5 MONTH LEAD
 VALID FMR 2015
 MADE 15 JAN 2015.



THREE-MONTH OUTLOOK
 TEMPERATURE PROBABILITY
 0.5 MONTH LEAD
 VALID FMR 2015
 MADE 15 JAN 2015

Figure 5-6: Three-Month Seasonal Outlook



A joint regional project of the City of Santa Fe and Santa Fe County to build a reliable and sustainable water supply.

Memorandum

Date: February 23, 2015
To: Buckman Direct Diversion Board
From: Charles Vokes, BDD Facilities Manager
Subject: 2015 Annual Operating Plan

Item and Issue:

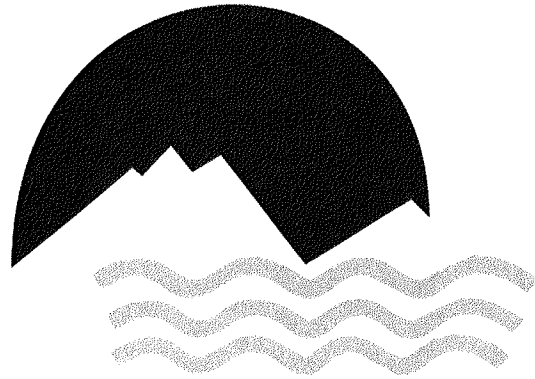
Informational Update of the Buckman Direct Diversion's 2015 Annual Operating Plan

Background and Summary:

The primary purpose of this Annual Operating Plan (AOP) is to collect and summarize the projected wholesale water delivery orders of the City of Santa Fe, Santa Fe County, and Las Campanas, collectively called the BDD Partners, for Calendar year 2015. Additionally this AOP sets forth specific procedures and coordination requirements among the BDD Facilities Manager, the BDD Project Manager, and the BDD pertaining to water orders, water deliveries, water use accounting, water rights, and limitations on diversions for compliance with legal conditions. The intergovernmental agreements designate the City of Santa Fe's Sangre De Cristo Water Division as the Project Manager through December 1st 2015.

The Facility Operations and procedures Agreement (FOPA) at Section 27 requires each BDD Partners to provide its projected daily, weekly, and monthly project water orders for the upcoming year by October 1 of each year. The BDD Facilities Manager will distribute the draft AOP containing a draft delivery schedule with all of the Partners' project water delivery orders and associated procedures to the BDD Partners for review and comment by December 1 of each year. The calendar year is the period covered by the AOP to correspond to annual state administration of water rights.





Buckman Direct Diversion

2015 Annual Operating Plan

BUCKMAN DIRECT DIVERSION
2015 Annual Operating Plan

Introduction

The Buckman Direct Diversion (BDD) has continued to successfully operate and produce high quality drinking water for the citizens of Santa Fe and Santa Fe County since beginning operations in 2011.

The primary purpose of this Annual Operating Plan (AOP) is to collect and summarize the projected wholesale water delivery orders of the City of Santa Fe (City), Santa Fe County independent water utility (County), and the Club of Las Campanas, Inc. (CLCI), collectively called the BDD Partners, for calendar year 2015. Additionally, this AOP sets forth specific procedures and coordination requirements among the BDD Facilities Manager, the BDD Support Entity, City of Santa Fe (SE), and the BDD Partners pertaining to water orders, water deliveries, water use accounting, water rights, and limitations on diversions for compliance with legal conditions. The intergovernmental agreements designate the City of Santa Fe as the Support Entity through December 1st, 2015.

The Facility Operations and Procedures Agreement (FOPA) at Section 27 requires each BDD Partners to provide its projected daily, weekly, and monthly project water orders for the upcoming year by October 1 of each year. The BDD Facilities Manager, as agent of the SE, will distribute the draft AOP containing a draft delivery schedule with all of the Partners' projected water delivery orders and associated procedures to the BDD Partners for review and comment by December 1 of each year. The calendar year is the period covered by the AOP to correspond to annual state administration of water rights.

Policy direction with regard to the AOP is limited to the following items:

1. Status and approval of the Annual Operating Plan. The BDD Facilities Manager will draft and finalize an AOP and will submit it to each partner for review and comment. The AOP subject matter is limited to water orders and the technical and legal requirements of placing orders, assuring diversions comply with water rights and Endangered Species Act requirements, and accounting for diversions and deliveries of water. It does not establish any new authorities or governance policies and therefore will not be submitted for BDD Board Approval. The final version will be approved by signature of an authorized official of each Partner and the BDD Facilities Manager. It may be amended as needed and as agreed. Amendment requires the same four signatures of approval.
2. Water Rights. The BDD Intergovernmental Agreements require that each BDD Partner own and maintain valid water rights to support its orders for diversion and delivery of its water by the BDD. It is important this structure is literally implemented by the BDD Partners such that the BDD Facilities Manager can rely on the Partners to assure that water is legally available for daily diversion in amounts to meet water orders.

BDD Partners 2015 Water Delivery Orders

In accordance with the Project Management and Fiscal Services Agreement (PMFSA) at 6.F., the BDD Facilities Manager requested 2015 water orders from each BDD Partner.

Table 1 provides data regarding the BDD Partners' monthly water orders for 2015 in million gallons (MGal) and acre-feet (Ac-Ft).

