



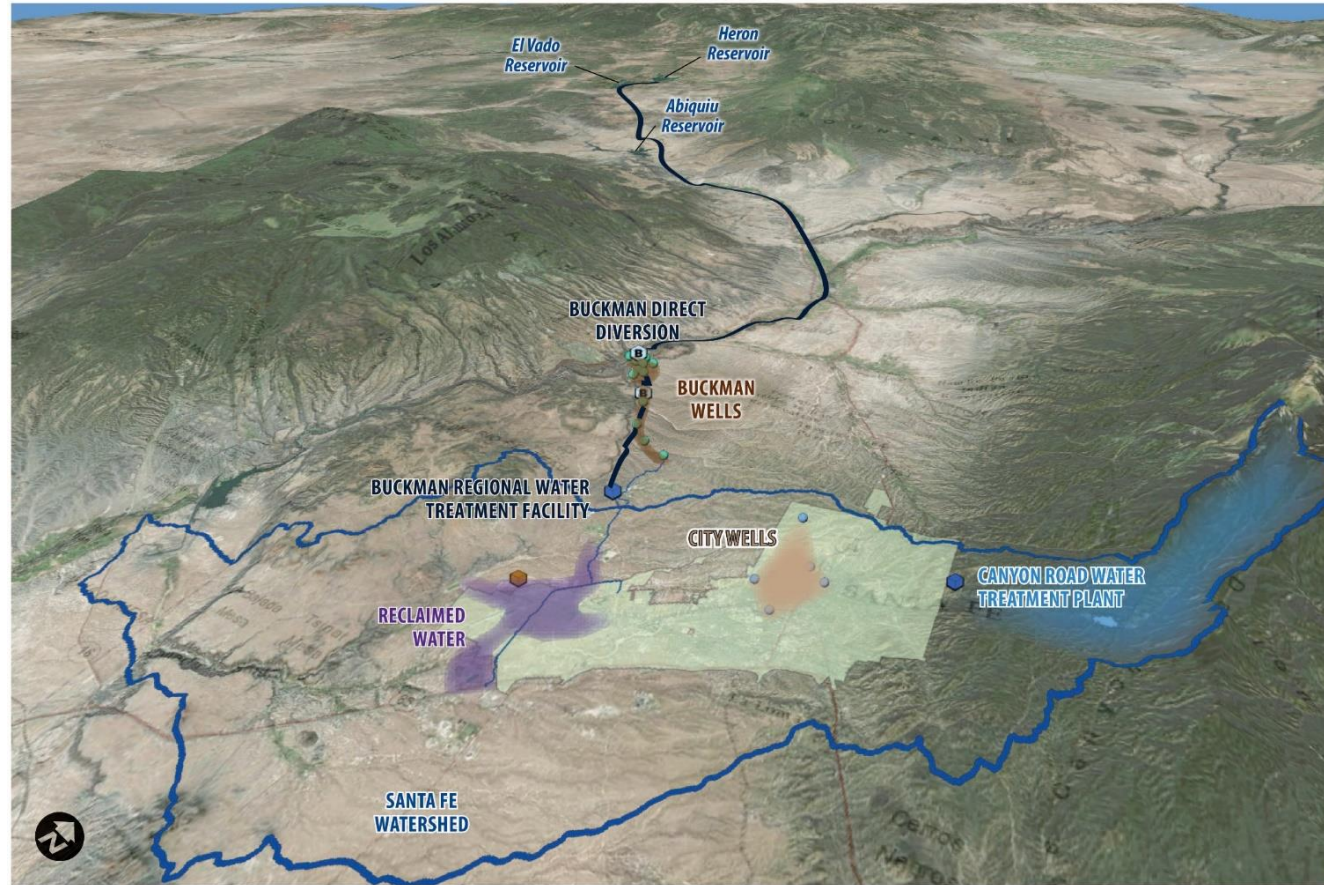
# City of Santa Fe Water

# 2020 Recap – 2021 Outlook

April, 2021

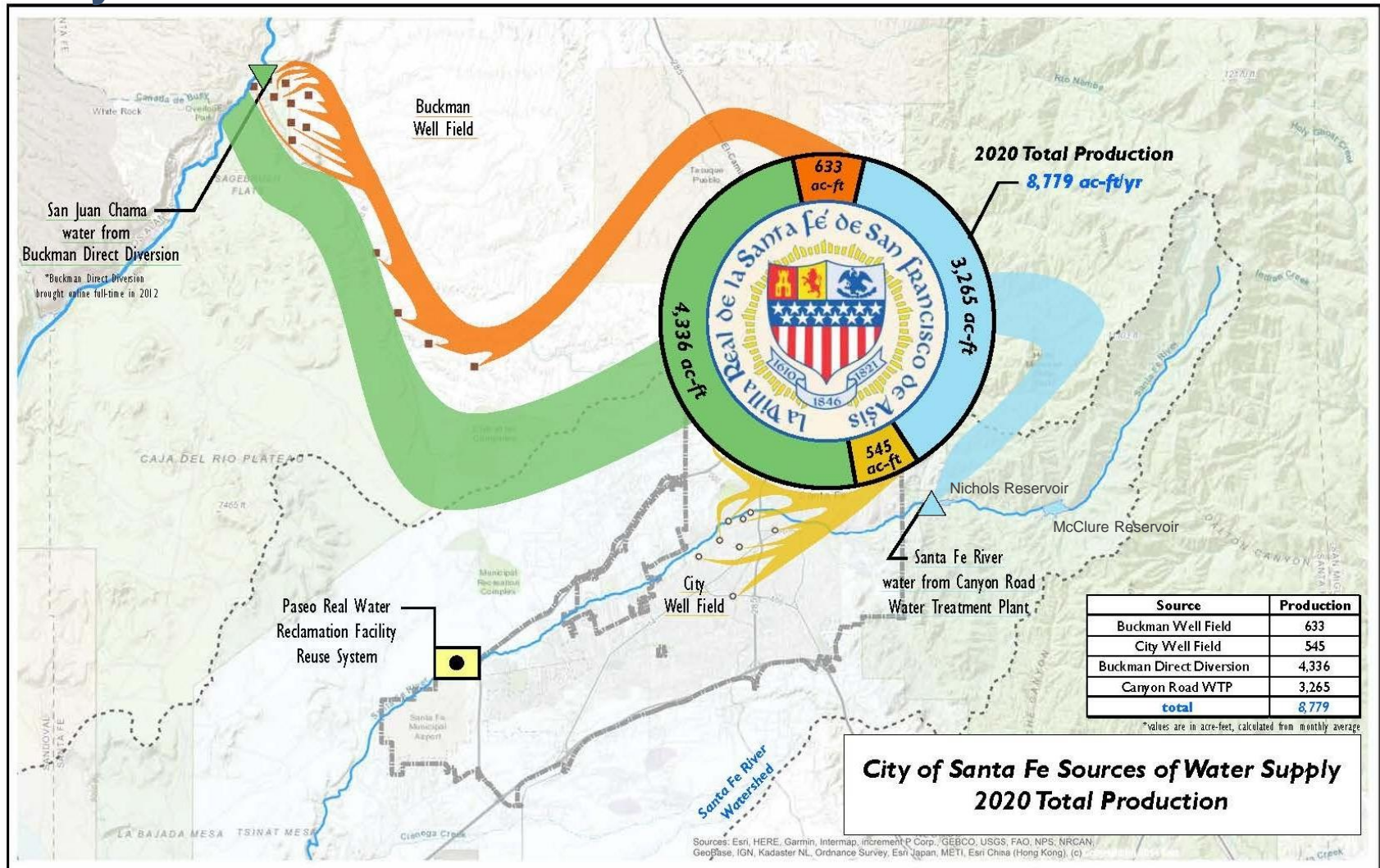
# What's up With Water Outline

- System Overview (4 slides)
- 2020 Recap & 2021 Outlook (8 slides)
- What the drought means to us (7 slides)
  - Conservation
  - BDD
  - Canyon Road Water Treatment Plant
  - City Wells
  - Buckman Wells
  - Combined GW Capacity
- Water and Growth (3 slides)
- Water Resources Planning (3 slides)
- San Juan Chama Return Flow Project (5 slides)



