



MINUTES

SANTA FE RIVER
COMMISSION
JANUARY 13, 2022
6:00 PM
VIRTUAL MEETING

1. **CALL TO ORDER**

Meeting started at 6:02 PM

2. **ROLL CALL**

Members Present:

Member Phil Bove
Member Heidi Klingel
Member Rachel Kullman
Member Anna Hansen
Member Susan Coulter

Members Excused:

Member Vanessa Springer
Member Emile Sawyer
Member Andrew Black

Others Attending:

Melissa McDonald, Parks Division Director
Zoe Isaacson, River and Watershed Project Administrator

3. **APPROVAL OF AGENDA**

MOTION: Member Hansen moved, seconded by Member Klingel, to approve the agenda as presented.

VOTE: The motion was approved on the following Roll Call vote:

For: Member Bove, Member Klingel, Member Kullman, Member Hansen, Member Coulter

Against: None

Abstain: None

4. **APPROVAL OF MINUTES**



MINUTES

SANTA FE RIVER
COMMISSION
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6:00 PM
VIRTUAL MEETING

- a. Approval of Minutes from October 14, 2021 Meeting

MOTION: Member Hansen moved, seconded by Member Klingel, to approve the minutes as presented.

VOTE: The motion was approved on the following Roll Call vote:

For: Member Klingel, Member Kullman, Member Hansen, Member Coulter

Against: None

Abstain: None

5. COMMUNICATIONS FROM OTHER AGENCIES/COMMITTEES

- a. Report from Santa Fe Watershed Association (Amara Nash, Outreach Coordinator, amara@santafewatershed.org)
- b. Santa Fe County Update (Mike Romero, Greenway/River Trail Project Manager, Public Works Department, miromero@santafecountynm.gov)

6. INFORMATIONAL ITEMS

- a. Reliance on San Juan Chama water and the Source Water Protection Plan (Susan Coulter, Santa Fe River Commissioner, susan.coulter@gmail.com)
- b. Aquifer Storage and Recovery: ASR working group met with City Staff to discuss the potential of an ASR project and impacts on Living River Flows (Rachel Kullman, River Commission Chair, rachel@kullmanwater.com)
- c. Stormwater StoryMap Update (StoryMap working group- Heidi Klingel, heidiklingel@hotmail.com; Rachel Kullman, rachel@kullmanwater.com; & Susan Coulter, susan.coulter@gmail.com)

7. DISCUSSION AND ACTION ITEMS



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- a. Recommendations to Mayor for four open positions on the River Commission: review and discussion of applicants (Zoe Isaacson, Staff Liason, zrisaacson@santafenm.gov, 955.6985)
- b. Chair and Co-Chair Elections (Rachel Kullman, River Commission Chair, rachel@kullmanwater.com)

MOTION: Member Kullman moved, seconded by Member Hansen, to Approve nomination of Heidi Klingel as River Commission Chair

VOTE: The motion was approved on the following Roll Call vote:

For: Member Bove, Member Klingel, Member Kullman, Member Hansen, Member Coulter

Against: None

Abstain: None

MOTION: Member Hansen moved, seconded by Member Klingel, to Approve nomination of Susan Coulter as River Commission Vice-Chair

VOTE: The motion was approved on the following Roll Call vote:

For: Member Bove, Member Klingel, Member Kullman, Member Hansen, Member Coulter

Against: None

Abstain: None

8. MATTERS FROM STAFF

- a. River and Watershed Section Project Updates (Zoe Isaacson, Staff Liason, zrisaacson@santafenm.gov, 955.6985)



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- b. Target Flow Hydrograph Updates (Patricio Pacheco, Water Division, pmpacheco@santafenm.gov)

9. **MATTERS FROM THE PUBLIC**

10. **MATTERS FROM THE COMMISSION**

Next River Commission stewardship day- February 19th at 10:00 am at Louis Montano Park.

11. **NEXT MEETING: April 14 2022**

12. **ADJOURN**

Persons with disabilities in need of accommodations, contact the City Clerk's office at 955-6521, five (5) working days prior to meeting date.

Meeting ended at 7:43 PM

Liaison

Chair

MONTHLY REPORT: April 2022

To: The City of Santa Fe River & Watershed Coordinator

From: Santa Fe Watershed Association

Date: April 30, 2022

1413 Second Street, Suite 3

Santa Fe, NM 87505

(505) 820-1696 • fax 986-9132

amara@santafewatershed.org

www.santafewatershed.org



RE: Adopt-the-River & Adopt-an-Arroyo Programs

Santa Fe
WATERSHED
ASSOCIATION

Despite continued complications from COVID-19, volunteer and collection numbers seem to be improving. Natural seasonal decreases in volunteering can be observed.

Task 1. PLAN FOR RESTORING AND MAINTAINING ADOPTED RIVER REACHES AND ARROYOS

- ✓ 4/1/22, Lisa Ferrand and Friends cleaned the River between Frenchy's and Siler
- ✓ 4/2/22, Ros Rody's Jamaican Kitchen cleaned River Reach 10
- ✓ 4/2/22, SFHS cleaned Arroyo de los Pinos behind La Farge Library
- ✓ 4/2/22, Amma Green Team cleaned Arroyo de los Pinos by HEC
- ✓ 4/8/22, City of SF and SFWA cleaned Arroyo de los Pinos behind Community Yoga
- ✓ 4/9/22, Amma Green Team cleaned River Reach 15
- ✓ 4/10/22, NM State Land Office cleaned River Reach 11
- ✓ 4/10/22, NM State Supreme Court cleaned River Reach 12
- ✓ 4/11/22, SF Prep cleaned River Reach 3
- ✓ 4/17/22, Lisa Ferrand and Friends cleaned the River between Frenchy's and Siler
- ✓ 4/21/22, Angel volunteers cleaned Arroyo Mascaras at Grant Street Bridge
- ✓ 4/22/22, SF JROTC cleaned River Reach 28
- ✓ 4/23/22, SF Center for Spiritual Living cleaned upriver from Frenchy's bridge
- ✓ 4/25/22, EverWalk team cleaned upriver and downriver from Frenchy's bridge

TASK 2. COORDINATE VEGETATION MANAGEMENT IN ACCORDANCE WITH THE CITY'S COMPREHENSIVE VEGETATION MANAGEMENT PLANNING

- ✓ Coordinating waterings on an ongoing basis, scheduled in relation to rainfall events.
- ✓ SFWA hired a person specifically to spearhead watering, to ensure more consistent attention
- ✓ SFWA helped Rio Grande Return plant and water willows and cottonwoods between Frenchy's and Siler

Task 3. REPORT ON STEWARDS AND MONETARY SPONSORS

- ✓ All reaches of the river have sponsors except for reaches 14,15, 19, 20, 26, and in the County: San Isidro Crossing (29C), Camino Real (30D), and Paseo Real (40).
- ✓ There are 2 reaches that need Steward teams (San Ysidro Crossing was adopted by Meow Wolf). An additional reach was added from Frenchy's field to Tumbleroot as the previous reaches were very long. This new reach has a steward team.
- ✓ Arroyo reaches with signs are all sponsored except for 8.

- ✓ Five arroyo reaches need Steward Teams and we've added a Steward team on Arroyo Chamisos near the new Walmart.
- ✓ SFWA is actively looking for sponsors and stewards for the Adopt-an-Arroyo and Adopt-the-River programs.
- ✓ Adopt-an-Arroyo Program Manager, Amara Nash, and Administrative Director Raquel Baca-Tompson have sent out sponsor invoices and renewal letters and will continue approaching potential Sponsors.
- ✓ Adopt-an-Arroyo Program Manager, Amara Nash and new Volunteer Coordinator Ceci Ervin are tracking Steward renewals, approaching new potential Stewards and "Angel" Volunteers, and encouraging current steward teams to clean their reaches and, occasionally, other reaches in need of a cleanup.

TASK 4. ORGANIZE AND SUPPORT TRASH REMOVAL AND VEGETATION MANAGEMENT

Reach Report for April 2021 totals for **FY 2021-22** are as follows:

	Reaches/visits	Volunteers	Trash Bags Collected	Volunteer Hours
Totals through March				
River	91	448	719	832.25
Arroyos	24	196	419	483
April				
River	8	38	46	59.75
Arroyos	4	21	128	55
Totals	127	703	1312	1430

The value of the volunteers' in-kind contributions in City river reaches and arroyos to date in **FY 21/22** is approximately [\\$36,365](#) (1430 hours @ \$25.43; see www.independentsector.org/volunteer_time).

The approximate total weight of trash collected to date in **FY 21/22** is [9.84 tons](#) (1312 bags * 15 lbs/bag * 1/2000 tons/lb)**Error! Hyperlink reference not valid.**

TASK 5. POST SIGNS FROM ARMIJO PARK TO FRENCHY'S FIELD

- ✓ Amara Nash and Andy Otto regularly check signs for wear and tear. Signs are from Cerro Gordo Road to Siler Bridge. We've just updated and replaced a number of them.
- ✓ City staff continues to help with post and sign installation for the arroyo reaches.
 - SFWA will be requesting meeting with City staff to determine proper sign installation for new sponsor reaches.

MONTHLY REPORT: April 2022

To: The City of Santa Fe River & Watershed Coordinator

From: Santa Fe Watershed Association

Date: April 30, 2022

TASK 6. PROVIDE TRAINING AND EDUCATION FOR VOLUNTEERS REGARDING RIVER & ARROYO RESTORATION

- ✓ During cleanups that SFWA staff attends, they speak to the volunteers about water conservation and water challenges in the Southwest.
- ✓ We are working on developing more virtual education materials and outreach with the Santa Fe Public Schools Office of Sustainability.
- ✓ We have received funding to create a series of educational videos for existing and potential stewards. They are now available to the public.

TASK 7. ORGANIZE THREE ANNUAL COMMUNITY-WIDE EVENTS

- ✓ Our next community-wide event will be in June

TASK 8. COORDINATE WITH CITY STAFF TO TAKE ALL ACTIONS IN COMPLIANCE WITH THE CITY.

- ✓ Amara Nash and Ceci Ervin notify River and Watershed Coordinator Zoe Isaacson, Melissa MacDonald, and Parks and Open Space Department Director about each Steward clean-up outing to schedule trash collection. They also relay observations received from Stewards to Zoe Isaacson and Melissa McDonald.
- ✓ A few smaller camps behind La Farge Library

TASK 9. SEND MONTHLY REPORTS OF WORK DONE THE PREVIOUS MONTH.

- ✓ We are hereby providing report of activity for April 2022 to the City of Santa Fe River and Watershed Coordinator.

TASK 10. CONDUCT PUBLIC OUTREACH TO PROMOTE PROGRAMS AS WELL AS TO THANK SPONSORS AND STEWARDS. INCLUDE PRESENTATIONS TO NEIGHBORHOOD MEETINGS AND COMMUNITY EVENTS, AND MAINTAIN A WEB SITE.

- ✓ We have been using social media sites as well as volunteermatch.com and nextdoor, to thank volunteers and to recruit new volunteers for River and Arroyo Stewardship.
- ✓ We are exploring virtual ways to promote and educate the community on the Adopt-an-Arroyo Program.

Submitted by: Amara Nash, SFWA Adopt-the-River and Adopt-an-Arroyo Program Manager



An Announcement from our Executive Director, Andy Otto

On July 15, 2022, I will be leaving my position as Executive Director of SFWA and Mori Hensley will be taking over as the Executive Director at that time. When I started working at SFWA, I remember looking at the Santa Fe River and thinking that it was in tough shape and needed some help. I knew that Santa Fe really cared about its river and wanted to make sure it survived and thrived. This was the reason that I was put in this position at SFWA: to help this community and our watershed. There will always be more work to be done, but I feel proud of all we have accomplished together in the last nine years and look forward to continuing to be of service in the community.



This decision has been in the works a long time, and has been a truly collaborative effort with the SFWA Board and Staff. I feel confident the transition to Mori's leadership will be smooth and vibrant, starting now with her new position as Associate Executive Director and moving into the Executive Director role on July 15. Mori has been with SFWA since 2019, beginning as Program Coordinator and then serving as Director of Planning, Education, and Restoration. Through this time she has gained a deep understanding of our various programs and been able to build relationships with many of our partners and community members.

As we celebrate our 25th Anniversary, I reflect on the accomplishments and ongoing work of SFWA and look towards the future with hope. As the past has demonstrated, the Santa Fe River and arroyos need a human voice to articulate the best plans and options for their continued functioning as a viable watershed, a natural landscape, and a living river. This will take new skills and programs by the SFWA staff and Board. We are up for the task though, believing that the only thing certain is change.

Our Board of Directors and Staff remain fully committed to the Mission of the Santa Fe Watershed Association and will continue to support the "health and vibrancy" of the Santa Fe River watershed as they have since 1997.

~Andy Otto

Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform *seasonal* conservation policy

- Q: When do we ask for or require more conservation from Santa Fe Water Utility customers?

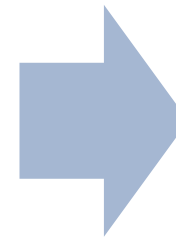
UTILITY PERSPECTIVE:

- In the past 25 years potable water demand has decreased by 33% even as population served has increased by 25%
- Groundwater levels are rising
- We currently use about 75% of estimated renewable supply



COMMUNITY PERSPECTIVE:

- We are in a megadrought
- Most customers are very aware of the drought
- Growth is evident



GOAL:

Transparent and predictable conservation policy that incorporates Utility and Community perspectives

Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

- Provide a transparent, quantitative, and predictable trigger to guide seasonal conservation policy
- Actual policy response to indicator will be developed by engagement with City’s WCC and County’s WPAC and direct public outreach.
- The indicator is not for short term infrastructure related disruption or long term water resources planning

“It hasn’t rained in months, and all I read about in the newspaper is drought. Why aren’t you asking for or even mandating more conservation?”