2015 Buckman Direct Diversion (BDD) Partner's Water Requests

	Santa Fe County	Club @ Las Campanas (via County)	Club @ Las Campanas Raw Water	City of Santa Fe	Total	
Jan	0.78	0.000	0.053	3.90	4.73	14.53
Feb	0.70	0.000	0.116	4.00	4.82	14.78
Mar	0.80	0.263	0.000	3.50	4.56	14.00
Apr	0.90	0.869	0.000	4.50	6.27	19.24
May	1.13	1.051	0.000	4.50	6.68	20.50
Jun	1.28	0.000	1.358	5.50	8.14	24.97
Jul	1.33	0.000	1.209	6.00	8.54	26.21
Aug	1.38	0.000	0.894	6.00	8.27	25.39
Sep	1.34	0.652	0.000	5.50	7.49	22.99
Oct	1.03	0.368	0.000	4.60	6.00	18.41
Nov	0.74	0.000	0.054	4.00	4.79	14.71
Dec	0.75	0.000	0.053	4.00	4.80	14.74
	Million Gallons Per Year					Acre-ft/year
Annual Total	370.60	97.77	114.09	1,704.50	2,286.96	7,018.42

Figure 1 illustrates the BDD Partners' 2015 water delivery requests per month

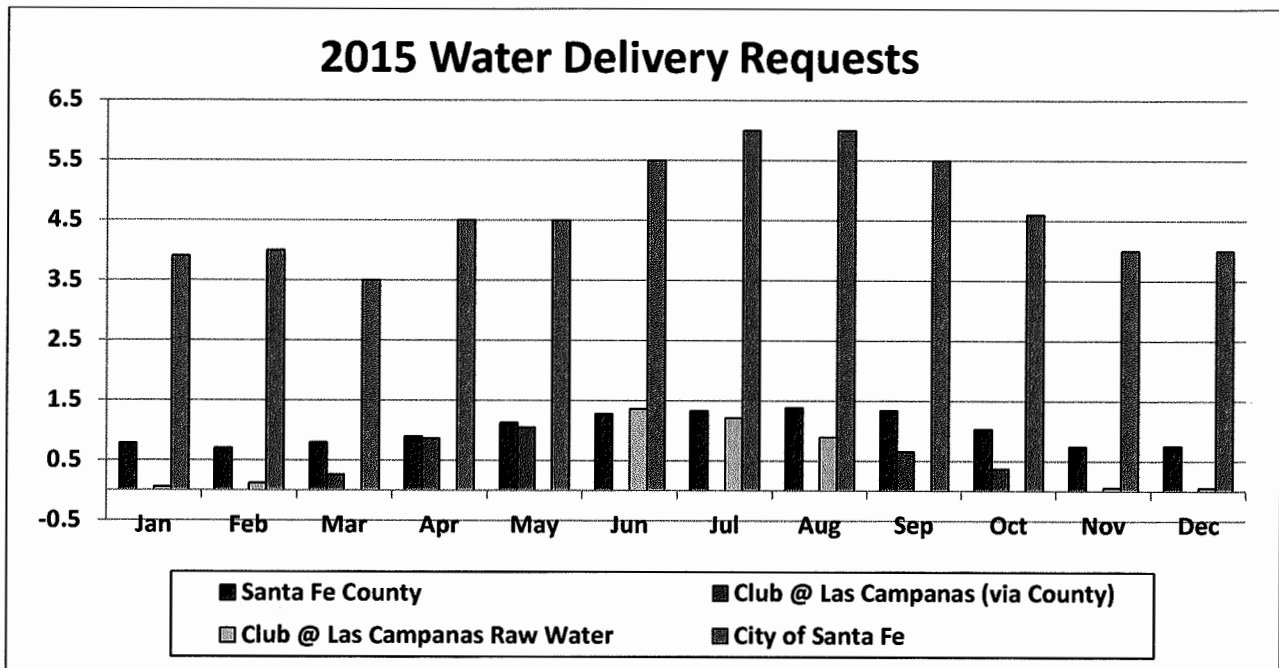
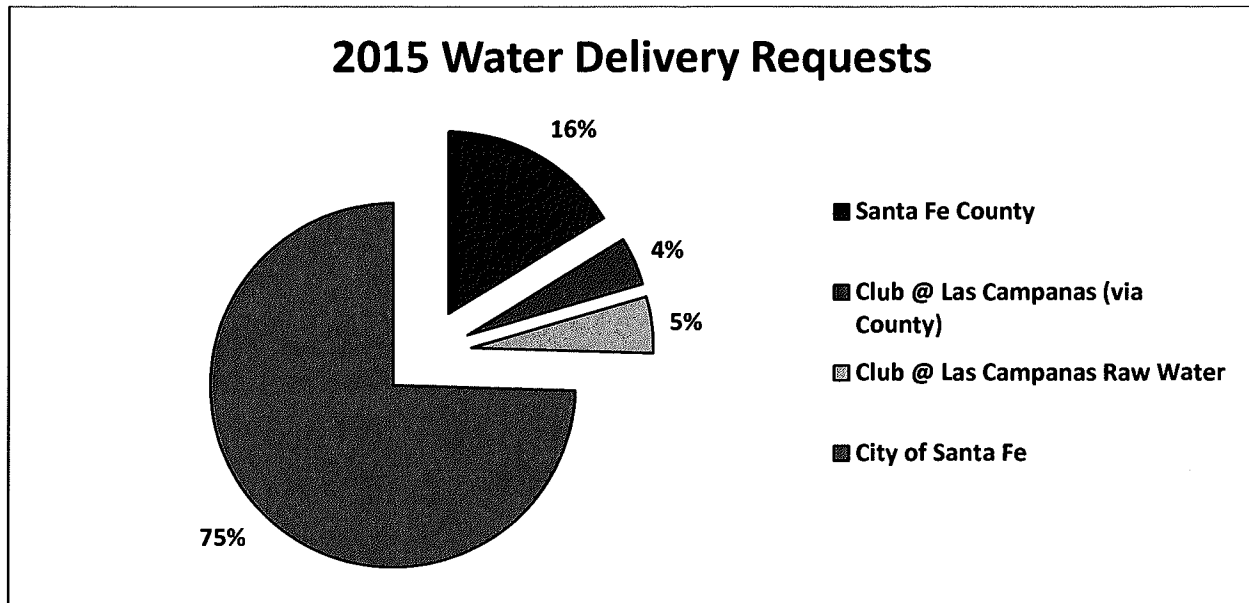