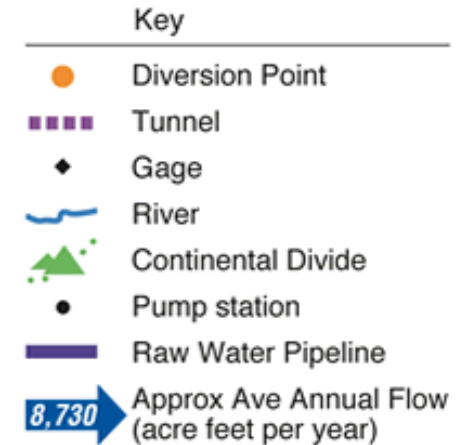
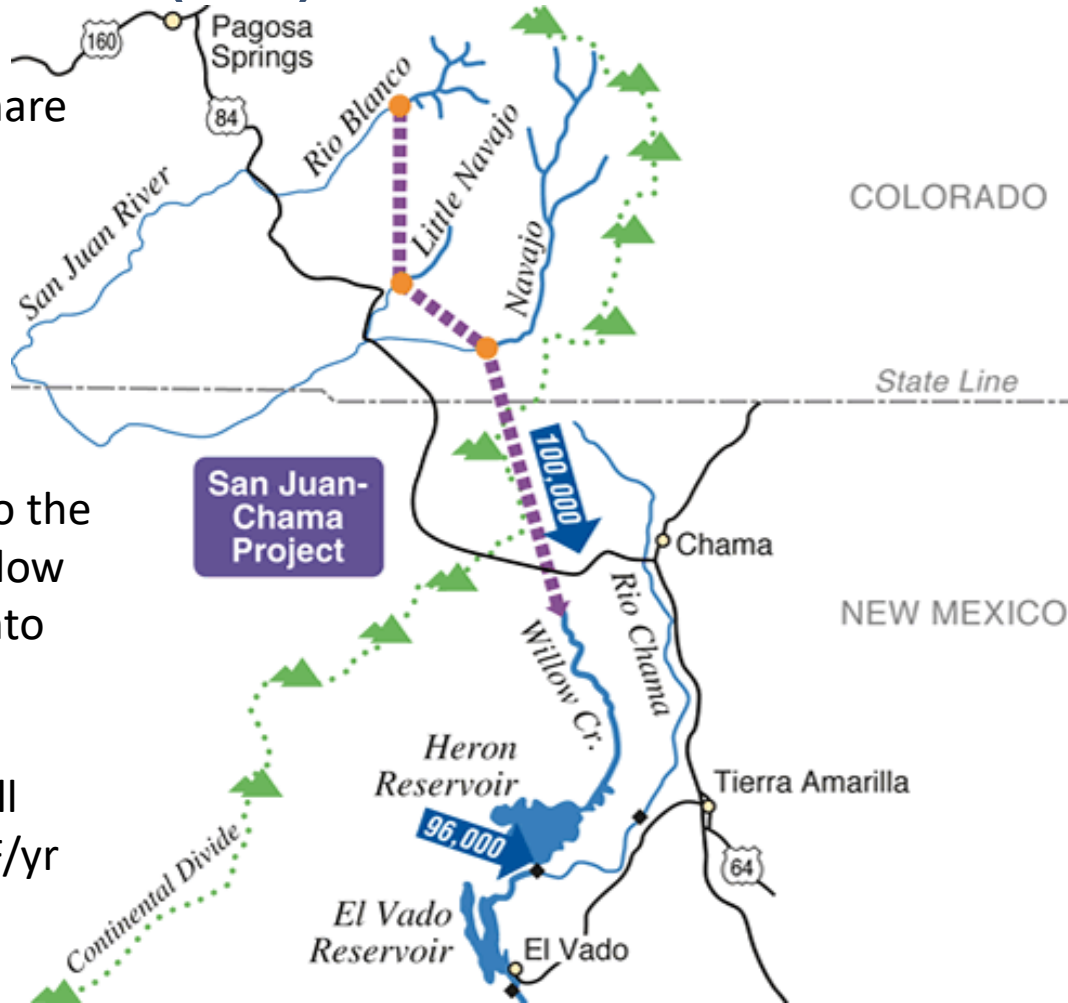