- Tina Bitworried

A hypothetical Santa Fe Water Utility customer

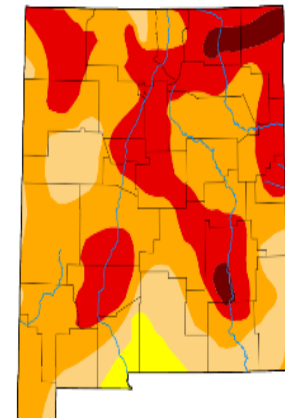
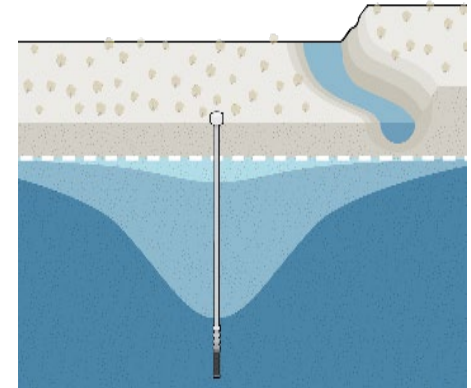
Types of Demand Planning Done by City and County of Santa Fe Water Utilities		
<i>Time Scale</i>	<i>Technical Tools Used by Santa Fe Water Utilities</i>	<i>Conservation Response</i>
Weeks to Months	Worst case scenarios evaluated with hydraulic (pipe network) model	Short term drastic reduction
1 Year	Santa Fe Water Resources Indicator	Seasonal policy
Decades	STEWaRDS long range water resources planning model	Long range conservation policy



Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

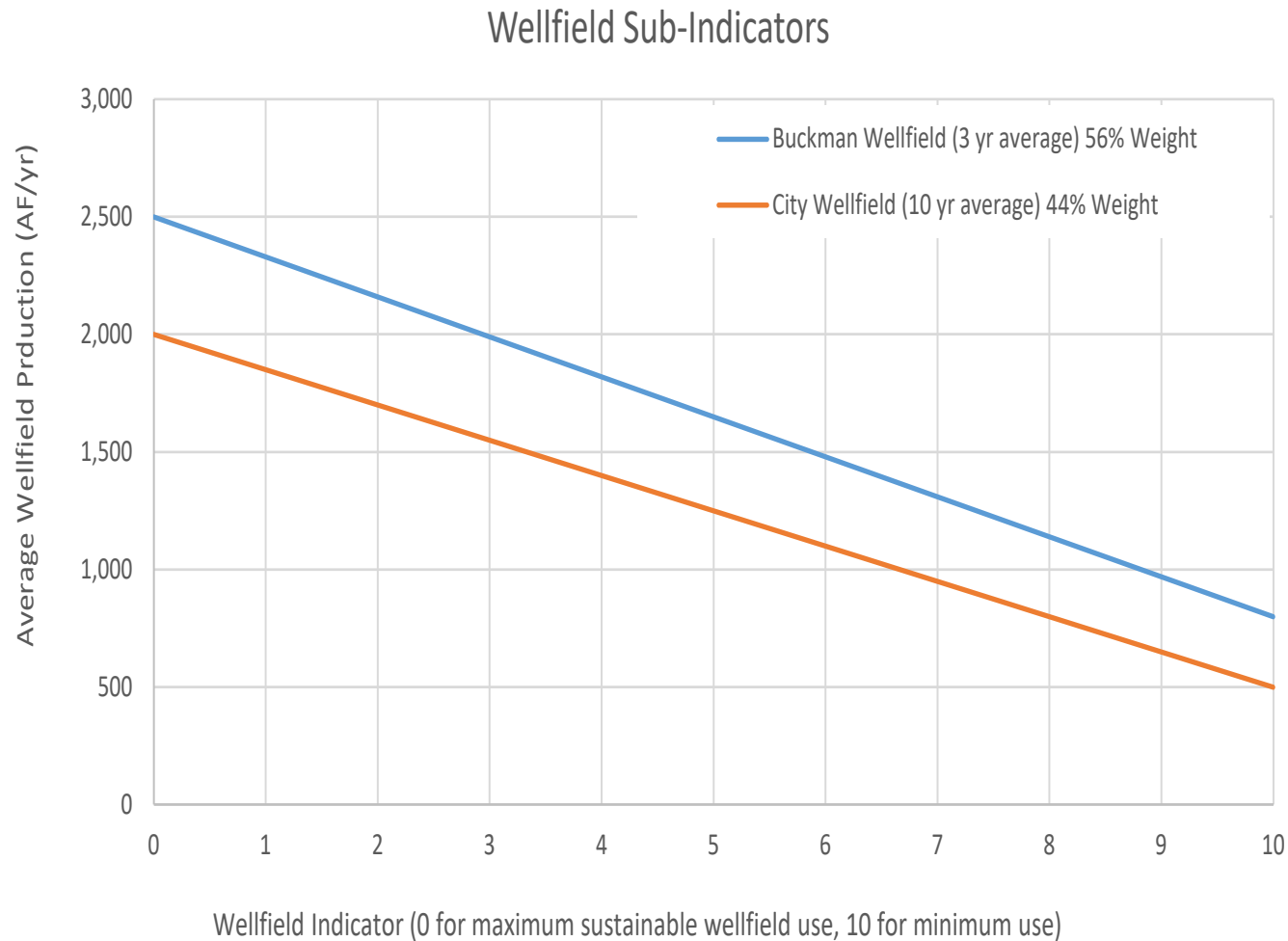
- 40% of weight to groundwater pumping
 - Groundwater (water from wells) is our “drought-proof” savings account.
 - We can only indirectly estimate total availability, but we can see if water levels in the wells are going up or down through time.
 - Over time we don’t want to be pumping more than is being recharged. Water levels should be stable or rising if this is the case.
 - City wellfield is “unconfined” and water levels change slowly through time.
 - Much of Buckman wellfield is “confined” water under pressure between clay layers and water pressure changes more quickly through time.
- 30% of weight to surface water availability
 - Surface water (river water) in reservoirs is our checkings account.
 - It is renewable and we know with very high accuracy how much is available.
 - When we use it up we have to go to the savings account (wells).
- 30% of weight to regional drought conditions
 - As summarized by the drought value assigned to Santa Fe County in the U.S. Drought Monitor.
 - The public is more aware of regional drought than Utility water availability.
 - Regional drought will impact water use, especially outside.



Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

- Groundwater Sub-indicator (40% of overall Supply Indicator)
 - Based on recent pumping of wells. 64% weight to Buckman Wells and 46% to City Wells based on relative sizes.

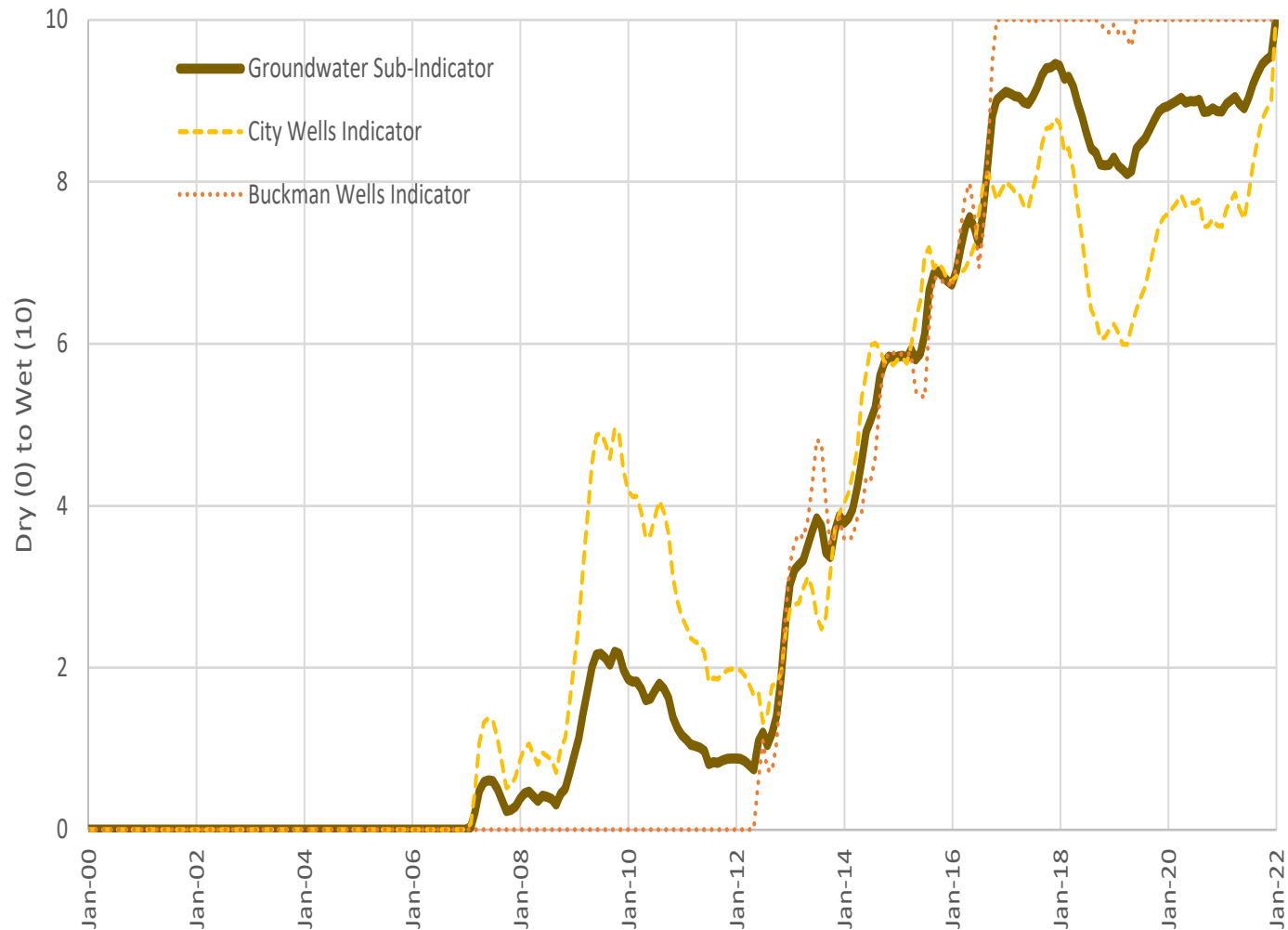


Santa Fe Water Resources Indicator

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- Groundwater Sub-indicator (40% of overall Supply Indicator)

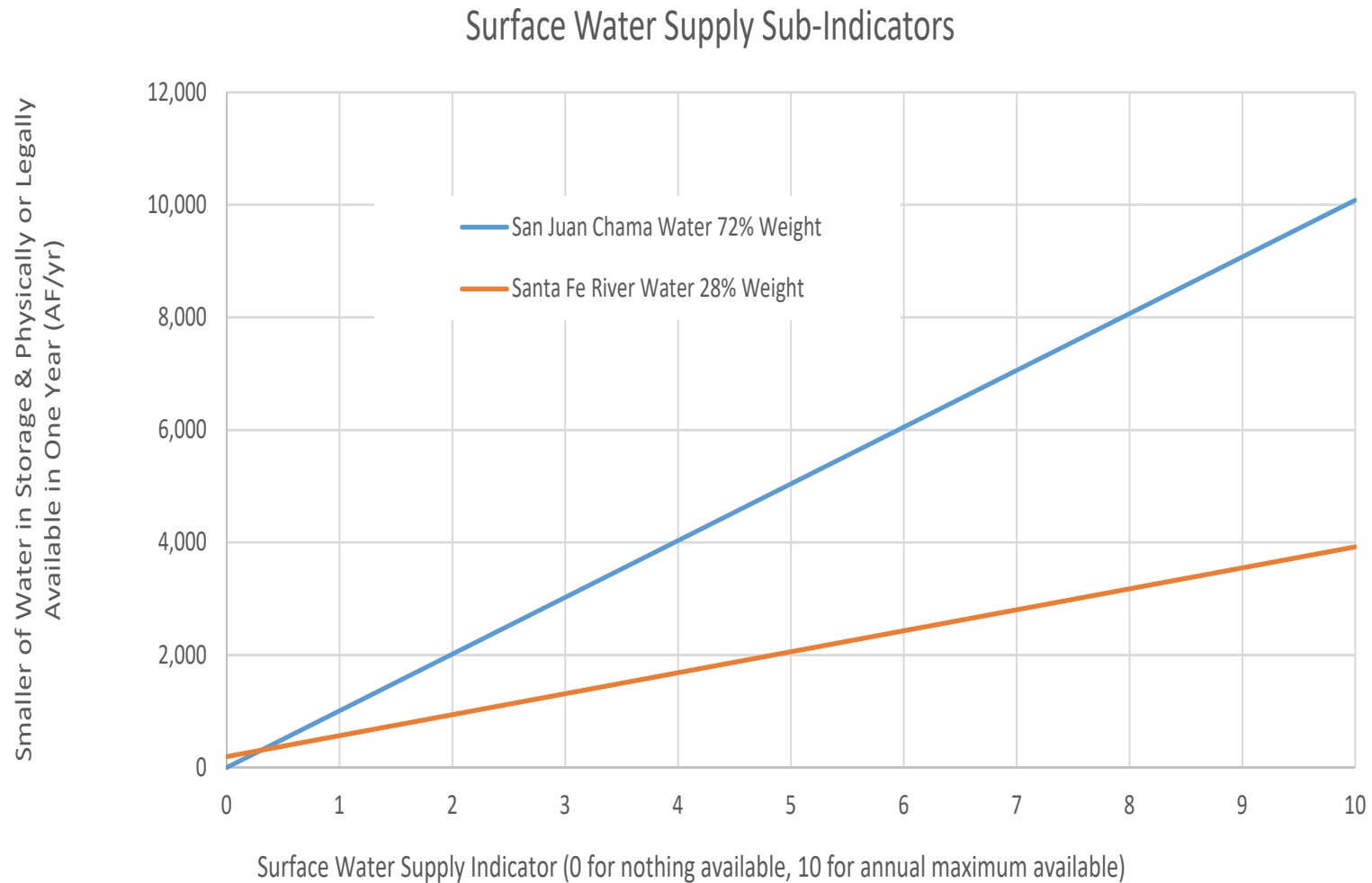
Groundwater Sub-Indicator



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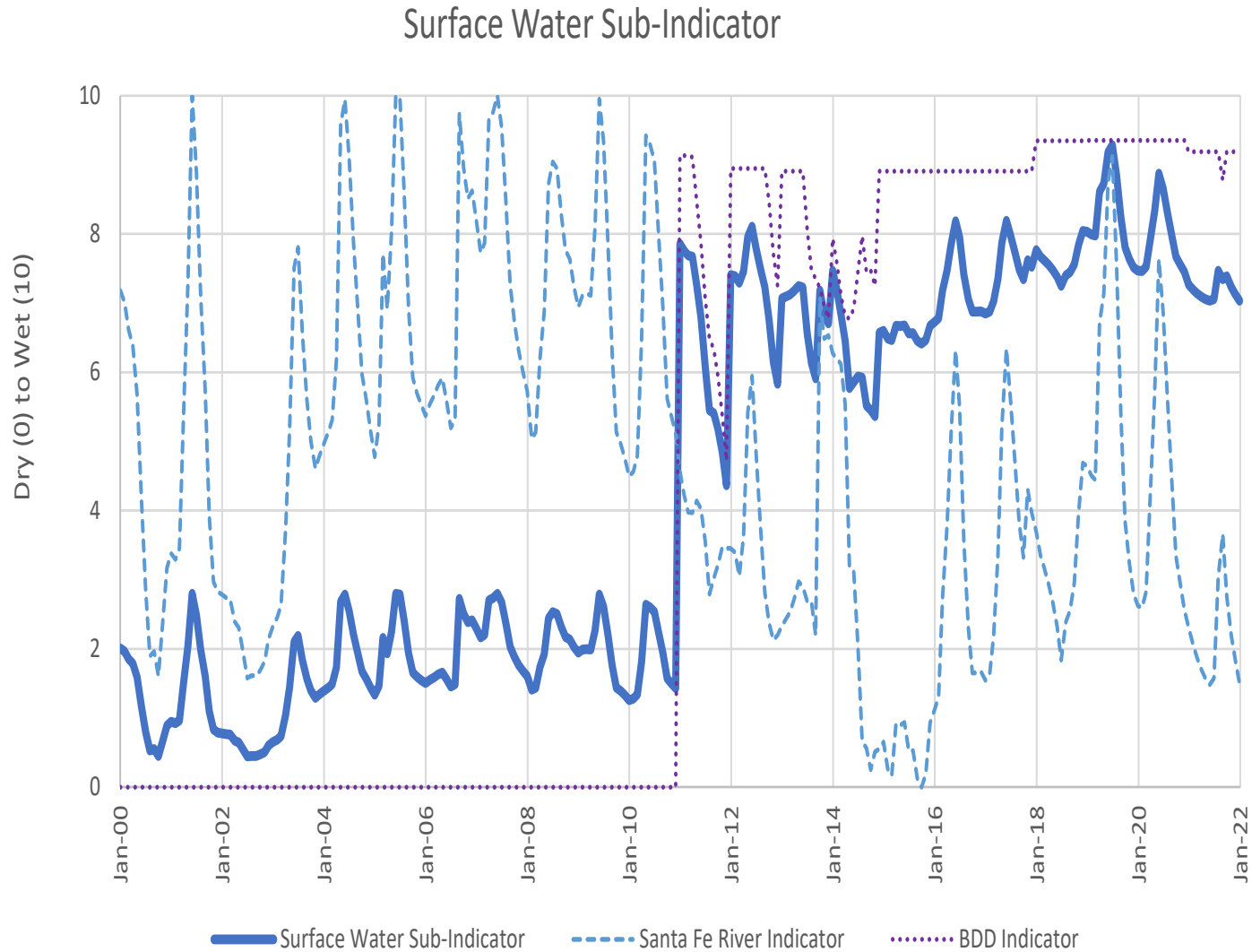
- Surface Water Sub-indicator (30% of overall Supply Indicator)
 - Based on treatable water stored in reservoirs. 72% weight to SJC and 28% to Santa Fe River based on relative sizes



Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

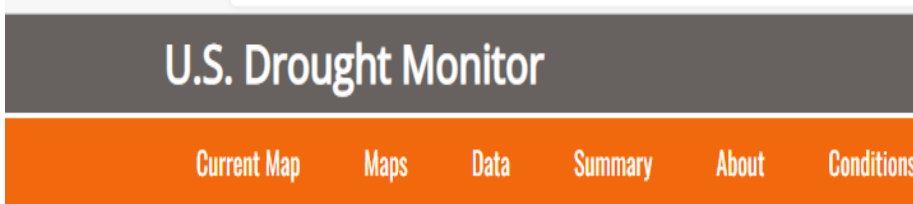
- Surface Water Sub-indicator (30% of overall Supply Indicator)



Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

- Regional Drought Sub-indicator (30% of overall Supply Indicator)
 - Based on weekly Santa Fe County drought score in the U.S. Drought Monitor (USDA-NOAA product)

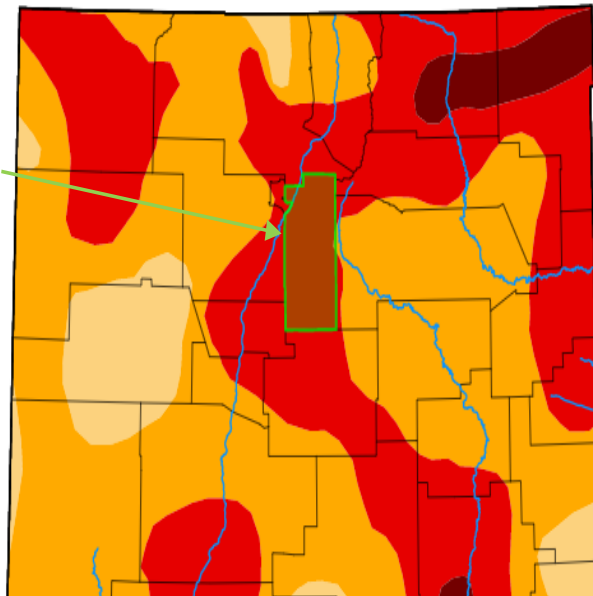


New Mexico








Map released: Thurs. March 3, 2022

Data valid: March 1, 2022 at 7 a.m. EST

Santa Fe County



Intensity

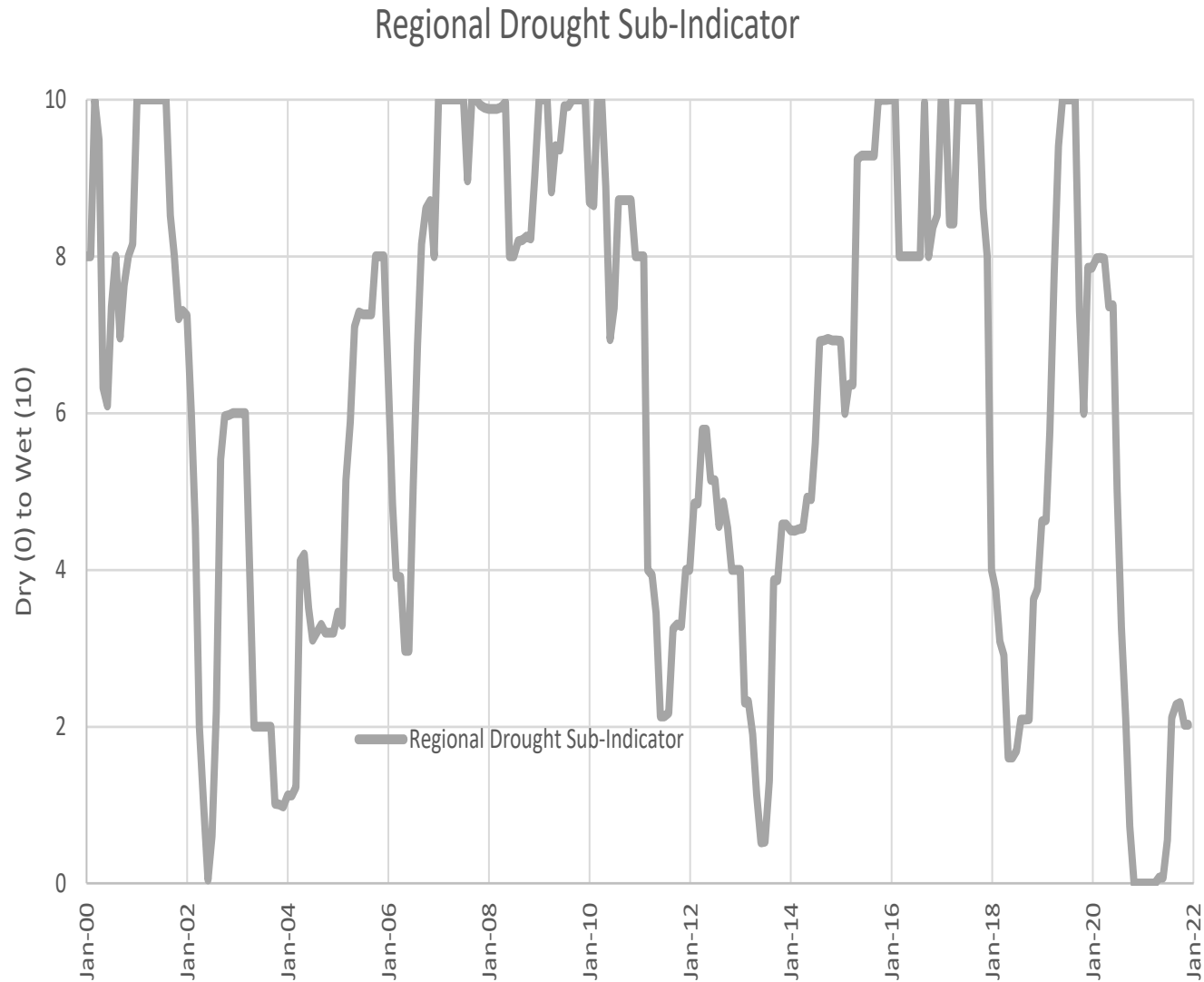
	None	-----	10
	D0 (Abnormally Dry)	-----	8
	D1 (Moderate Drought)	-----	6
	D2 (Severe Drought)	-----	4
	D3 (Extreme Drought)	-----	2
	D4 (Exceptional Drought)	-----	0
	No Data		

SFWRI Drought
Sub-Indicator value

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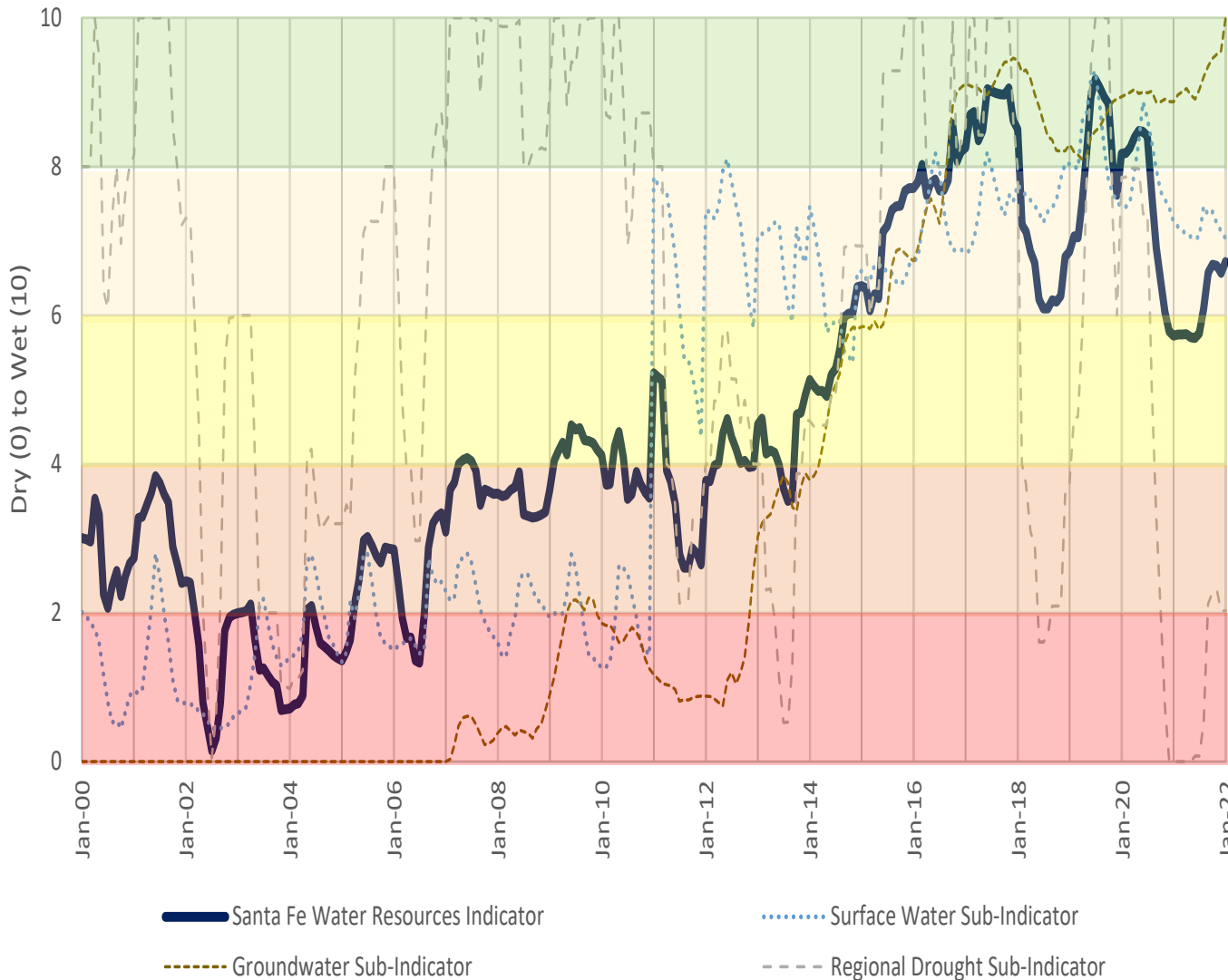
- Regional Drought Sub-indicator (30% of overall Supply Indicator)



Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

Santa Fe Water Resources Indicator



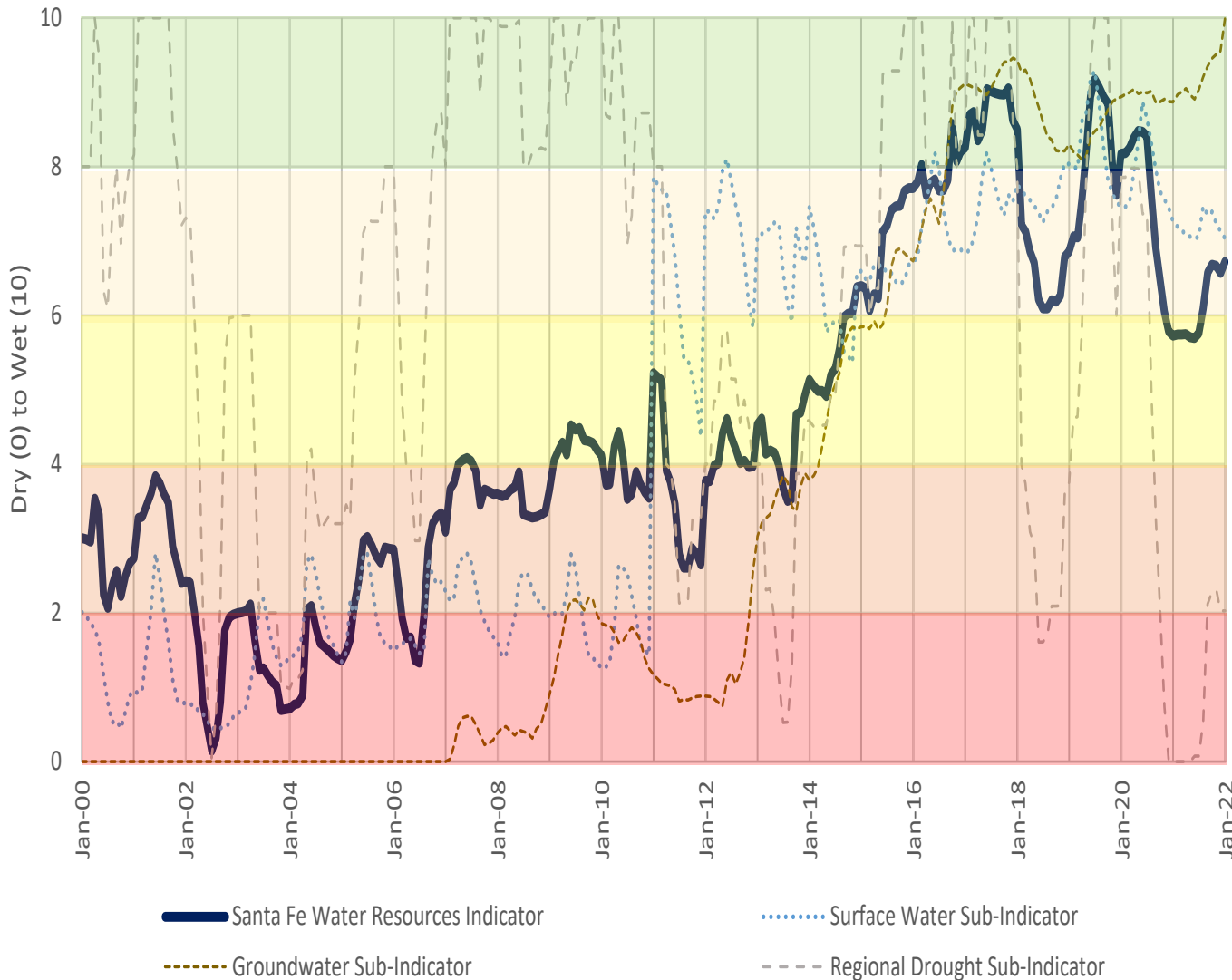
Policy response to different indicator values will be developed by engagement with City's WCC and County's WPAC and direct public outreach.

Preliminary thinking is 5 different zones of conservation efforts

Santa Fe Water Resources Indicator

A quantitative tool to summarize water availability to the City and County Water Utility systems in order to inform **seasonal** conservation policy

Santa Fe Water Resources Indicator



REVIEWS NEWS TECH MONEY WELLNESS HOME CARS DEALS

Megadrought in the West Is Worst in More Than 1,200 Years

Nearly half of the drought can be attributed to human-caused climate change, a new study finds.