Figure 2 illustrates the BDD Partners' 2015 water delivery requests per month



Additional Purposes of this Annual Operating Plan

This fifth year of BDD operations the AOP will address normal operations, unique issues associated with the complex new project's operation, as well as unforeseen and / or one-time need for issues. The BDD Facilities Manager and partners undoubtedly will have to resolve other issues in order for the BDD to fulfill and properly account for Partners' wholesale water delivery orders in 2015 and to provide needed operational flexibility to meet the BDD purposes.

The remainder of this 2015 AOP individually addresses the following topics:

1. BDD Purposes and Adaptive Management to Meet the Partners' Changes to their Orders
2. BDD Facilities Manager Acceptance of LCLP Water Delivery Order
3. Water Rights:
 - a. Description of Partners' Water Rights
 - b. Roles and Responsibilities of Partners Regarding Water Rights
 - c. Native Water Rights Diversion Compliance with the Endangered Species Act
 - d. San Juan-Chama Project Orders, Reservoir Releases Calls and Reconciliation with Actual Use
4. Water Delivery Metering and Accounting
5. Fiscal Responsibilities
6. Adjustment of Daily Water Delivery Orders by the Partners to Reflect Actual Utility Demand
7. Non-Delivery of BDD Wholesale Water Supply Due to Uncontrollable Circumstances
8. Operations Features To Conserve Resources
9. Annual Operating Plan Approval

1. BDD Purposes and Adaptive Management to Meet the Partners Changes to their Orders

BDD purposes include supplying all or part of the public water system base load demand, peak production when needed, and providing a reliable and sustainable source of surface water supply to reduce reliance on groundwater resources. To meet the Partners' water demand, this AOP assumes continuous BDD production whenever the BDD is operational.

This AOP recognizes that actual water deliveries by the BDD will deviate from the BDD Partner water orders. While these deviations require active management, adjustments have become part of daily and weekly operating procedure. Deviations may result from BDD facilities shutdowns (planned and unplanned), adjustments to meet monthly delivery targets, adjustment to meet unanticipated demand needs (often due to precipitation or temperature), and/or to allow the City to conserve water in the municipal reservoirs as a pro-active response to drought mitigation.

The BDD will work with the BDD Partners and the BDD Board to adaptively manage BDD water deliveries to meet changes to Partner orders for BDD water deliveries, stay within the approved annual operating budget, and to resolve associated issues and problems.

The City coordinates water deliveries from the BDD with production from its two groundwater well fields and the Canyon Road Water Treatment Plant to provide drinking water to City and County customers, and, when necessary, wholesale deliveries of bulk water to the County. The 2005 Water Resources Agreement between the City and County provides for delivery of up to 500 acre-feet of wholesale water to the County; the County currently takes delivery of wholesale water when the BDD is not operating. The 2005 Water Resources Agreement also provides for drought protection water for the County under catastrophic conditions. The Las Campanas Homeowners Water Cooperative Association (Water Coop) is a bulk potable water customer of the County; The Club of Las Campanas Inc. (CLCI) is a raw water customer of the County and the BDD.

2. BDD Facilities Manager Acceptance of CLCI Water Delivery Order

In November 2011, the County entered into a Raw Water Supply Agreement with CLCI to provide up to 600 acre-feet of raw water deliveries for CLCI's golf course irrigation. The County agreed to deliver raw water to Booster Station 2A, where CLCI installed pumps, a 12" pipeline, and meters to convey the water to CLCI's facilities. The raw water delivery system is designed to be operated from both the BDD's and CLCI's SCADA systems. CLCI's maximum pump capacity at BS2A is 3.02mgd (2100gpm) and the BDD's minimum raw water pump rate is 4.5mgd (3125gpm). The BDD and Partners have developed and agreed on a revised operating plan to assure continued raw water supply for CLCI when the BDD is not diverting water from the Rio Grande for other Partners.

CLCI diversified its water rights portfolio in 2014 by leasing 600acft of SJC water and expects to have 600acft in 2015. CLCI will be seeking storage at Abiquiu reservoir to make this water readily available. During 2015 CLCI will utilize their own San Juan-Chama water rights to receive 350acft directly through the BDD and the County will provide CLCI with at least 300acft of raw water.