# 2020 System Production Overview

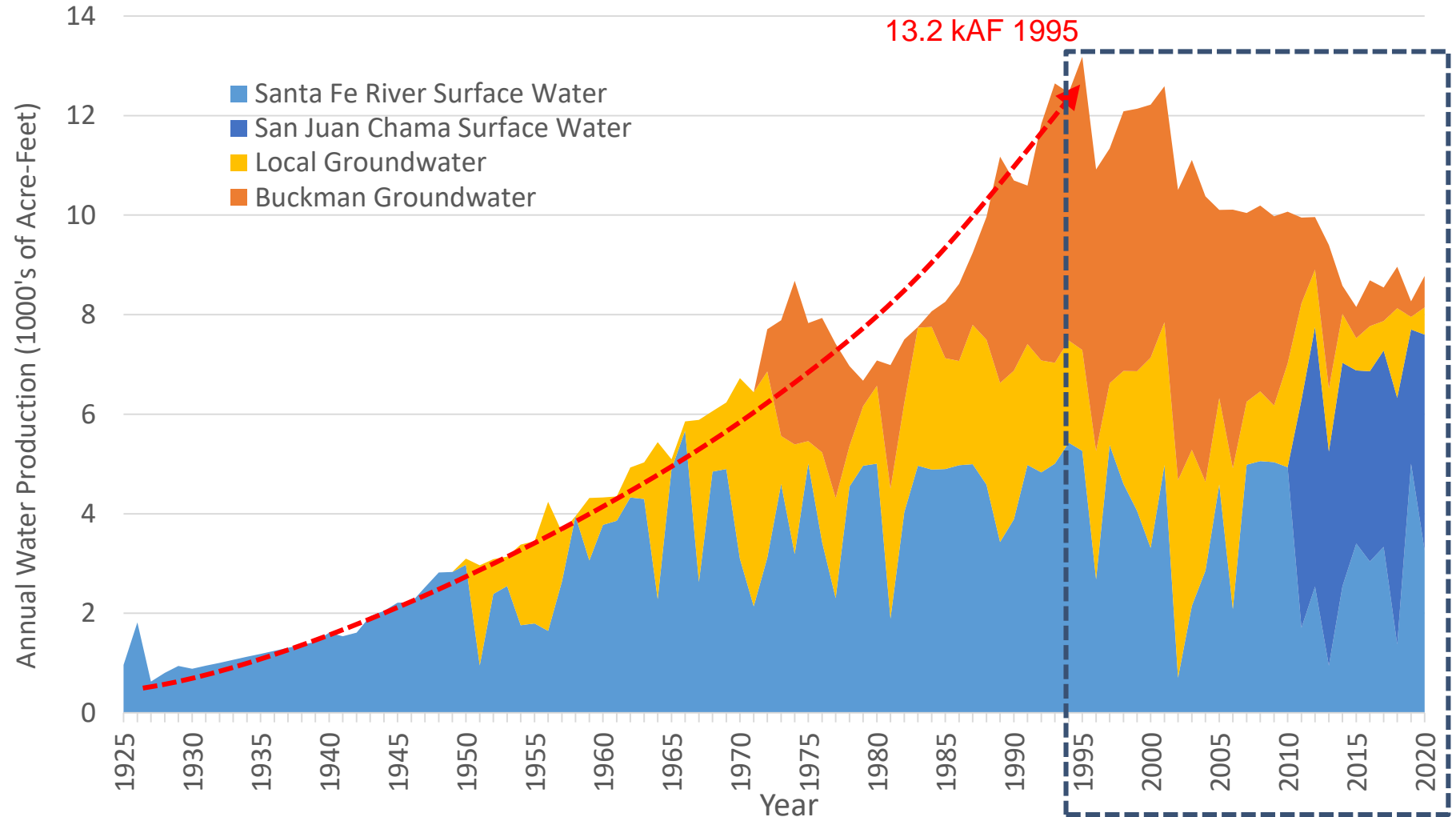


# San Juan Chama (SJC) Water

- Portion of NM's share of Colorado River water under the Upper Colorado River Compact
- Diversion from three tributaries to the San Juan, gravity flow through tunnels into Chama system.
- City of Santa Fe full allocation 5230 AF/yr