“a 22-year period between 2000-2021 that's unmatched over the past 12 centuries”

<https://www.cnet.com/news/megadrought-in-the-west-is-worst-in-more-than-1200-years/>

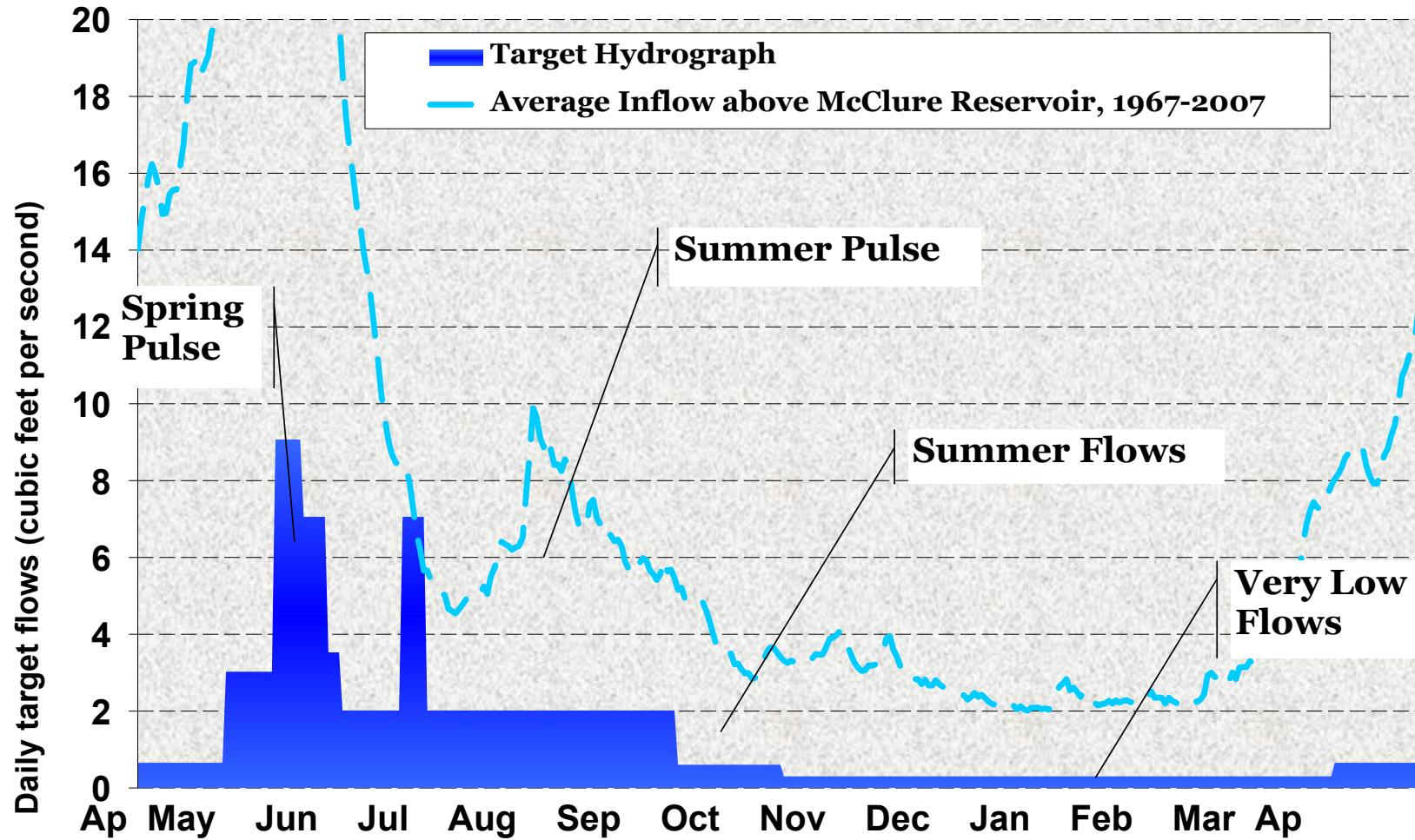
MY VIEW CAROL ROMERO-WIRTH

Building water resiliency amid megadrought

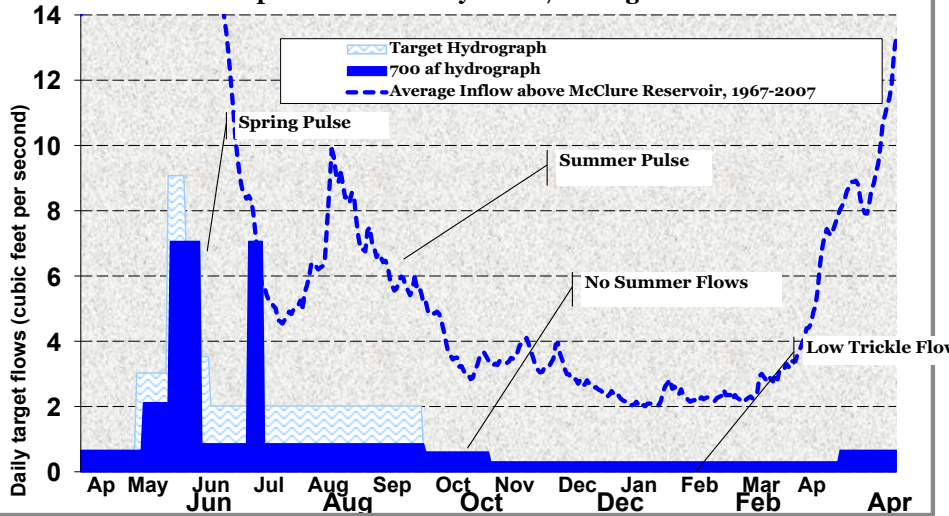
Recent headlines call out the dangerous megadrought facing communities across the West. While concern is warranted, here's the good news: Santa Fe is better off now than it was 20 years ago. Building on the proactive water decisions made by city leaders before us, we are continuing to make smart investments in our water future.



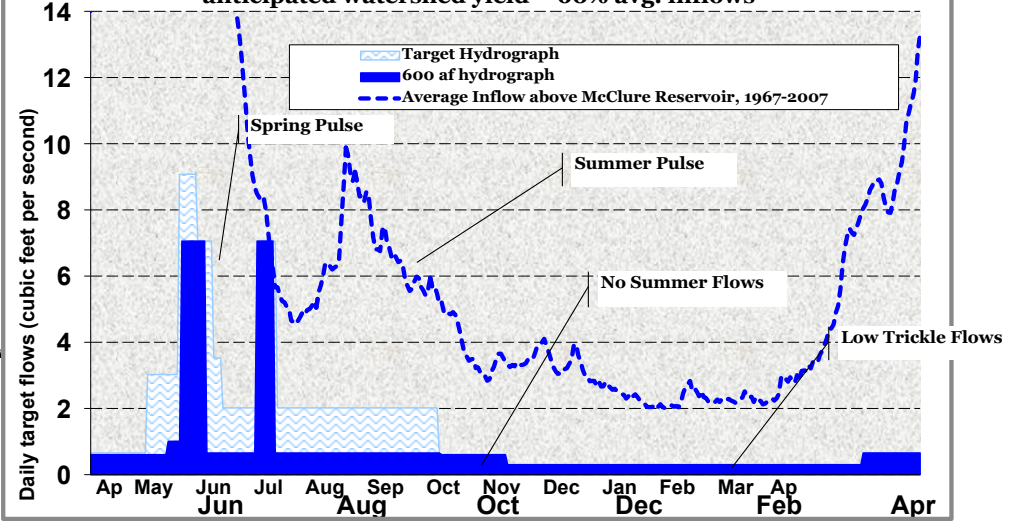
TARGET HYDROGRAPH: 1,000 acre feet



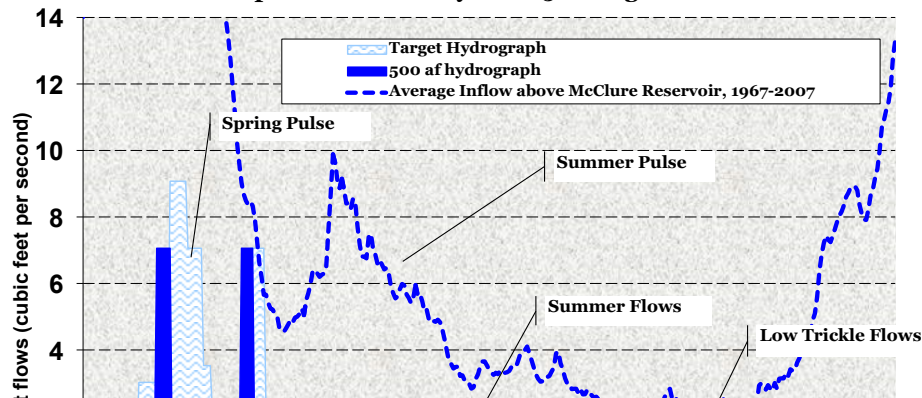
DRY YEAR HYDROGRAPH: 700 af Target Allocation, anticipated watershed yield = 70% avg. inflows



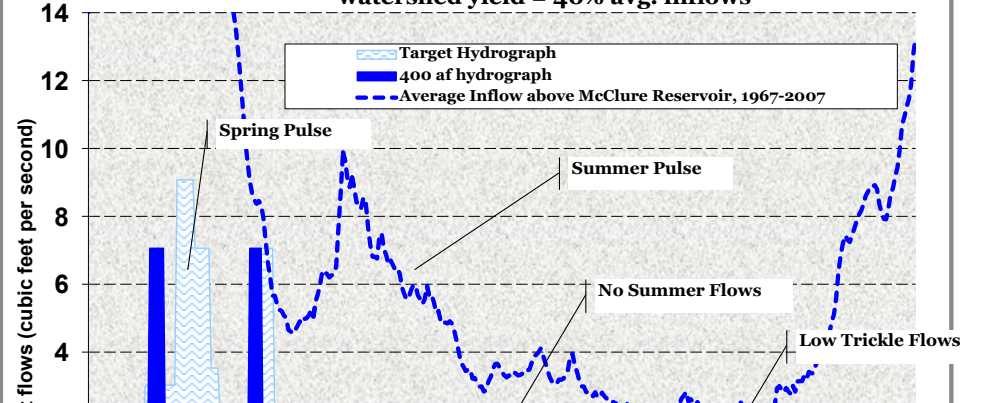
DRY YEAR HYDROGRAPH: 600 af Target Allocation, anticipated watershed yield = 60% avg. inflows



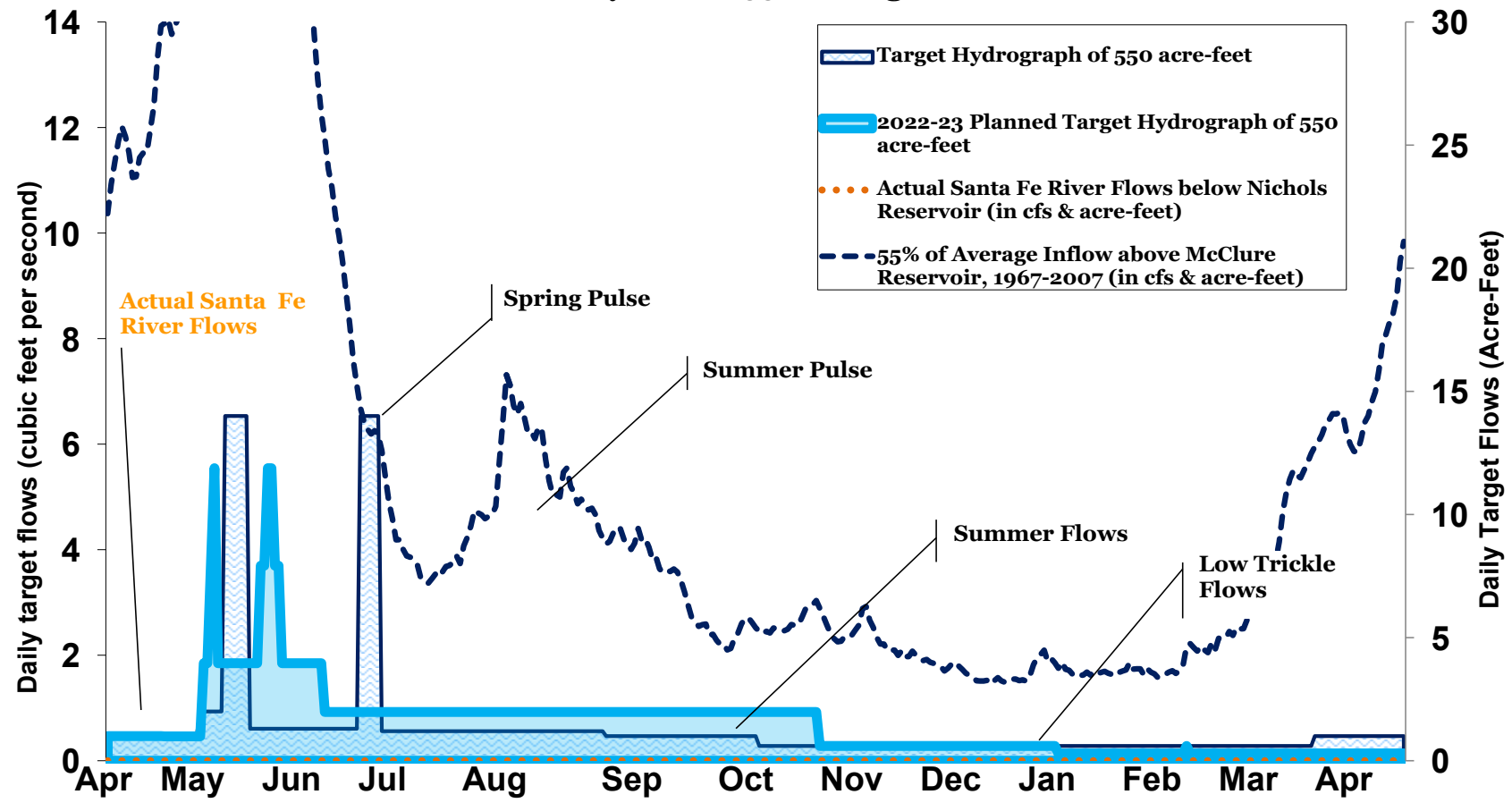
DRY YEAR HYDROGRAPH: 500 af Target Allocation, anticipated watershed yield = 50% avg. inflows



DRY YEAR HYDROGRAPH: 400 af Target Allocation, anticipated watershed yield = 40% avg. inflows



2022-23 PLANNED HYDROGRAPH: 550af Target Allocation, anticipated watershed yield = < 55% of avg. inflows



McClure Gage, MDF 1966-2007				74% of Avg. Inflow Above McClure Res. Gage			Target Hydrograph			700 af Hydrograph			600 af Hydrograph			500 af Hydrograph			400 af Hydrograph			550 acre-feet Planned Hydrograph			740 acre-feet Hydrograph of Target Flows (as measured by CRWTP staff at Below Nichols Res. gage)			
Day	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs	afd	mgd	cfs
4/15	14.0	27.8	9.1	10.4	20.6	6.7	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/16	14.8	29.3	9.5	10.9	21.7	7.1	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/17	15.3	30.4	9.9	11.3	22.5	7.3	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/18	15.9	31.5	10.2	11.7	23.3	7.6	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/19	16.2	32.2	10.5	12.0	23.8	7.8	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/20	16.0	31.7	10.3	11.8	23.5	7.6	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.20	0.30	1.00	0.33	0.50	0.00	0.00	0.00	
4/21	15.6	30.9	10.1	11.5	22.9	7.4	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/22	14.9	29.6	9.7	11.1	21.9	7.1	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/23	15.0	29.7	9.7	11.1	22.0	7.2	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/24	15.4	30.6	10.0	11.4	22.7	7.4	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/25	15.6	30.9	10.1	11.5	22.8	7.4	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/26	15.6	30.9	10.1	11.5	22.9	7.4	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/27	16.2	32.1	10.4	12.0	23.7	7.7	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/28	16.8	33.3	10.8	12.4	24.6	8.0	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/29	18.0	35.7	11.6	13.3	26.4	8.6	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
4/30	18.8	37.3	12.2	13.9	27.6	9.0	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	1.00	0.33	0.50	0.00	0.00	0.00	
5/1 May	18.9	37.5	12.2	14.0	27.7	9.0	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	0.99	0.32	0.50	0.00	0.00	0.00	
5/2	19.0	37.7	12.3	14.1	27.9	9.1	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	0.99	0.32	0.50	0.00	0.00	0.00	
5/3	18.6	36.9	12.0	13.8	27.3	8.9	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	0.99	0.32	0.50	0.00	0.00	0.00	
5/4	18.8	37.4	12.2	13.9	27.6	9.0	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	0.99	0.32	0.50	0.00	0.00	0.00	
5/5	19.1	37.8	12.3	14.1	28.0	9.1	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	0.60	0.26	0.40	0.99	0.32	0.50	0.00	0.00	0.00	
5/6	19.7	39.1	12.7	14.6	28.9	9.4	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/7	19.8	39.3	12.8	14.7	29.1	9.5	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/8	19.9	39.4	12.8	14.7	29.1	9.5	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/9	20.1	39.8	13.0	14.9	29.5	9.6	1.30	0.42	0.66	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/10	20.8	41.3	13.4	15.4	30.5	9.9	6.00	1.96	3.02	1.30	0.42	0.66	1.20	0.39	0.60	1.00	0.33	0.50	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/11	21.8	43.3	14.1	16.2	32.1	10.4	6.00	1.96	3.02	1.30	0.42	0.66	1.20	0.39	0.60	2.00	0.65	1.01	1.50	0.49	0.76	0.99	0.32	0.50	0.00	0.00	0.00	
5/12	22.8	45.2	14.7	16.9	33.4	10.9	6.00	1.96	3.02	1.30	0.42	0.66	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	3.96	1.29	2.00	0.00	0.00	0.00	
5/13	22.9	45.5	14.8	17.0	33.7	11.0	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	3.96	1.29	2.00	0.00	0.00	0.00	
5/14	23.3	46.2	15.1	17.3	34.2	11.1	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	7.92	2.58	4.00	0.00	0.00	0.00	
5/15	23.7	47.1	15.3	17.6	34.8	11.3	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	11.88	3.87	6.00	0.00	0.00	0.00	
5/16	24.0	47.7	15.5	17.8	35.3	11.5	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	3.96	1.29	2.00	0.00	0.00	0.00	
5/17	25.0	49.5	16.1	18.5	36.6	11.9	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	2.00	0.65	1.01	14.00	4.56	7.06	3.96	1.29	2.00	0.00	0.00	0.00	
5/18	26.0	51.6	16.8	19.3	38.2	12.4	6.00	1.96	3.02	4.20	1.37	2.12	1.20	0.39	0.60	14.00	4.56	7.06	14.00	4.56	7.06	3.96	1.29	2.00	0.00	0.00	0.00	
5/19	26.9	53.4	17.4	19.9	39.5	12.9	6.00	1.96	3.02	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/20	27.9	55.3	18.0	20.6	40.9	13.3	6.00	1.96	3.02	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/21	28.7	56.9	18.5	21.2	42.1	13.7	6.00	1.96	3.02	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/22	29.0	57.6	18.8	21.5	42.6	13.9	6.00	1.96	3.02	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/23	29.3	58.1	18.9	21.7	43.0	14.0	6.00	1.96	3.02	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/24	29.5	58.5	19.1	21.8	43.3	14.1	18.00	5.87	9.07	4.20	1.37	2.12	2.00	0.65	1.01	14.00	4.56	7.06	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/25	29.5	58.5	19.1	21.8	43.3	14.1	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/26	29.2	58.0	18.9	21.6	42.9	14.0	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/27	28.7	56.8	18.5	21.2	42.1	13.7	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00	
5/28	28.0	55.4	18.1	20.7	41.0	13.4	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	7.92	2.58	4.00	0.00	0.00	0.00	
5/29	27.3	54.2	17.7	20.2	40.1	13.1	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	7.92	2.58	4.00	0.00	0.00	0.00	
5/30	27.0	53.5	17.4	19.9	39.6	12.9	18.00	5.87	9.07	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	11.88	3.87	6.00	0.00	0.00	0.00	
5/31	26.5	52.6	17.2	19.6	39.0	12.7	18.00	5.87	9.07	14.00	4.56																	