BDD, County, and CLCI staff has developed and established operational procedures to provide CLCI with raw water during times when the BRWTP should choose not to accept raw water but the raw water quality meets the BDD's policy requirements. Currently CLCI has approximately a thirty (30) day supply in onsite storage capacity.

3. Water Rights

A clear delineation of roles and responsibilities assists in the complex management of water rights and water resources aspects of BDD diversions.

While the BDD is responsible for assuring that its diversions comply with all applicable laws and regulations and accounting of water use associated with cost accounting among BDD Partners, it is the BDD Partners' responsibility to maintain valid water rights to support their water orders.

3a. Description of Partner's Water Rights

The City's BDD Water Rights:

In accordance with the BDD Environmental Impact Statement, the City will divert only San Juan-Chama Project water permitted for BDD diversion by State Engineer Permit SP-2847-E. The City's portion of SP-2847-E is for 5,125.4 acft/yr. For 2015, the City has State Engineer authorization to divert up to 1,281.35 acft of additional San Juan-Chama water at the BDD.

The BDD calls for the City's San Juan Chama water from Abiquiu Reservoir; the released water incurs a 1.1% conveyance loss before arriving at the BDD. However, when Abiquiu Reservoir is in some types of flood operation modes and no San Juan Chama water can be released, the City will divert native water and then substitute the water diverted with San Juan-Chama water stored in Elephant Butte Reservoir.

The City's 2015 water delivery orders total 5221 acre-feet.

The County's BDD Water Rights:

During 2015, the County will be utilizing native Rio Grande water rights (807 acft) permitted under SP-4842, as well as San Juan Chama Project water (367.5 acft), permitted under SP-2847-E to deliver water to its customers and to the Water Coop.

The County's 2014 water delivery orders total 1,136 acre-feet.

Las Campanas Coop's BDD Water Rights:

The Club will be utilizing a combination of SJC water rights and water purchased from the County for diversion at the BDD to be pumped from their pump station at BDD 2A. The Club will utilize San Juan Chama Project Water (up to 600acft), permitted under SP-284-N-A, as well as 300 acft of raw water provided by the County.

Las Campanas's 2015 water delivery orders total 650 acre-feet. This is comprised of 300 acft provided by Santa Fe County and 350 acft leased San Juan Chama water rights.

3b. Role and Responsibilities of BDD Partners Regarding Water Rights

The BDD intergovernmental agreements identify water rights permitting, permit compliance, and maintenance as the responsibility of each BDD Partner. The Joint Powers Agreement (JPA) requires each Partner to independently provide water rights in good standing to support its water delivery orders. The BDD Board has a specific limitation of authority stated in JPA *Section 9, Limits of Board*

Authority:

The BDD Board's authority and duties do not encompass ... acquisition or permitting of use of water rights or contract water rights.

The JPA also says in *Section 14. BDD Capacity Allocation:*

Each entity's diversions shall be based upon its own water right or contract right and each entity is responsible for acquisition and maintenance of its own water rights.

Therefore, the BDD Facilities Manager, in making actual diversions of water from the Rio Grande, directed by the provisions of the JPA, relies on each of the BDD Partners designating and maintaining sufficient water rights in good standing to support all BDD river diversions required to support the Partners' water delivery orders.

The BDD Facilities Manager will not divert water to partially or wholly satisfy a Partner's water delivery order until that Partner has provided a written list of valid water rights, permitted by the State Engineer to the BDD, that are designated and sufficient for that Partner's water delivery order.

Each Partner, by signature of this plan, agrees to immediately notify the BDD Facility Manager and BDD Chief Operator if those diversions would in any way violate any of the requirements and conditions of any supporting water right (s).

The BDD Facilities Manager, with the cooperation of the Project Manager and the BDD Partners, will report diversions and water right use to the Office of the State Engineer monthly.

The BDD Project Manager is responsible for reviewing and tracking the actual use of water and water rights based on BDD-measured diversions, deliveries, and cost accounting.

Each Partner is responsible for accounting use of specific native Rio Grande water rights as specified under the relevant permit conditions.

The BDD Partners have developed an Optimized Annual Accounting Protocol (Attachment B) to meet project permitting requirements and increase efficiencies of water right accounting and BDD Project Operations.

3c. Native Water Rights Diversion Compliance with the Endangered Species Act

The responsibility of complying with Environmental Impact Statement Record of Decision water diversion requirements falls on the BDD Project Manager. Limitations on the BDD diversions include those provided in the Biological Assessment as submitted by the U. S. Forest Service to the U.S. Fish and Wildlife Service. The BDD Partners have agreed to incrementally curtail diversion of native Rio Grande water under low flow conditions to avoid interference with flows maintained by others for endangered Rio Grande Silvery Minnow habitat. The curtailment is initiated when the 5-day moving average of Rio Grande flows at the Otowi gage, minus San Juan-Chama Project water ordered for diversion by the BDD and the Albuquerque Drinking Water Project, falls below 325 cfs. The Partners', BDD Facilities Manager's, and BDD Project Manager's roles and responsibilities associated with curtailment are delineated below.

- a. The BDD Facilities Manager will notify relevant BDD Partners if curtailment of their native water diversions is anticipated or has been initiated.
- b. If such a low flow curtailment occurs during a period of time when a Partner's native water rights are being diverted, the BDD will curtail that Partner's diversions in accordance with the project-specific regulatory limits (Attachment A). The BDD Facility Manager will rely on details or changes regarding curtailment requirements provided by those Partners who use Native Rio Grande water rights.
- c. Any Partner with a Native Rio Grande water right order, may with the necessary lead time, replace a native water order with an alternate water source, such as San Juan-Chama Project water. In such a case the BDD Facilities Manager, working with the BDD Project Manager, will place the appropriate San Juan-Chama call with the Bureau of Reclamation.