# System Production Through Time



# System production 1995-2020

- Santa Fe River Surface Water
- San Juan Chama Surface Water
- Local Groundwater
- Buckman Groundwater

## Conservation:

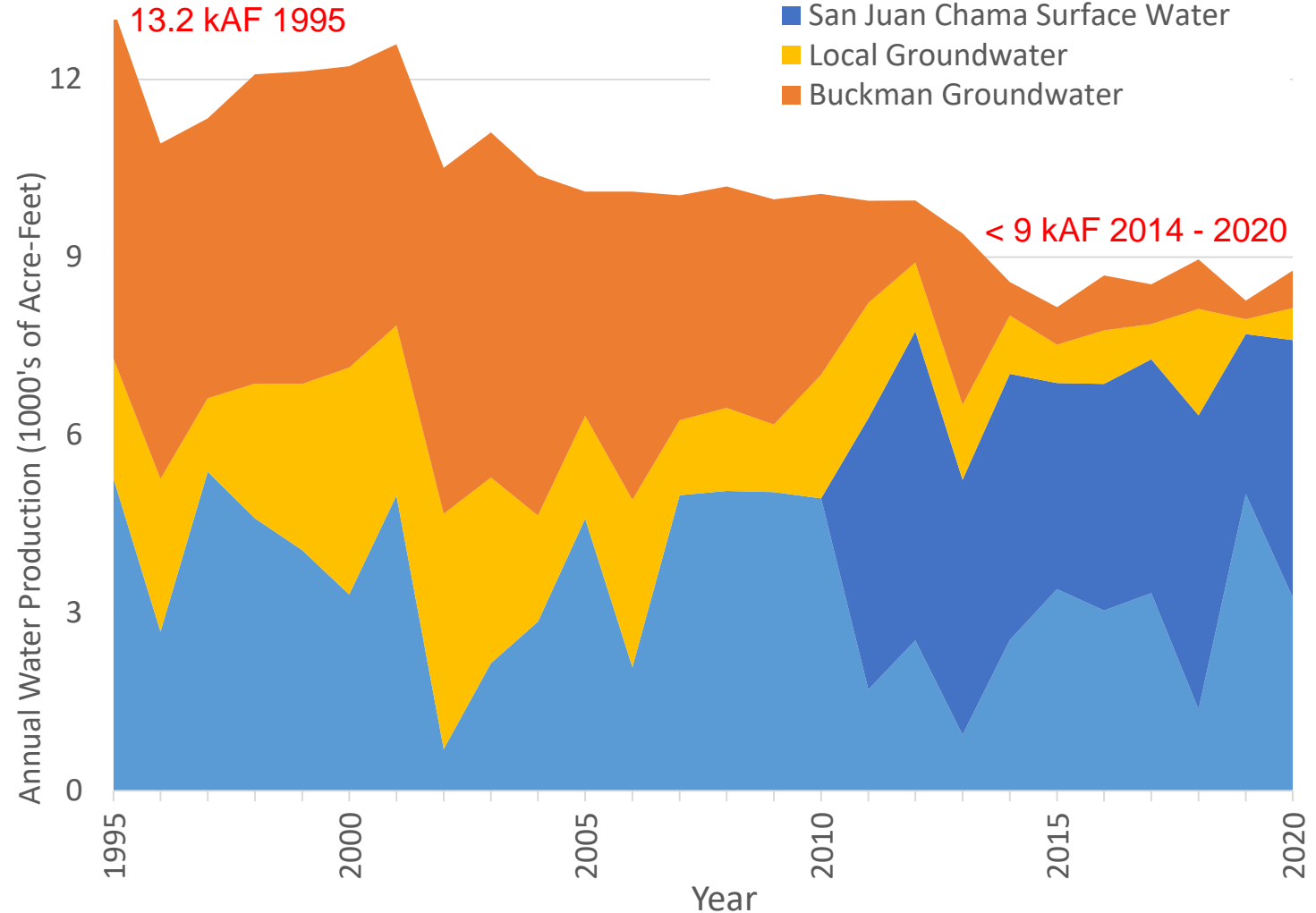
- 13.2 kAF in 1995  
(68,000 served)
- <9 kAF since 2014k  
(> 80,000 served)