6/1 Jun	26.1	51.8	16.9	19.3	38.3	12.5	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	7.92	2.58	4.00	0.00	0.00	0.00
6/2	25.3	50.2	16.4	18.7	37.2	12.1	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	7.92	2.58	4.00	0.00	0.00	0.00
6/3	24.3	48.2	15.7	18.0	35.6	11.6	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/4	23.6	46.7	15.2	17.4	34.6	11.3	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/5	22.6	44.8	14.6	16.7	33.2	10.8	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/6	22.3	44.3	14.4	16.5	32.8	10.7	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/7	22.4	44.4	14.5	16.6	32.9	10.7	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/8	22.6	44.9	14.6	16.7	33.2	10.8	7.00	2.28	3.53	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/9	22.3	44.2	14.4	16.5	32.7	10.7	7.00	2.28	3.53	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/10	21.5	42.7	13.9	15.9	31.6	10.3	7.00	2.28	3.53	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/11	20.1	39.9	13.0	14.9	29.5	9.6	7.00	2.28	3.53	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/12	18.6	36.9	12.0	13.8	27.3	8.9	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/13	17.5	34.6	11.3	12.9	25.6	8.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/14	16.6	32.9	10.7	12.3	24.3	7.9	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	3.96	1.29	2.00	0.00	0.00	0.00
6/15	15.9	31.6	10.3	11.8	23.4	7.6	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/16	15.2	30.1	9.8	11.2	22.2	7.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/17	14.7	29.1	9.5	10.9	21.6	7.0	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/18	13.9	27.7	9.0	10.3	20.5	6.7	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/19	13.4	26.6	8.7	9.9	19.7	6.4	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/20	12.8	25.3	8.3	9.5	18.7	6.1	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/21	12.0	23.7	7.7	8.9	17.6	5.7	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/22	11.2	22.2	7.2	8.3	16.4	5.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/23	10.2	20.3	6.6	7.6	15.0	4.9	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/24	9.6	19.1	6.2	7.1	14.1	4.6	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.30	0.42	0.66	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
6/25	9.0	17.9	5.8	6.7	13.3	4.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
6/26	8.7	17.2	5.6	6.4	12.7	4.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
6/27	8.5	16.8	5.5	6.3	12.5	4.1	4.00	1.30	2.02	1.70	0.55	0.86	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
6/28	8.4	16.6	5.4	6.2	12.3	4.0	4.00	1.30	2.02	1.70	0.55	0.86	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
6/29	8.5	16.8	5.5	6.3	12.4	4.0	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
6/30	8.3	16.5	5.4	6.2	12.2	4.0	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.98	0.65	1.00	0.00	0.00	0.00
7/1 Jul	7.9	15.8	5.1	5.9	11.7	3.8	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/2	7.3	14.4	4.7	5.4	10.7	3.5	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/3	6.6	13.1	4.3	4.9	9.7	3.2	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/4	6.2	12.3	4.0	4.6	9.1	3.0	14.00	4.56	7.06	14.00	4.56	7.06	14.00	4.56	7.06	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/5	5.7	11.2	3.7	4.2	8.3	2.7	14.00	4.56	7.06	14.00	4.56	7.06	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/6	5.7	11.2	3.7	4.2	8.3	2.7	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/7	5.4	10.7	3.5	4.0	7.9	2.6	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/8	5.2	10.4	3.4	3.9	7.7	2.5	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/9	5.2	10.3	3.4	3.9	7.7	2.5	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/10	5.1	10.1	3.3	3.8	7.5	2.4	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/11	5.0	9.9	3.2	3.7	7.4	2.4	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/12	4.7	9.2	3.0	3.4	6.8	2.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/13	4.6	9.1	3.0	3.4	6.8	2.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/14	4.5	9.0	2.9	3.4	6.7	2.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/15	4.7	9.2	3.0	3.4	6.8	2.2	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/16	4.8	9.5	3.1	3.5	7.0	2.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/17	4.9	9.7	3.2	3.6	7.2	2.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/18	4.8	9.6	3.1	3.6	7.1	2.3	4.00	1.30	2.02	1.70	0.55	0.86	1.30	0.42	0.66	1.20	0.39	0.60	0.60	0.20	0.30	1.98	0.65	1.00	0.00	0.00	0.00
7/19	5.0	9.9	3.2	3.7	7.3	2.4	4.00	1.30	2.02	1.70	0.55	0.86	1.30														

City of Santa Fe, New Mexico

memo

DATE: April 6, 2022

TO: River Commission

FROM: Patricio Pacheco, Water Resources Analyst

CC: Alan G. Hook, Water Resources Coordinator &
Santa Fe Municipal Watershed Program Manager

ITEM / ISSUE: Update for Santa Fe River target flow activity from April 15, 2021 through March 31, 2022; and anticipated planning for the Santa Fe River target flow hydrograph at the end of April 2022 through April 2023.

SANTA FE RIVER TARGET FLOW HYDROGRAPH FOR 2020-2021: The Santa Fe River target flows are administered under the terms of the Santa Fe River Target Flow Administrative Procedures (City Resolution #2012-28). The Santa Fe River Target Flow Ordinance (Ordinance #2012-10) provides up to 1,000 acre-feet of bypass flows to the Santa Fe River downstream of Nichols Reservoir. In years when the Natural Resources Conservation Service (NRCS) forecast for the runoff from mountain snows falls below 75% of the annual average, Santa Fe River target flows are scaled downward. This past target year, the April 1st forecast was 31% of the thirty-year average streamflow yield for the Santa Fe River; therefore, the Santa Fe River target flows were projected to be 310 acre-feet (see Attachment 1: 2021-22 Santa Fe River Target Flow Hydrograph).

It is important to note that the other determinant of Santa Fe River bypass flows administered through the Santa Fe River target flow program is the concept of the bypass constraint. The administrative procedures for the program define the bypass constraint as follows:

“Bypass constraint”: an operation principle that requires the rate at which water is passed through the outlet works of Nichols Reservoir dam is always equal or less than the stream inflow at the ‘above McClure’ gage.

In other words, at any given time, the volume of Nichols Reservoir outflow administered for the Santa Fe River target flows is not allowed to exceed the volume of inflow at the City’s upper reservoir, McClure Reservoir.

The purposes of the target flows are to help support the Santa Fe River’s green corridor of trees, grasses, and other plants; to support healthy wildlife habitat; and to add to the beauty of free-flowing water to the parklands along the Santa Fe River. Other benefits of maintaining a vegetated, green river corridor include shading and cooling of the urban environment; supporting plants that convert carbon dioxide into oxygen; helping to clean stormwater runoff; and controlling erosion. The target flow hydrograph has also been administered to provide flows that support community events, scheduled along the Santa Fe River as provided for in the Santa Fe River Target Flow Ordinance.

THE UPCOMING SANTA FE RIVER TARGET FLOW YEAR MAY 1, 2022 THRU APRIL 14, 2023 (THE YEAR AHEAD):

The Natural Resources Conservation Service (NRCS) forecast for this year's streamflow runoff, as of April 1st (see Attachment 2: NRCS Rio Grande Basin Water Supply Forecast), for the upper Santa Fe River will be equal to or less than 55% of the thirty-year average streamflow yield; therefore, the Santa Fe River target flows will likely be a dry year hydrograph of 550 acre-feet for the 2022-23 Santa Fe River target flow year. .

A number of considerations will determine the nature of the Santa Fe River Target Flow Hydrograph (for both the timing and volume of the flows) that need to be developed, in coordination with the River Commission, for this year's Santa Fe River target flows. Due to the fact that this is a dry year and anticipated construction at Nichols Dam, the most notable changes are the following: 1) as construction begins in Spring, 2023 at Nichols Dam, bypass flows may be suspended for an extended period; 2) as called out in the administrative procedures in dry years when the anticipated watershed yield is less than 50%, or, if for other climatic or hydrologic reasons daily target flows adequate for the Fishing Derby cannot be met, the Fishing Derby will be suspended. 3) This year the yield of 50% has been met; however, due to low storage volumes in McClure Reservoir combined with extreme drought conditions and forecasted below-average Santa Fe River streamflows above McClure Reservoir, the City of Santa Fe Water Division Director *may* adjust target flows to the river during a water emergency. See Section 4.8 Emergencies and Flow Adjustment of the Administrative Procedures for Santa Fe River Target Flows:

To help prevent an interruption in water service and to protect public health and safety, target flows to the river may be adjusted during a water emergency. If the operational water system supply as determined by the water division director's sole discretion, equals between eighty percent (80%) and ninety-nine percent (99%) of operational water system demand, the city manager may declare a "Water Warning - Orange" water emergency implementation stage. Chapter 25-5, Exhibit C (Amended: November 30, 2011 by Ord. No. 2011-38) states that under "Water Warning – Orange" water emergency implementation stage, target flows to the Santa Fe River may be suspended.

Attachment 1: 2021-2022 Santa Fe River Target Hydrograph of 310 acre-feet with measured flows below Nichols Reservoir.

Attachment 2: Natural Resource Conservation Service, Rio Grande Basin Water Supply Forecast April 1, 2022.

Attachment 3: Resolution 2012-28 Exhibit A_ Administrative Procedures for SF River Target Flows

Attachment 4: Ordinance #2012-10.

CITY OF SANTA FE

**ADMINISTRATIVE PROCEDURES FOR
SANTA FE RIVER TARGET FLOWS**

Adopted by: Resolution No. 2012-28
Date Adopted: February 29, 2012

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Article I: Introduction

These administrative procedures describe how City staff will implement Section 25-13 SFCC 1987 to provide 1,000 AFY in target flows to the Santa Fe River.

As the City of Santa Fe has worked in recent years to further diversify its water supply portfolio, it has also worked on a range of initiatives to make substantial improvements along the Santa Fe River and within the river's broader watershed. These improvements have included forest management practices in the upper watershed; riparian rehabilitation projects along the entire river corridor; a variety of erosion control and storm water management projects; construction of significant new reaches of the Santa Fe River Trail; and enhancements within the City's parklands along the river's banks. Consistent with these efforts to protect the City's water supply, improve the drainage and hydrologic functions of the river system, support greenery, shade and wildlife habitat, and to beautify the corridor with aesthetic enhancements, the City also seeks to increase water flows in the river below the City's reservoirs.

A commitment to manage water resources in ways that allow for a programmatic approach to provide for water flows in the Santa Fe River is consistent with the City's Long Range Water Supply Plan (LRWSP). The LRWSP states that, "The City will provide water to maintain a living Santa Fe River, except under drought or emergency conditions." Further, the Plan states, "After the BDD (the Buckman Direct Diversion facility) is online in 2011 and barring legal restrictions, the City will, in accordance with public input, initially release approximately 1,000 AFY [acre feet per year] of water from the Santa Fe River canyon reservoirs to the Santa Fe River, except under drought or emergency conditions."

Following successful river flow programs that were implemented during 2009, 2010 and 2011, the City now seeks to formalize its commitment to provide for river flows in the Santa Fe River in future years. These Administrative Procedures, along with enabling legislation (City ordinance and resolution), establish an approach to codify and give guidance for the City's river flow commitment.

Prior year flows administered for the Santa Fe River yielded valuable information regarding the management of flow regimes; resulted in positive impacts within the riparian corridor; and were extremely popular with people who visited the river, experienced water flowing through the City, and sat or played along the river's banks. These Administrative Procedures address issues such as ideal and contingent flow scenarios; flow volume accounting procedures; adjustments to flow scenarios due to water surpluses or shortages; and other operational details.

Article II: Title, Authority, Applicability, Purpose & Interpretation

- 2.1 **Title.** Administrative Procedures for Target Flows in the Santa Fe River shall be cited and referred to herein as the "Administrative Procedures."
- 2.2 **Authority.** Administrative Procedures for Target Flows in the Santa Fe River are adopted pursuant to the Santa Fe River Target Flow Ordinance, Article 25-13 SFCC 1987 and Resolution No. 2012-____.
- 2.3 **Applicability.** Pursuant to the Santa Fe River Target Flow Ordinance, these Administrative Procedures apply to target flows on or after February 29, 2012, the date of adoption of the Santa Fe River Target Flow Ordinance.

2.4 **Purpose.**

Ord. No. 2012-10 directs the City of Santa Fe to bypass flow to the Santa Fe River downstream of Nichols Reservoir. These administrative procedures describe the means and methods by which the flows will be administered, monitored, measured, adapted to variable conditions and reported in order to ensure that the objectives for the flows are met to the greatest extent possible.

2.5 **Interpretation.**

These Administrative Procedures shall be liberally interpreted to accomplish the purposes set forth in Article 25-13. To the extent of ambiguity, omission or clear error in these Administrative Procedures, City staff and the flow manager shall have authority to interpret and clarify any such matter during implementation of these regulations and procedure so as to effectuate the intent of Article 25-13.

Article III - Definitions of Terms and Phrases

Defined Terms and Phrases. The following defined terms and phrases shall apply to the Administrative Procedures.