A copy of the BDD's River Diversion Curtailment Protocol is provided in Attachment A.

3d. San Juan-Chama Project Orders, Reservoir Release Calls, and Reconciliation with Actual Use

- a) The BDD will closely coordinate all calls, monthly accounting and reporting associated with San Juan-Chama project water use with the BDD Project Manager.
- b) The BDD will rely on the Partners to maintain valid SJC water rights so that the BDD can divert water to fulfill each partner's water orders in full compliance with all applicable water rights conditions and limitations.
- c) Each Partner will fulfill its responsibilities, pursuant to the BDD intergovernmental and internal Partners agreements, to identify in the annual order when SJC Project water is to be used to support its water delivery orders.
- d) Each Partners will inform the BDD of any modifications to its daily SJC water order a week or at a minimum 2 working days in advance.
- e) BDD Partners will coordinate with the BDD and BDD Project Manager regarding use of their San Juan-Chama Project water at the BDD diversion in the event of native water diversion curtailments. Partners will endeavor to inform the BDD of replacement water sources a week or at a minimum 2 working days in advance.
- f) The BDD, in coordination with the BDD Project Manager, will measure, track and account for BDD Partner SJC use, as needed for cost accounting.
- g) The BDD and the BDD Project Manager will track SJC water use to report monthly water usage to the Office of the State Engineer. This process will include monthly reconciliation between the BDD diversion data and the RG accounting model.
- h) Each BDD Partner, independently, is responsible for reconciling the actual use of SJC Project water based on measured diversions and deliveries, including monthly and annual reconciliation of San Juan-Chama Project water releases from reservoirs against diversions and groundwater offsets. Reconciliation will also address communications with federal

agencies and the State Engineer about San Juan-Chama Project storage accounts in reservoirs.

4. Water Delivery Metering and Accounting

All water diverted at the BDD facility is measured through three intake and one sediment/water return meter. Raw water deliveries to CLCI are metered at Booster Station 2A. All BDD facility delivered potable water is pumped and measured through booster pump stations 4A and 5A. Additional delivery meters, some owned by the BDD facility (Wild West, 2 meters; South Meadow 10", 1 meter, South Meadow 18" bi-directional, 1 meter; Airport Road, 1 meter), some master meters owned by the City of Santa Fe (Beckner , 2 meters; Richards, 2 meters; and Agua Fria, 2 meters), and County customer meters (WaterCoop domestic, 1 meter; Aldea/Sunflower, 2 meters, Archeological Building, 1 meter), allow the BDD Facilities Manager, the BDD Project Manager, and the Partners to differentiate between potable water delivered to the County versus the City. It is anticipated that Santa Fe County will install three (3) additional master meters to improve efficiencies in the water accounting. These will include a "West Sector Meter, Campo Conjeo Meter and Richards East Meter.

For any given period of time, usually a calendar month, the City drinking water deliveries from the BDD facility are calculated as the balance of the BDD facility finished water pumped through booster pump station 4A and 5A minus water delivered to the County independent water utility, The difference between water diverted and water delivered (non-revenue water) is apportioned to each of the BDD Partners according to their respective percentage delivery within an accounting period (usually a calendar month). Under the current accounting method, all non-revenue water (including line flushing, water for system pressurization, etc.) downstream of the BDD delivery location is absorbed by the City; a more equitable way of sharing in non-revenue water may be considered in the future.

The current roles and responsibilities with respect to water delivery metering and accounting are as follows:

- a. The BDD Facilities Manager will measure all diversions of water. These measurements will be continuous. The flows will be recorded and totaled daily.
- b. The BDD Facilities Manager will read those meters associated with bulk water delivery to each Partner as identified above.
- c. The BDD Facilities Manager will calculate the deliveries of water to the Partners.
- d. The BDD Facilities Manager will report the water use to the OSE and to the Partners monthly.
- e. The BDD Facilities Manager will calculate and report annual BDD water use by Partner.
- f. During times when the BDD cannot meet the County's water order because the BDD is unable to divert water, the County's water orders will be satisfied by the County/City 2005 Water Resources Agreement.
- g. On the day on which the BDD cannot deliver water, the BDD Facilities Manager will read the BDD delivery and the City→ County master meters identified above to distinguish between water delivered to the County by the BDD facility versus other City water supply sources.

5. Fiscal Responsibilities

- a. The BDD will bill the Partners—based on its **actual measured deliveries** of raw and/or drinking water during any billing period—for its share, pursuant to the FOPA Partner

cost share requirements, of the **actual** fixed and variable costs of BDD OMR&R during that billing period.

The BDD will bill the City for the water deliveries, including all drinking water that is pumped by the BDD finished water pumps and not delivered to the County via the delivery and master meters. Therefore, BDD may bill the City for more or less water than the City ordered and more or less than the BDD intended to deliver, depending on the accuracies of the County and CLCI water orders with respect to actual County and LCLP water use.

Should the BDD be unable to divert and deliver water, the BDD will provide the Partners with City→ County master meter readings so that the City's Utility Billing Division can bill the County for water delivered under the County/City 2005 Water Resources Agreement.