## Surface Water Use

- 78% since BDD came  
online in 2011

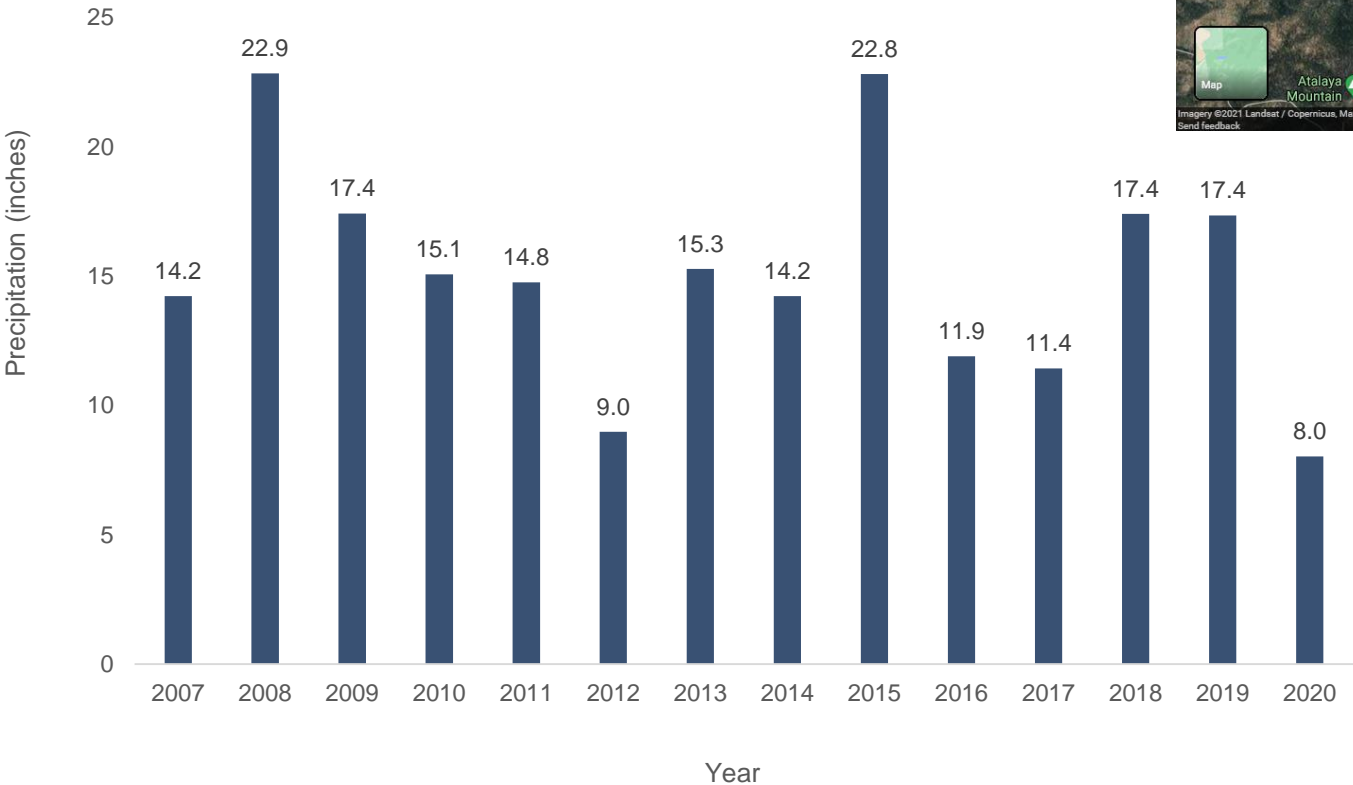
## Well Fields Resting