1. **"above McClure gage"**: the stream gaging station 08315480 (or 08315479 for low flows) located above McClure Reservoir; this is the measuring point for flows entering McClure Reservoir.
2. **"acre-foot (af)"**: a quantity or unit of water that is equal to the amount of water required to fill an area of 1 acre with 12 inches (i.e., 1 foot) of water; one acre-foot is equal to 325,851 gallons.
3. **"actual daily flow"**: the daily rate of stream flow at the below Nichols gage as recorded by the flow operator.
4. **"annual target"**: the quantity of water in af to be bypassed to the river based upon anticipated watershed yield, within the target year.
5. **"anticipated watershed yield"**: the expected annual yield of water to the Santa Fe River and the municipal reservoirs within the Santa Fe River upper watershed, expressed as the percentage of the historical average; the anticipated watershed yield is estimated as of April 15th using the best available information including the amount of snow, both as depth (in inches) and snow-to water equivalent (in inches) at the weather stations in the upper watershed (Santa Fe and Elk Cabin); the Santa Fe Basin forecast predictions from Natural Resource Conservation Service (NRCS); weather forecast from the National Weather Service and NOAA; and any other pertinent appropriate weather-related information.
6. **"below Nichols gage"**: the stream gaging station 08316505 located below Nichols Reservoir, or at a comparable location of measurement at or below the outlet from Nichols Dam; this is the measuring point for target flows administration under these Administrative Procedures.
7. **"Buckman Direct Diversion Project (BDD)"**: a water supply project that provides water supply to the region using the San Juan Chama Project water and Rio Grande surface waters; the project began producing water in January of 2011 and is expected to be fully operational by July of 2011.
8. **"bypass constraint"**: an operating principle that requires the rate at which water is passed through the outlet works of Nichols Reservoir dam is always equal or less than the stream inflow at the 'above McClure' gage.
9. **"bypass flows"**: generally, water that flows past a diversion or storage facility. In these Administrative Procedures, it refers to water that the City chooses not to store in the municipal reservoirs and thus allows to flow to the Santa Fe River below Nichols Reservoir

- provided that the rate at which the bypass flow is passed through the outlet works of Nichols Reservoir dam is always equal to or less than the stream inflow at the 'above McClure' gage.
10. **"critical-dry year"**: a year in which the anticipated watershed yield is less than 30% of the historical average watershed yield.
 11. **"critical-dry year hydrograph"**: the graphical representation of the desired target flows in critically dry years in which the annual discharge is 300 afy.
 12. **"cubic feet per second (cfs)"**: a *rate* of water flow; one cubic feet per second equals two acre-feet per day and 0.65 million gallons per day
 13. **"daily target flow"**: the desired daily stream flow at the below Nichols gage.
 14. **"dry year"**: a year in which the anticipated watershed yield is between 30% and 75% of the historical average watershed yield.
 15. **"dry year hydrograph"**: the graphical representation of the desired target flows in dry years in which annual discharge is scaled down from 1000afy (to between 300 and 700 afy) based on decreased, anticipated watershed yield.
 16. **"flow manager"**: a member of City of Santa Fe staff responsible for managing releases of water to the River, record-keeping, reporting, and determining changes to daily target flows as prudent under adaptive management; the flow manager is the River and Watershed Coordinator, unless otherwise designated by the City Manager.
 17. **"flow operator"**: a water Division staff member responsible for making water utility system adjustments to meet the daily target flow and for measuring and recording the actual stream flow.
 18. **"historical average watershed yield"**: the average of annual yield of stream flow in the Santa Fe River within the Santa Fe River upper watershed as determined by stream flow measurements at USGS gage 08316000 (Santa Fe near Santa Fe) and USGS gage 08315479 and 08315480 (18-inch and 8-foot above McClure Reservoir, respectively); between 1914 to 2007 the average annual yield measured at Santa Fe near Santa Fe gage was 4,909 af.
 19. **"hydrograph"**: a graphic representation of the variation in stream discharge, in cubic feet per second, plotted against time.
 20. **"municipal reservoirs"**: the reservoirs on the Santa Fe River in the upper watershed - Nichols and McClure with 684 and 3,256 acre-feet of capacity, respectively.
 21. **"natural hydrograph"**: the graphical representation of stream flow as it varies over time in response to climatic (snow melt, precipitation) and man-made (storage, urban storm flow runoff) conditions. The natural hydrograph herein refers to the condition prior to the addition of the target flows governed by these Administrative Procedures, as measured on the Santa Fe River at the existing stream gage locations.
 22. **"public process"**: the public engagement and community outreach process through which the objectives for river flows were developed. From December 2010 through February 2011 input was gathered through conversations with over thirty stakeholders (including many River Commissioners) and two community meetings with over ninety, culturally and generationally diverse participants.
 23. **"river"**: The Santa Fe River reach that begins below Nichols Reservoir
 24. **"release flows"**: the flows from the outlet works of Nichols Reservoir that are discharged from Nichols dam in order to manage flood or potential flood flows.
 25. **"spills"**: flows from Nichols Reservoir that are discharged over the Nichols dam spillway when the reservoir is full.
 26. **"target flows"**: the daily, seasonal or annual amount of water (as a volume or a rate) desired in the river as measured at the below Nichols stream gage. The quantity is variably identified in various sections of the Administrative Procedures depending upon the anticipated watershed yield.
 27. **"target hydrograph"**: means the graphical representation of the daily target flow

necessary to provide up to 1,000 acre-feet of water in the Santa Fe River as measured at the below Nichols gage. The quantity of water is variably identified in several sections of the Administrative Procedures for Target Flows in the Santa Fe River depending upon anticipated watershed yield.

28. **“target year”**: the period beginning April 15th and continuing through April 14th the following year; this definition allows the flow manager to adjust the target flows as necessary according to anticipated watershed yield from the mountain snow pack.
29. **“upper river”**: the reach in the river for which target flows are maintained year-round to support all aspects of a healthy riverine and riparian ecosystem; at a minimum as far as Two-Mile Pond, and ideally, as far as the head gate for the Acequia Madre.
30. **“water service”**: water provided to a customer through the municipal water utility system.
31. **“water service emergency”**: a situation that would cause an interruption in the Water Division’s ability to provide water service or that threatens public health and safety.
32. **“water system”**: the water utility system owned and operated by the City, and includes without limitation all the physical plant, wells, pumps, transmission and distribution facilities, water treatment facilities, storage facilities and all water rights and rights to water owned by the City for use in its water utility.

Article IV – Administrative Procedures

4.1 Objectives

4.1.1 Target Flow Objectives

- a) Create an ecologically healthy vegetative corridor
- b) Benefit the entire community with flows (e.g., equity)
- c) Nurture a beautiful, natural urban greenspace with water in an arid environment
- d) Provide an educational resource for schools and steward the resource for the community

4.1.2 Adaptive Management to Address Objectives and Purpose

The hydrographs presented in these Administrative Procedures provide guidance, or examples, for the administration of flows in a manner that meets the objectives and purpose of the target flows. Actual flows may be adjusted in response to watershed yield forecasts, evolving seasonal conditions and/or feedback from monitoring. When changes to daily target flows are necessary or merited (i.e., adaptive management), the flow manager and/or flow operator shall take into consideration the objectives identified above and the purpose identified for the various components of the hydrographs.

4.2 Target Hydrograph and Target Flow Seasons

4.2.1 Target Hydrograph and Target Flows

The target hydrograph (Figure 1) contains stream flow targets in cfs and af and a schedule for increasing and decreasing flows. The total volume of the target hydrograph is 1,000 afy. The target hydrograph will be adjusted in dry and critical-dry years to conform with the dry year hydrographs and critical-dry year hydrograph as described in Section 3. The schedule is approximate and subject to modification under the guidelines in the Article 4.11: Adaptive Management.

The target hydrograph includes the following aspirational goals:

- **Low Flows for the Upper River.** Flows are 0.3 cfs during the colder season from mid-

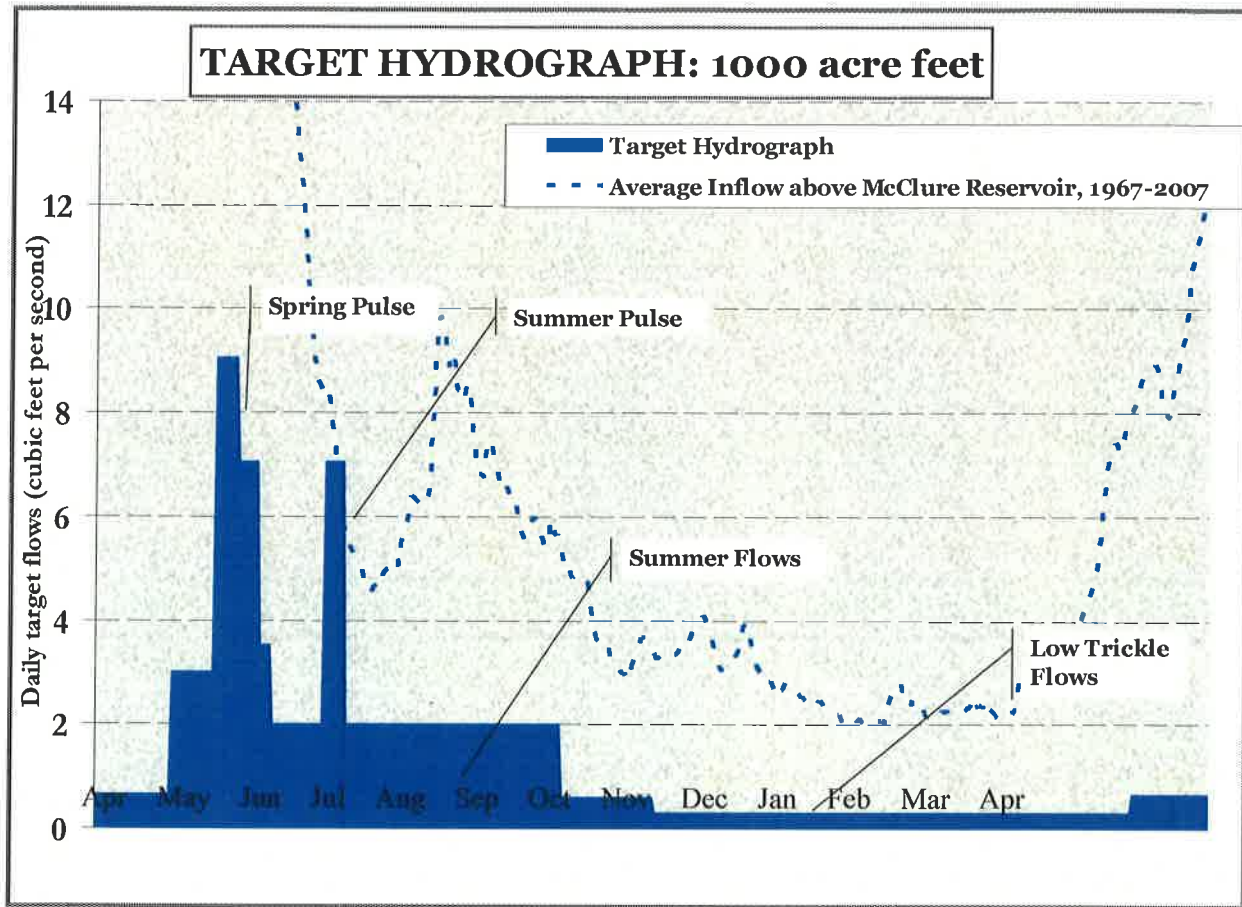
October to mid-March when vegetation is dormant. Flows increase to 0.6 cfs from mid-March to early May and from mid-September to mid-October. The purpose of the mid-September to early May flows is to provide for flows in the upper river to:

- support plant life with irrigation and maximize riverine and riparian ecological health;
 - recharge ground water, subsurface flows and bank storage during periods of plant dormancy to increase availability of water in the warmer months;
 - maintain a wet environment to support the life cycles of macroinvertebrates;
 - recharge local groundwater and sub-surface flows;
 - ensure a wetted river bed so that spring and summer flows will travel farther and more efficiently along the river course.
- **Spring Pulse.** Flows are 3 cfs for two weeks beginning in early May, then increase to 9 cfs for a week following, and then drop to 7 cfs for a week in early June. The purpose of the spring pulse is to provide as much water to the river reach (including San Ysidro crossing and the intersection with Route 599) as feasible. The timing and magnitude of the spring pulse is designed to provide necessary flows through downtown for the Fishing Derby and River Festival and for the blessing of the river in the village of Agua Fria around the day of San Ysidro, patron of the crops. The purpose of the spring pulse is to:
 - mimic natural spring runoff that is provided by the melting of accumulated winter snows;
 - irrigate the trees and other vegetation along the river corridor to support the typical spring time activities within tree/plant (and faunal) annual life cycles as plants are beginning to draw water, beginning to produce buds and leaves;
 - extend surface water flows as far as possible with the objective of reaching beyond the San Ysidro crossing down to the City's Waste Water Treatment Plant;
 - recharge local groundwater and sub-surface flows;
 - continue the process of ground water recharge that will benefit plant life into the summer months.
 - **Summer Flows.** Flows are an average of 2 cfs from mid-June to mid-September. The flow manager may increase or decrease the flow rates to meet flow objectives, with particular regard for major events in Santa Fe, provided that the average is maintained and flows are not reduced below .3 cfs.

The purpose of the summer flows is to:

 - provide flows through downtown, and the Santa Fe River Park, for aesthetic and social benefit;
 - supply irrigation to enhance the river's function as an appealing urban greenbelt;
 - recharge local groundwater and sub-surface flows;
 - maintain the wetted river bed so that flows from rainfall events will travel downstream farther and more efficiently.
 - **Summer Pulse.** Flows are 7 cfs for one week in early July. The purpose of the summer pulse is to:
 - push flows once again downstream to San Ysidro Crossing and the river's intersection with Route 599 during the hot and dry periods in advance of the summer monsoon rains;
 - sustain vegetation during the hottest time of year, with moisture for new/germinating seedlings, and ultimately enhancing the river corridor as an appealing urban greenbelt;
 - provide flows for river bank irrigation and wetting of the river bed in the period between spring runoff and the likely arrival of monsoon rainfall.

Figure 1



4.3 Dry and Critical-Dry Year Target Flow Reductions

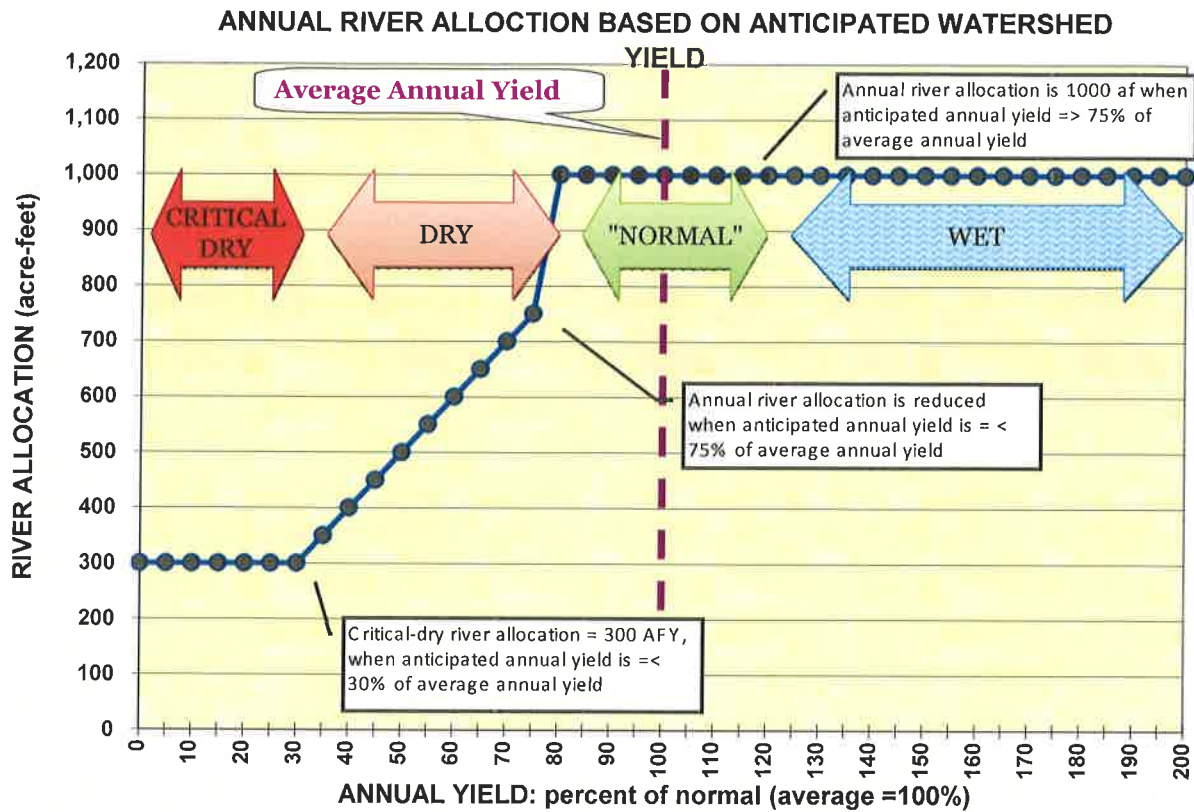
4.3.1 Reduction of Target Flows in Dry and Critically Dry Years

A dry year is defined as a year in which the anticipated watershed yield is equal to or less than 75% but greater than 30% of historical average. A critical-dry year is a year in which the anticipated watershed yield is equal or less than 30% of the historical average. In dry and critical-dry years, the total volume of the target hydrograph (1,000 af) will be reduced, by multiplying 1,000 by the percentage of the anticipated watershed yield:

$$TargetHydrograph \times AnticipatedWatershedYield_{yearX} = target\ flows_{yearX}$$

For example, in a year where the anticipated watershed yield is 65% of average, the target flow for the target year is calculated by 1,000 afy x 65% = 650 af. The reduction calculation is depicted graphically in Figure 2.