In order to maintain the financial viability of the BDD facility, Partners will promptly pay for water deliveries.

The Partners will reimburse the BDD facility for the actual monthly costs of BDD operations through a series of advance payments for the budgeted cost of monthly operations followed by reconciliation payments if necessary at the end of each month based on actual monthly costs of BDD facility operations.

CLCI will fully cover all variable costs associated with the delivery of raw water from BS2A to the golf course.

If the Partner water demand during 2015 exceeds the Partner water delivery order, it may be necessary for that Partner to appropriate additional funds to the BDD for the additional water and for the BDD Board to amend its operating budget to incorporate the additional funds necessary to cover additional costs.

For 2015 expenses for raw water deliveries from the diversion structure to BS2A will be addressed as follows:

1. Variable costs for raw water ordered by and delivered to The Club will be billed to The Club.
 2. Variable costs for raw water ordered by the County and delivered to the Club will be billed to the County.
6. Adjustment of Daily Water Delivery Orders by the BDD Partners to Reflect Actual Utility Demand

Water demand is not precisely predictable. Spring, summer, and fall actual daily retail customer water demand varies with weather and actual amounts of precipitation prior to and during the demand period. Since the 2015 BDD Partners' actual water demand will vary from their projected daily water delivery orders, the following steps will be taken to adjust and reconcile water delivery orders during 2015.

1. The Support Entity will endeavor to maintain the BDD delivery volume at the amount set forth in the AOP by operating its other sources of supply to accommodate the expected difference between its prior delivery order and its expected actual water demand.

2. The City may adjust its daily delivery order for the subsequent day no later than 3:00 pm each day. If the City changes its daily delivery order, the BDD Facilities Manager will operate the BDD facilities to meet the adjusted daily demand. If the change is significant, the BDD Facilities Manager may adjust the SJC call accordingly.
3. The County will endeavor to adjust its daily delivery orders no more frequently than monthly, following its monthly comparison of its actual monthly demand with the previously projected monthly water delivery orders.

7. Non-Delivery of BDD Wholesale Water Supply Due to Uncontrollable Circumstances

The BDD will be unable to meet its wholesale customers' orders for waters from time to time due to circumstances beyond the control of the BDD Facilities Manager or the BDD Partners. For example, the BDD will not operate when suspended solids concentrations in the Rio Grande exceed a threshold value beyond which continued operation is not possible or in conflict with limits recommended by the BDD Board Engineer, might result in damage due to deposition of sediment within the raw water system, or would result in unacceptably high costs for removal and disposal of solids in the water treatment process. Similarly, the BDD may not operate when the Los Alamos National Laboratory Early Notification System indicates the Rio Grande may be influenced by runoff from Los Alamos Canyon. Raw water storage (up to 8 million gallons) and drinking water storage (up to 4 million gallons) may allow the BDD to continue to supply water for a short period of time following temporary curtailment of river diversions due to river water quality or other reasons.

During periods of BDD inability to fulfill water delivery orders, the City will supply both, its own and, in accordance with the 2005 County/City Water Resources Agreement, the County's potable water demands from stored drinking water and its other sources of water supply.

8. Operations Features To Conserve Resources

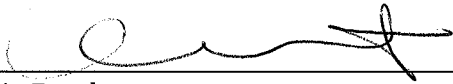
To the extent feasible, raw water pumping will be conducted during PNM electricity 'off-peak' hours in order to avoid contributing to PNM peak system demand and higher electric rates.

City orders for BDD water are weighted to the seasons of the year when the river water is generally much better quality. The cleaner, clearer water is the easier and cheaper to treat.

9. Annual Operating Plan Approval

The AOP will be agreed upon and signed by the BDD Partners. The AOP can be modified by mutual agreement of the BDD Partners as the calendar year progresses.

This plan was reviewed and approved by:




Claudia Borchert,
Utility Director, Santa Fe County

2.5.2015
Date



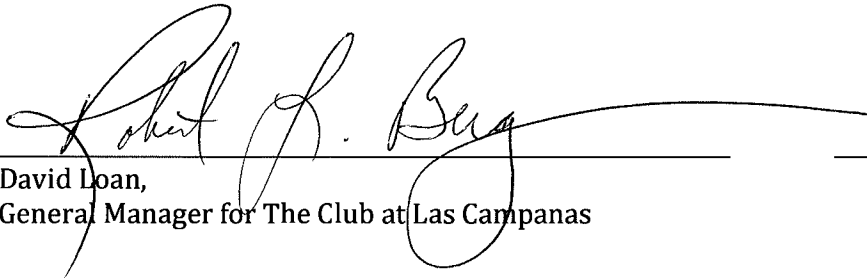
Charles Vokes,
Buckman Direct Diversion Facilities Manager

3 Feb 15
Date



Nicholas Schiavo, P.E.
Public Utilities and Water Division Director, City of Santa Fe

2/5/15
Date



David Loan,
General Manager for The Club at Las Campanas

2/23/15
Date

ATTACHMENT A

Buckman River Diversion Curtailment Protocol

**Only native Rio Grande River flows are affected by the curtailment policy
Curtailment will only have to take place on the months between March and October.**

Curtailment requirements are based on a 5-day average

To monitor native Rio Grande flow the BDD operations team at the Buckman Regional Water Treatment Plant registered with the USGS e-mail notification system and set the threshold to 500cfs at the Otowi gauge.