Figure 2



4.3.2 Dry Year Hydrographs

In dry years, the flow manager will allot the timing and magnitude of the daily target flows in a manner consistent with the following guidelines:

- (a) reduction in summer flows,
- (b) scaling-down – but not eliminating – the spring pulse and,
- (c) reduction in low flows from 0.30 cfs to 0.15 cfs.

The timing and magnitude of dry year target flows for 700 af, 600 af, 500 af, and 400 af are described in the Dry Year Hydrographs in Appendix A.

While scaling back the quantity of the annual target flow in dry years, the priority is to provide for spring and summer pulses to fulfill the purposes of the pulses as outlined for the 1000 af target flow in section 4.2.1 above.

4.3.3 Critical-Dry Year Hydrograph

In critical-dry years, in which the total target flows equal 300 af per target year, the daily target flows will be managed in a manner consistent with the following guidelines and as illustrated by Figure 3:

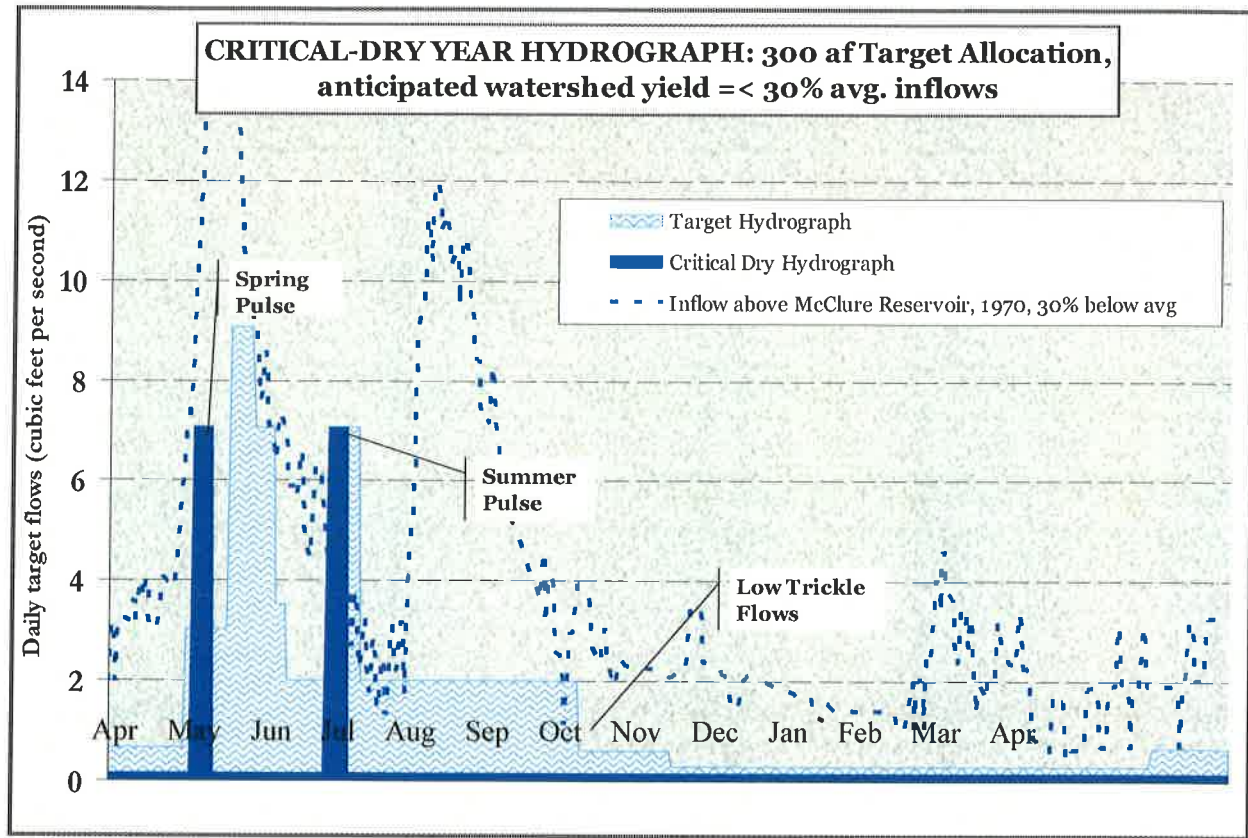
- a) sustained low flows of 0.15 cfs,
- (b) one spring and one summer pulse, each of approximately 100 af.

The schedule of the pulses shall generally follow the timing of the pulses in the target

hydrograph. The magnitude of the pulses shall be approximately 7 cfs, provided that the daily target flows are within the bypass constraint. The river shall retain flows of at least 300 afy barring an emergency or unforeseen infrastructure constraint (e.g., failure of Nichols’s Reservoir outfall structure). The purpose of the critically dry year hydrograph is to maintain a wet corridor in the upper river for riverine and riparian ecological benefit while providing two downstream pulses for the purposes of the pulses as outlined for the 1000 afy target flow in section 4.2.1 above.

In critical-dry years, since the daily target flows for the Fishing Derby cannot be reliably met, the Fishing Derby will be suspended.

Figure 3



4.4 Wet Year Flows

During wet years, defined as when the anticipated watershed yield is greater than the historical average, the river will be allocated water according to the target hydrograph (e.g., 1,000 afy) in the target year. In wet years, the actual daily flows will likely be greater because of flow contributions from reservoir flood management, and because of greater flows within the urban watershed. These greater daily flows will meet many of the objectives described in Article 4.1. Furthermore, the irrigation needs of the river corridor will be supplemented by the above-average spring precipitation. By not increasing the target hydrograph in a wet year, in wet years the City may be able to put the full amount of the City’s Santa Fe River water rights under License 1677 to beneficial use and thus rest the City’s well fields and use of local groundwater resources.

4.5 Management and Accounting of Releases and Spills

4.5.1 Management of Municipal Reservoir Flood Flows

The City manages the municipal reservoirs in part, in a way that protects the river and the urban watershed from floods. Flood management includes both the capture of peak inflows from the upper watershed and the management of release flows and spills from Nichols and McClure Reservoirs.

Pursuant to Article 25-13 SFCC 1987, the flow manager and flow operator are directed to manage, as much as possible, the release of flows and spills in a manner consistent with the target hydrograph and the objectives herein. This includes:

- a) matching the timing and magnitude of the flows,
- b) scaling the additional release flows in a manner which increases the magnitude of the spring pulse
- c) discharging the release flows in a manner to augment the magnitude of the low flow.

4.5.2 Accounting of Releases and Spills vis-à-vis the Target Hydrograph

Water that is released and/or spilled for flood management will count toward the daily target flows and target hydrograph, when the flows are within the daily target flows of the target hydrograph. If water greater than the daily target flows is released or spilled into the river, the quantity of water that exceeds the daily target flow will not be counted toward the 1,000 afy of the target year. For example, if the total planned target flow for a period of May 20 to June 3 is 300 af, but necessary reservoir management results in actual flow of 1,000 af, then 300 af shall be counted toward the planned commitment and 700 af shall not be counted, provided that the 300 af met the daily flow targets desired under the target hydrograph.

The purpose of allowing water spilled or released to count toward the 1,000 af target hydrograph is so that the municipal water utility can store excess water in wet years for water supply to compensate for the additional use of groundwater required in critically dry years. The water released or spilled in excess of the target hydrograph and daily target flows cannot be stored and released for the river later in the season because of the water right and storage limitation discussed in the next section.

- 4.5.3 Except as described above in section 4.5.2, the 1000 acre-feet volume of water shall not include water released for any other purpose at the time of release.

4.6 Water Rights

4.6.1 Use of the City's Santa Fe River Water and Storage Rights

The City is not using any of the water rights under License 1677 and Declaration No. 01278 to comply with Article 25-13 SFCC 1987. The City will continue to periodically put all the water rights under License 1677 and Declaration No. 01278 to beneficial use.

4.6.2 Bypass Constraint

In order to assure that the administration of Ord. No. xxxx does not adversely interfere with the storage, diversion and use of water under License 1677 and Declaration No. 01278, the flow manager and flow operator will manage the daily target flows in a manner such that the target flows will not come out of water stored under License 1677 and Declaration No. 01278 in the municipal reservoirs. This means that the City will not discharge water to the river that it has stored. To accommodate this constraint, the flow operator will regulate the daily target flow in a

manner such that discharges from Nichols Reservoir to the river shall not be greater than the daily inflow into McClure Reservoir; hence the flow operator will only bypass water for daily target flows.

4.6.3 **Recognition of Other Surface Water Right Users**

The City recognizes that there are other surface water right holders of Santa Fe River surface water, including those with partially adjudicated rights. Nothing in these Administrative Procedures should be construed to define, manage or be in conflict with the valid rights of other surface water right holders.

4.7 **Management and Operational Procedures**

Management and administration of daily target flows to the river require participation by the flow manager, flow operator, the Water Division director, other Water Division staff, and the River Commission Chair to ensure that flows are released in a timely manner according to the target hydrograph, dry year hydrographs, or the critically dry year hydrograph.

4.7.1 **Flow Management**

The flow manager, in consultation with the Water Division staff, shall be responsible for determining the quantity of water allocated to the target year based on the anticipated watershed yield. The flow manager will also determine the daily target flows of the target hydrograph, or deviations therefrom based on the anticipated watershed yield, by fitting the annual target and associated hydrographs to the upcoming target year. The flow manager will annually present the hydrograph for the upcoming target year to the River Commission at its April meeting for review. The flow manager will provide a copy of the target year hydrograph to the Water Division Director, the Water Division source of supply manager and the Level Four operators at the Canyon Road Water Treatment Plant for implementation.

When necessary, the flow manager may alter the daily flow targets in a manner consistent with the adaptive management objectives described in Section 11. These alterations may incorporate consultation with the River Commission Chair or designee, the flow operator, and the Water Division director. The flow manager will be the city's river and watershed coordinator or another member of city staff designated by the city manager. All adjustments to the daily target flow shall be made via email to the Water Division Director, the Source of Supply Manager, the Canyon Road Water Treatment Plant Level 4 Operators. The River Commission Chair shall be copied (cc:) on all communications directing the adjustment of daily target flows.

4.7.2 **Flow Operations**

The flow operator shall be the Water Division Source of Supply staff person on duty and responsible for controlling the daily release rates. The flow operator will adjust the discharge water from Nichols Reservoir in accordance to the daily target flow, and record the actual daily flow at the below Nichols gage. The flow operator may reduce the daily flow target to match daily inflow at the McClure reservoir, should the daily flow target exceed the daily inflow.

4.7.3 **Flow Adjustment Infrastructure**

The flow operator adjusts the daily target flows for the river by regulating the "splitter box" valve at the Canyon Road Water Treatment Plant control panel, and then sending a system operator to the below Nichols gage to see what effect the adjustment had on the actual instantaneous flow. Because of the cumbersome nature of this procedure, the daily flow targets in these Administrative Procedures are adjusted no more than weekly. Should, in the future, the outlet works be reengineered to be more nimble, and the below Nichols gage provide real time data, the daily target flows may be managed and adjusted more frequently, in particular in response to

climatic conditions.

4.8 Emergencies and Flow Adjustment

To help prevent an interruption in water service and to protect public health and safety, target flows to the river may be adjusted during a water emergency. Upon implementation of a Water Emergency Management Plan, target flows to the Santa Fe River will be adjusted pursuant to Chapter 25-5.6 and Exhibits C (Water Warning Orange) and D (Water Emergency – Red) SFCC 1987.

4.8.1 Water Emergency Implementation Stages

If the operational water system supply as determined by the water division director's sole discretion, equals between eighty percent (80%) and ninety-nine percent (99%) of operational water system demand, the city manager may declare a "Water Warning - Orange" water emergency implementation stage. If the operational water system supply as determined by the water division director's sole discretion, is less than eighty percent (80%) of operational water system demand, the city manager may declare a "Water Emergency - Red" water emergency implementation stage.

Chapter 25-5, Exhibit C (Amended: November 30, 2011 by Ord. No. 2011-38) states that under "Water Warning – Orange" water emergency implementation stage, target flows to the Santa Fe River may be suspended.

Chapter 25-5, Exhibit D (Amended: November 30, 2011 by Ord. No. 2011-38) states that under "Water Emergency – Red" water emergency implementation stage, target flows to the Santa Fe River shall be suspended.

4.9 Monitoring

The City shall monitor the impacts of providing daily target flows to the river, to determine whether the objectives identified in Section 4.1 are being met. Monitoring will provide the feedback necessary for the flow manager to institute adaptive management as identified in Article 4.11; and/or to amend these Administrative Procedures to ensure that the objectives and purposes of the target flows are being met to the fullest extent possible. City staff will coordinate and collaborate with community volunteers, local non-governmental organizations and other agencies to implement a monitoring program.

4.9.1 Stream flow

The City will continue to monitor stream flow (in cfs) at 15 minute increments at the below Nichols gage and the above St. Francis gage. Each of these gages will be calibrated periodically to assure high quality data.

4.9.2 Wetted Distance

The City, in conjunction with community volunteers and cooperating agencies, shall develop a methodology by which the distance the daily target flows have traveled can be measured.

4.9.3 Future Monitoring

The City shall consider additional river monitoring that will assist in adaptive management and in determining appropriate daily target flows in the future. Potential parameters include:

Soil moisture: to understand the water available for riparian vegetation under varying daily target flows, hydrographs, and climatic conditions;

Ecological health indicators: the presence, location, and characteristic of flora and fauna in the river corridor;

Storm flow peak: to understand if or the how the target flows have altered the timing and magnitude of urban storm runoff;

Water quality: to understand if or the how the target flows have altered the water quality in the river;

Surface water infiltration: to understand the temporal and spatial distribution of stream flow loss;

Surface/ groundwater interaction: to understand the fate of stream flow infiltration, and the contribution, if any, of groundwater to surface water.

4.10 Accounting and Reporting

4.10.1 Flow Accounting

The flow manager, with data provided by the Water Division and flow operator, shall account quarterly for the volume of water released per target year at the below Nichols gage using the assumption that all water passing the gage has either been discharged pursuant to Article 25-13 SFCC 1987, spilled or released. The flow manager shall make adjustments as necessary to manage the target year water allocation. The basis of the volumetric accounting will be the official below Nichols gage record, and shall identify the periods of time during which flow estimates were estimated (missing stream flow data results from frozen equipment, battery failure, equipment vandalism, etc). Interim estimates can be made using the actual daily flow as recorded by the flow operator and reported on the daily water report. Released or spilled water shall be accounted as described in Section 5.

4.10.2 Reporting

The City shall endeavor to keep elected officials, the River Commission, the city manager, the Water Division director and the public informed regarding the activities associated with Article 25-13 SFCC 1987. The reports outlined below identify specific reporting recommendations.

Report on Annual Target and Hydrograph for Upcoming Year

After April 15th, the flow manager will report by email to the River Commission, the Water Division director, Public Utilities Committee and the city manager the target year hydrograph based on the anticipated watershed yield. The report shall include the relevant information on which the anticipated watershed yield was based (e.g., NRCS basin forecasts, snow-to-water equivalent from SNOTEL sites in the upper watershed, climate predictions for the National Weather Service and NOAA). The target year hydrograph will be posted on the City's website.

Annual report

At the end of each year, the flow manager shall prepare reports which describe the previous year's activity relevant to Article 25-13 SFCC 1987. For the previous target year the report shall include the daily actual stream flow data (daily mean and cumulative), the annual volume released, and annual flow, a summary of routine or special activities along the river (e.g., Fishing Derby, River Festival) a description and explanation of deviations from the target hydrograph, observations or recommendations related to adaptive management, and an estimate of the amount of groundwater pumped to accommodate the daily target flows. For the current target year, the

report shall include the annual target quantity and the target hydrograph. The flow manager will submit the report to the River Commission, the Public Utilities Committee, the City Council, and post the report to the City's website.

Periodic Actual Stream Flow Report

The flow operator and Water Division staff will record and track actual daily flow at the below Nichols gage in an Excel-compatible spreadsheet. The flow operator shall send the electronic spreadsheet to the flow manager approximately monthly.

Daily Water Report

The flow operator and Water Division staff will report actual daily flow at the below Nichols gage on the Daily Water Report, which is emailed to any interested party and posted on the City's website.

4.11 Adaptive Management

4.11.1 Adaptive Management Goals

The goal of Article 25-13 SFCC 1987 is to provide for flows in the river, while providing the City with flexibility in managing both the water supply system and river flows. The target hydrograph, dry year hydrographs and critically dry year hydrograph are designed to match Article 25-13, and these Administrative Procedures, that the flows to the river be managed in a manner to optimize the benefits of the flows to meet the objectives. Hence, these procedures allow for and encourage adaptive management, provided that the annual target is not impacted.

4.11.2 Adaptive Management Conditions and Considerations

The following conditions and considerations may influence or provide cause for adaptive management:

- a. High flows or flood risk
- b. Timing, intensity and/or scale of monsoon events
- c. Periods of exceptionally dry weather
- d. Scheduled community events
- e. Maintenance/improvement work within the river channel or on water supply infrastructure
- f. Maintaining daily target flows equal or below inflow into McClure Reservoir
- g. Feedback from monitoring data
- h. Change in snowpack or watershed yield conditions (e.g., late snowfall) after the beginning of the flow year

5. Annual Fishing Derby

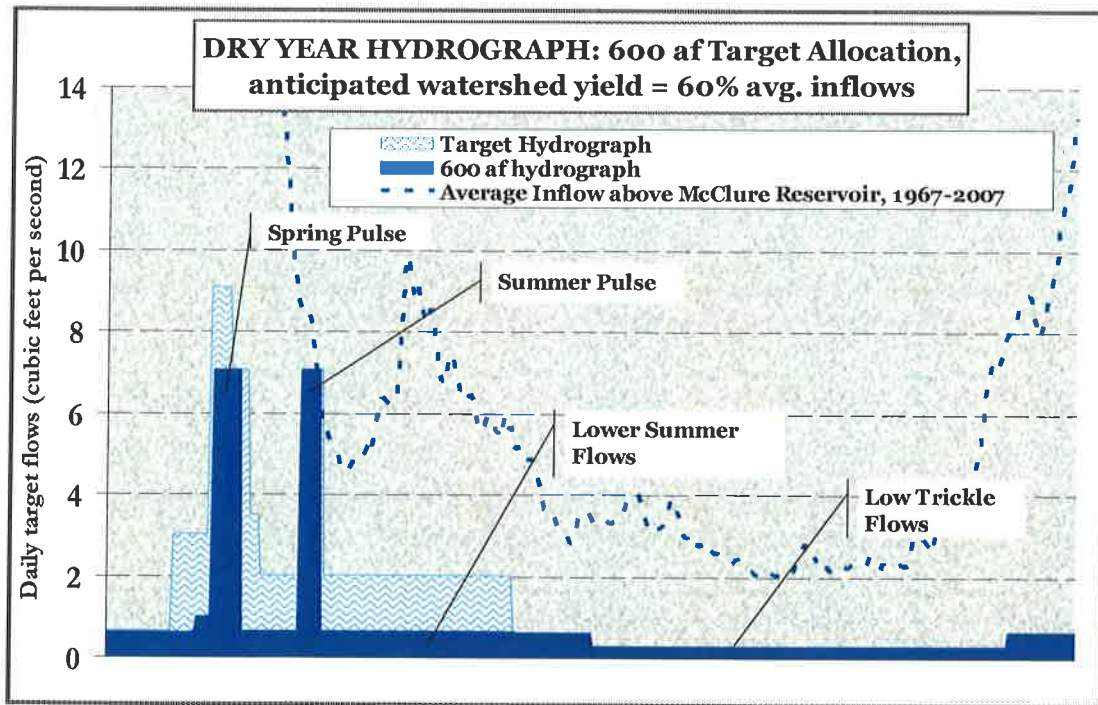
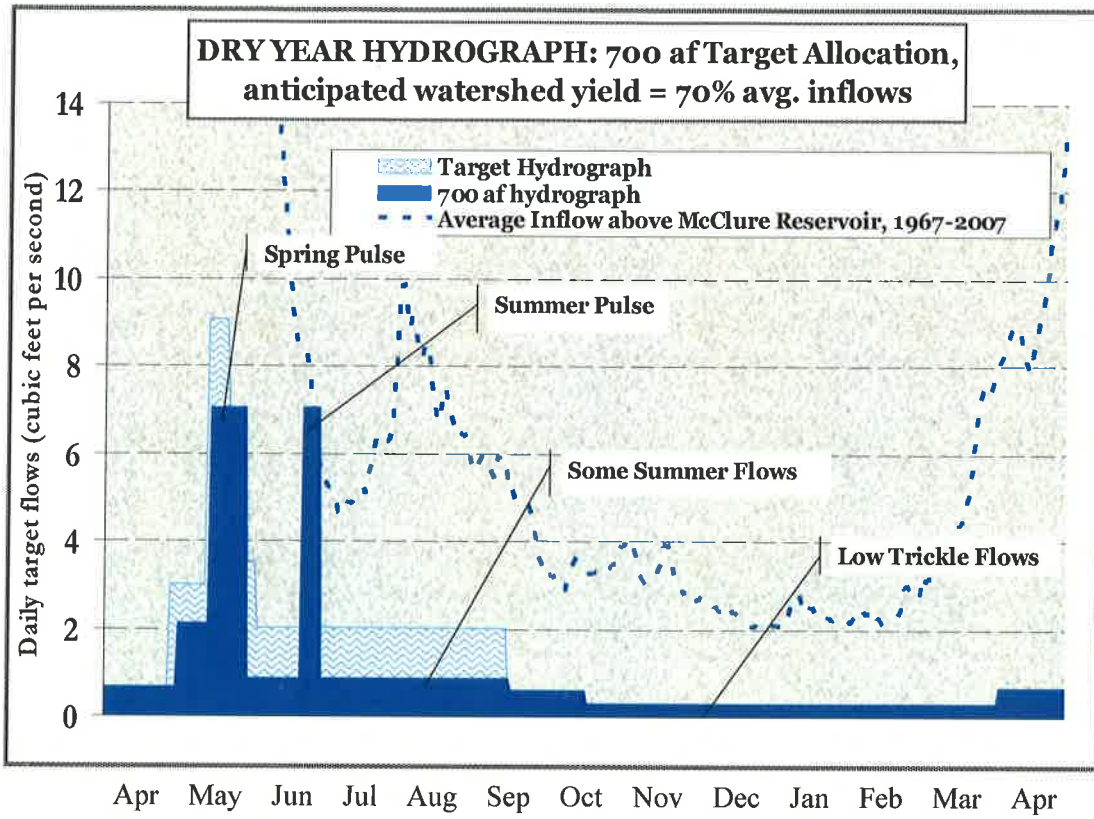
The City of Santa Fe's Annual Fishing Derby takes place each year on the first Saturday in June. The Fishing Derby provides opportunities for children and families to join with neighbors to experience a fun and engaging day by the river, to learn about the Santa Fe River and riparian ecology, and to learn fishing skills.

In dry years when the anticipated watershed yield is less than 50%, or, if for other climatic or hydrologic reasons daily target flows adequate for the Fishing Derby cannot be met, the Fishing Derby will be suspended.

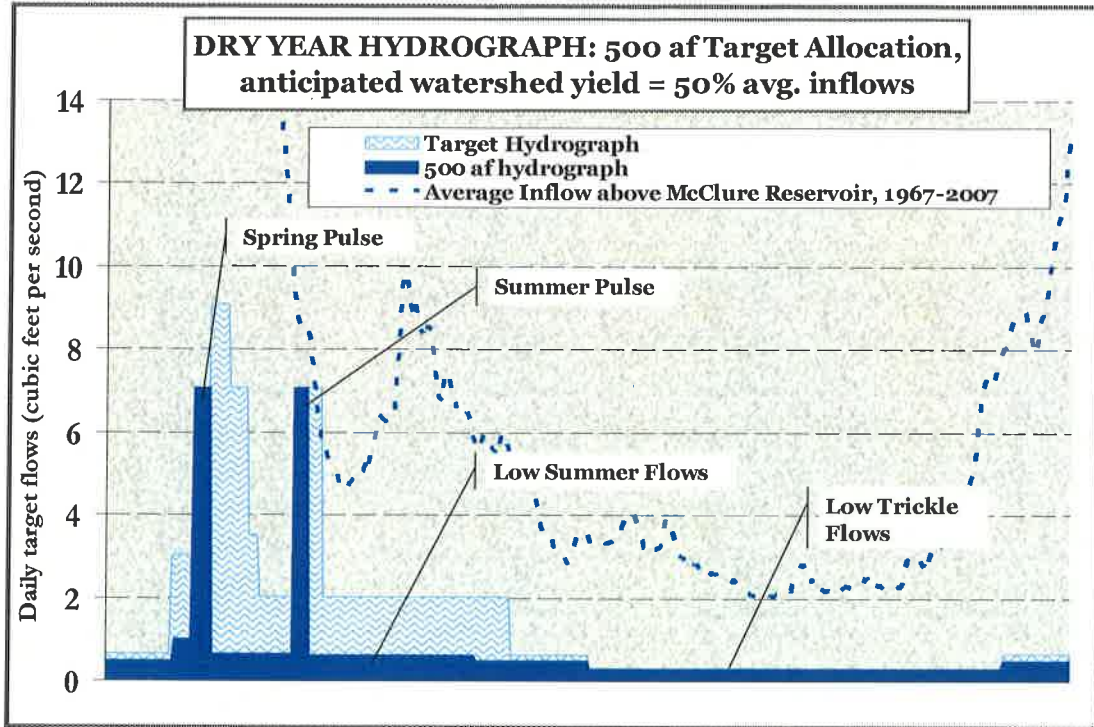
6. Miscellaneous Provisions

- 6.1 **Amendments.** These Administrative Procedures may only be amended pursuant to a duly adopted resolution of the Governing Body.
- 6.2 **Severability.** In the event that a court of competent jurisdiction shall determine that any provision these Procedures are invalid, unlawful or unenforceable, the remainder of these Administrative Procedures shall remain in full force and effect.

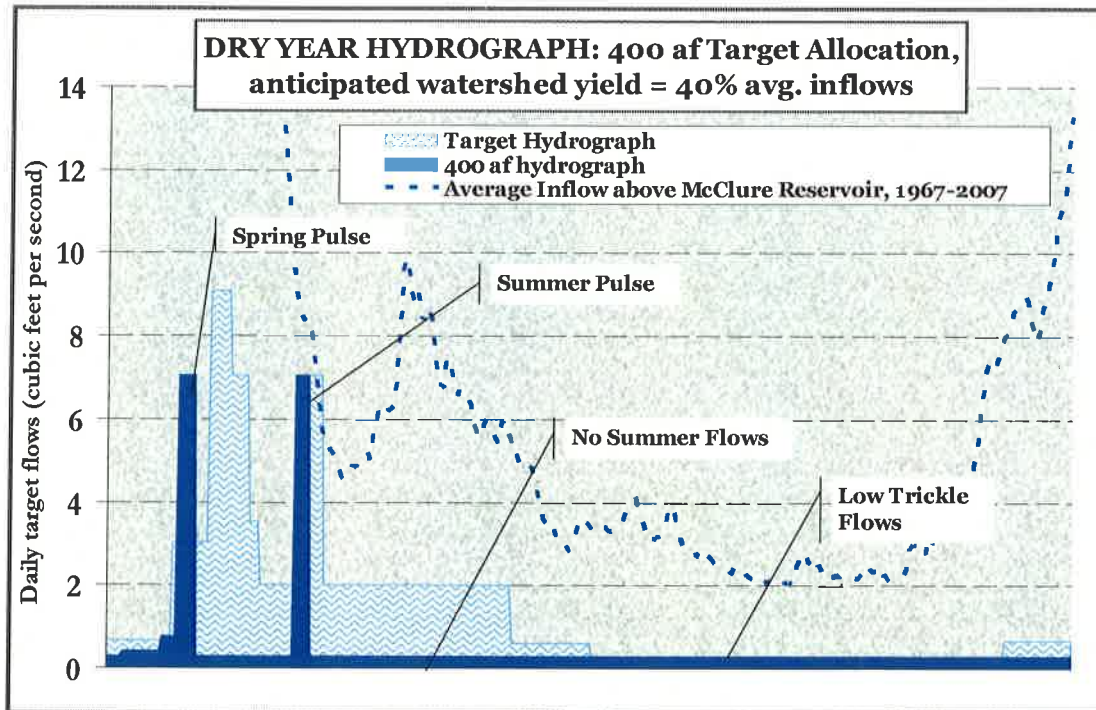
Appendix A
Dry Year Hydrographs



Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr



Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr



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Supreme Court reinstates Trump-era water rule, for now

by: JESSICA GRESKO, Associated Press

Posted: Apr 6, 2022 / 07:29 AM MDT

Updated: Apr 6, 2022 / 09:53 AM MDT

WASHINGTON (AP) — The Supreme Court on Wednesday reinstated for now a Trump-era rule that curtails the power of states and Native American tribes to block pipelines and other energy projects that can pollute rivers, streams and other waterways.

In a decision that split the court 5-4, the justices agreed to halt a lower court judge's order throwing out the rule. The high court's action does not interfere with the Biden administration's plan to rewrite the rule. Work on a revision has begun, but the administration has said a final rule is not expected until the spring of 2023. The Trump-era rule will remain in effect in the meantime.

The court's three liberal justices and Chief Justice John Roberts dissented. The court's other conservative justices, including three nominated by President Donald Trump, voted to reinstate the rule.

Writing for the dissenters, Justice Elena Kagan said the group of states and industry associations that had asked for the lower court's ruling to be put on hold had not shown the extraordinary circumstances necessary to grant that request.

Kagan said the group had failed to demonstrate their harm if the judge's decision were left in place. She said the group had not identified a "single project that a State has obstructed" in the months since the judge's decision and had twice delayed making a request, indicating it was not urgent.

Kagan said the court's majority had gone "astray" in granting the emergency petition and was misusing the process for dealing with such requests. That process is sometimes called the court's "shadow docket" because the court provides a decision quickly without the full briefing and argument. The liberal justices have recently been critical of its use.

As is typical, the justices in the majority did not explain their reasoning.

Kagan wrote that her colleagues' decision "renders the Court's emergency docket not for emergencies at all."

The Biden administration had told the justices in a court filing that it agreed that the U.S. District Court Judge William Alsup lacked the authority to throw out the rule without first determining that it was invalid. But the administration had urged the court not to reinstate the rule, saying that in the months since the Alsup's ruling, officials have adapted to the change, reverting to regulations in place for decades. Another change would "cause substantial disruption and disserve the public interest," the administration said.

Alsup was nominated to the bench by President Bill Clinton.

The section of federal law at issue in the case is Section 401 of the Clean Water Act. For decades, it had been the rule that a federal agency could not issue a license or permit to conduct any activity that could result in any discharge into navigable waters unless the affected state or tribe certified that the discharge was complied with the Clean Water Act and state law, or waived certification.

The Trump administration in 2020 curtailed that review power after complaints from Republicans in Congress and the fossil fuel industry that state officials had used the permitting process to stop new energy projects. The Trump administration said its actions would advance then-President Donald Trump's goal to fast-track energy projects such as oil and natural gas pipelines.

States, Native American Tribes and environmental groups sued. Several mostly Republican-led states, a national trade association representing the oil and gas industry and others have intervened in the case to defend the Trump-era rule. The states involved in the case are: Arkansas, Louisiana, Mississippi, Missouri, Montana, West Virginia, Wyoming and Texas.