Rio Grande flow is monitored during March and October. Should river flows fall below 500cfs, the Bureau of Reclamation is contacted to obtain detailed San Juan Chama (SJC) and Native Rio Grande flows.

Native Rio Grande River diversion curtailments, which were required by the Biological Opinion, are addressed in the table below:

Native Rio Grande flows (cfs)	March Max Diversion (cfs)	April Max Diversion (cfs)	May Max Diversion (cfs)	June Max Diversion (cfs)	July Max Diversion (cfs)	August Max Diversion (cfs)	September Max Diversion (cfs)	October Max Diversion (cfs)
> 325	3.82	4.6	6.87	8.55	7.95	7.56	6.57	5.09
300	3.05	3.68	5.50	6.84	6.36	6.05	5.26	4.07
280	2.44	2.95	4.40	5.47	5.09	4.84	4.21	3.26
260	1.83	2.21	3.30	4.10	3.82	3.63	3.16	2.44
240	1.22	1.47	2.20	2.73	2.54	3.42	2.10	1.63
220	0.61	0.74	1.10	1.37	1.27	1.21	1.05	0.81
200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

For example:

- If in March the 5 day average flow of Native Rio Grande water is greater than 325 cfs, a maximum 5-day peak of 3.82 cfs Native Rio Grande water can be diverted. On the day the 5 day average flow of Native Rio Grande water of less than 325 cfs is reached, a max of 3.05 cfs of Native Rio Grande water can be diverted.
- If in July the 5 day average flow of Native Rio Grande water is greater than 325 cfs, a maximum 5-day peak of 7.95 cfs Native Rio Grande water can be diverted. On the day the 5 day average flow of Native Rio Grande water of less than 325 cfs is reached, a max of 6.36 cfs of Native Rio Grande water can be diverted.
- If in July the 5 day average flow of Native Rio Grande water is less than 240 cfs, a max of 1.27 cfs of Native Rio Grande water can be diverted.

ATTACHMENT B

OPTIMIZED ANNUAL WATER RIGHTS ACCOUNTING PROTOCOL

Background

One of the principles of the shared nature of the BDD Project is that each of the partners (County, City and Las Campanas Coop 'LC Coop' & The Club at Las Campanas Inc. 'CLCI') provides access to their water rights that they want diverted and delivered to the respective points of interconnection where the BDD Project transmission lines terminate.

This memo is addressed to those persons at each of the 4 partners who have a role in managing the water rights covered by this policy. This memo will be included in the Annual Operating Plan for the BDD Project reviewed and approved by the BDD Project Partners.

The present accounting process for the diversion from the Rio Grande of SJCP and native NM water rights, and then delivery to each of the BDD Partners, has become inefficient and time consuming. In some cases, the complexity of the current accounting process has led to very significant staff time and reporting errors. The accounting process generally must be coordinated with state and federal agencies and must be done in accordance with BDD Project documents, OSE diversion permits and the Record of Decision for the EIS approval of the BDD Project. The state and federal agency accounting criteria requires the Project to provide detailed reports on volume, and attendant type of water right, that has been diverted.

The methods and procedures for Optimized Annual Water Right Accounting described below are designed to:

1. Lessen the time and resources required of staff to meet Project permitting requirements
2. Move the timing of native NM water rights diversions out of the restrictive time periods when conditions might adversely impact Project operations
3. Generally improve the efficiencies of operations and accounting to federal and state agencies as required by the respective permits
4. Improve the efficiencies of compliance with the City and County SJCP diversion permits
5. Generally optimize the use of SJCP water where appropriate and thereby make that SJCP water available for other purposes.

Introduction

In order to improve the efficiency of operations and the accounting process, staff has identified that an internal accounting process could be developed that changes the timing of diversions of the combined native NM water right portfolio. This proposal does not require the approval of the state and federal agencies and is designed to fit within the existing permit approvals.

For reporting to the state and federal agencies, this approach would show the native NM water rights being diverted at times of the year that avoid or lessen the low flow curtailment constraints described on pages 11-12 of the BDD Project Biological Opinion. By changing the timing of such diversions, the BDD Partners would create additional operational flexibility for the overall benefit of the BDD Project and staff of both the BDD Project and the agencies who monitor compliance with the existing permits.

Several permitting constraints limit the operational flexibility of the BDD Project. During the spring when the Rio Grande is in flood operations, SJCP water cannot be routed through Abiquiu Reservoir and BDD Project diversions of SJCP water can only be permitted by an inefficient process that requires an accounting 'exchange' for downstream stored water in coordination with state and federal agencies. The Biological Opinion limits the diversion of native NM water rights during times when the Rio Grande experiences low flow conditions. The SJCP diversion permits contain a strict rule that requires exact releases from upstream reservoirs and then exact diversions at the intake. The Optimized Annual Accounting method will provide compliance with the federal and state permits while also allowing for greater flexibility in operations for the Project and the BDD Partners.

The Optimized Annual Accounting method allows for some flexibility in the aggregate diversions since native NM water rights are available for diversion without calling for release. This change will allow native NM water rights to be diverted when they are most useful to meeting the combined BDD Project demands, and also allow SJCP water rights to be diverted when they are most useful to meeting the combined BDD Project demands. For example, the native NM water rights owned by the BDD Partners would be diverted during the likely flood operations time period to meet BDD Partner demand...and SJCP water rights owned by the BDD Partners would be diverted during the likely low flow time period to meet BDD Partner demand. A discrete amount of native NM water rights would be identified to balance the SJCP calls for delivery, and actual diversions must be within the native NM diversion flow constraint identified in the Biological Opinion. This will simplify the monthly accounting provided to the agencies and avoid changes to BDD Project operations during this time period. A significant part of the native NM water right portfolio will be scheduled for use during the likely flood operation time period to avoid changes in BDD Project operations during this time period. And the balance of the native NM water right portfolio would be used in the fall in order to preserve the combined SJCP water owned by BDD Partners.

Review of Permit Compliance

OSE permits: The City / County SJCP diversion permit contains the restriction described above, that strictly accounts for upstream reservoir releases and subsequent diversions. From the November 1, 2006 permit:

8. The maximum amount of San Juan-Chama Project water diverted in any day under this permit shall not exceed the amount of the permittees' San Juan- Chama water calculated to be in the Rio Grande at the BDD on that same day. The amount of

the permittees' SJCP water available for diversion at the BDD on a particular day shall be calculated as the amount of water released from either Heron or El Vado Reservoir two days prior to diversion at the BDD, less a 2% conveyance loss or the amount of water released from Abiquiu Reservoir one day prior to diversion at the BDD less a 0.9% conveyance loss. The State Engineer expressly reserves the right to adjust the travel time periods as better information becomes available or based on river channel conditions. The permittees shall notify the State Engineer at the time releases of SJC water are ordered to be released or are ordered to be discontinued.

9. The permittees' maximum peak daily surface water diversion rate shall not exceed 32.0 cfs. The State Engineer recognizes that other external factors may further limit the actual diversion rate.

Note that 'Otowi Gage native flows' is a defined term from the ROD (discussed below) and is calculated as the total Otowi gage flow less SJCP releases for municipal and industrial uses. This definition of native flow is different from the definition that is used elsewhere in Rio Grande water management.

The proposed Optimized Annual Accounting method does not conflict with the SJCP permit conditions of approval, and is intended to simplify compliance with the permit requirements.

Several native NM water right permits that are permitted for diversion from the BDD were reviewed, and they typically contain two provisions that relate to operations. From a County transfer approved in 2010:

8. The maximum instantaneous rate of diversion from the Buckman Direct Diversion under all permits (San Juan Chama Project water and native water) shall not exceed 32.0 cfs, inclusive of amount of water necessary for sediment removal.

9. Diversion of water under this permit shall be subject to adherence with the Staged Curtailment Schedule (U.S. Department of Interior, Fish and wildlife Biologic Opinion, June 25, 2007 at 12) for the Buckman Project when Otowi Gage native flows are below 325 cfs.

Note that the requirement to comply with the Staged Curtailment Schedule has been the topic of a related work effort, and the OSE will not independently determine compliance with the BO requirement. The proposed Optimized Annual Accounting method does not conflict with the native NM water right permit conditions of approval, and is intended to simplify compliance with the permit requirements.

Staff of the OSE and ISC has indicated that they are not concerned with who is delivered which water rights (under the proposed Optimized Annual Accounting method) as long as the Rio Grande diversions are consistent with the Conditions of Approval of the permits.

BDD Board documents: The BDD JPA, City-County WRA and BDD PMFSA do not contain provisions that relate to the Optimized Annual Accounting method. BDD FOPA, section 8, states:

8. Water Rights and Divertible Water Supply. Each BDD Partner shall divert only that amount of water in the system for which water rights are in good standing with the New Mexico State Engineer, subject to the limitations on diversions at low flow set as forth in the BDD Project EIS or other applicable permits. The BDD Partners each recognize an individual responsibility to maintain their own water rights portfolio and to manage any water rights shortage within that portfolio. No BDD Partner shall make any claim or attempt to use another BDD Partner's water rights without the express written consent of that BDD Partner.

The final sentence of this section requires written consent to use another BDD Partner's water rights. In order to address this condition, staff and counsel recommend that the procedures described below be added to the BDD Project Annual Operating Plan. This Plan is prepared annually by the staff of the City, County and Las Campanas (CLCI and LC Coop), and is signed by the respective water utility directors.

BDD Project Biological Opinion: The Record of Decision issued by the US Forest Service and Bureau of Land Management incorporated the requirements of the Biological Opinion (BO) issued by the Fish and Wildlife Service. In general, the BO prescribes an annual maximum volume of diversion (8,730 ac-ft/yr), an annual maximum volume of SJCP and native NM water rights, and maximum rates of diversion (32 cfs, sediment return/net diversion, RG low flow native NM water right diversion limits). The BO does not contain a provision that limits the Optimized Annual Accounting method, and the proposed method intended to simplify compliance with the permit requirements.

Conclusion

In summary, the proposed Optimized Annual Accounting method provides for the full use of the native NM water right portfolio in the near term (providing the beneficial use requirement) and allows the BDD Partners to preserve as much SJCP water as possible in any given year. It provides a simplified and efficient process for staff and agency review, and is consistent with the permits and agreements for the BDD Project that have been reviewed.

Implementation of revised Optimized Annual Accounting Process

Staff and counsel recommend that the implementation of the revised accounting process be acknowledged by the respective water utility directors of the BDD Partners through inclusion in future year versions of the Annual Operating Plan (as is described in BDD Project documents).