- Ready for use when needed



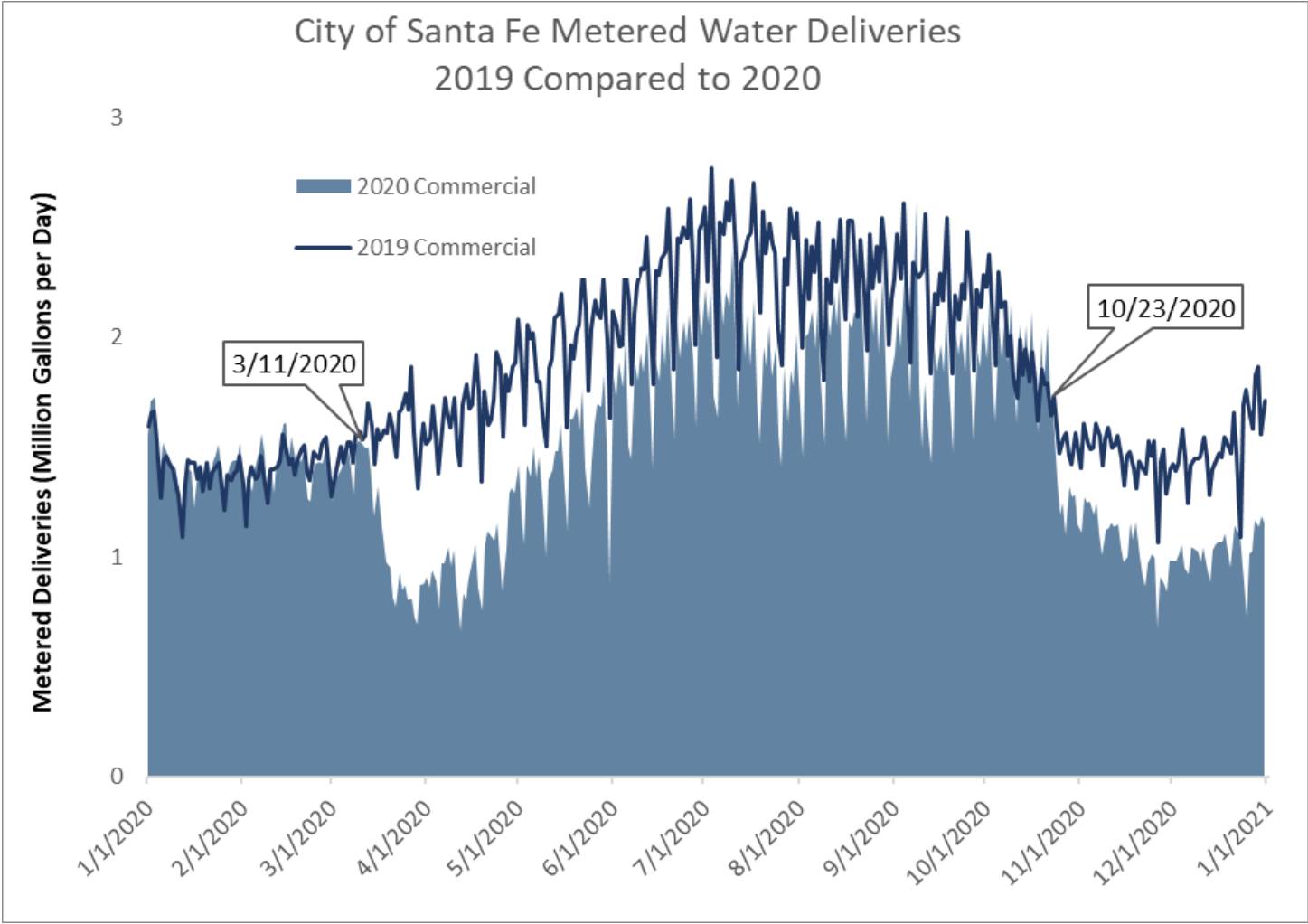
# 2020 Recap

Santa Fe Watershed Annual Precipitation





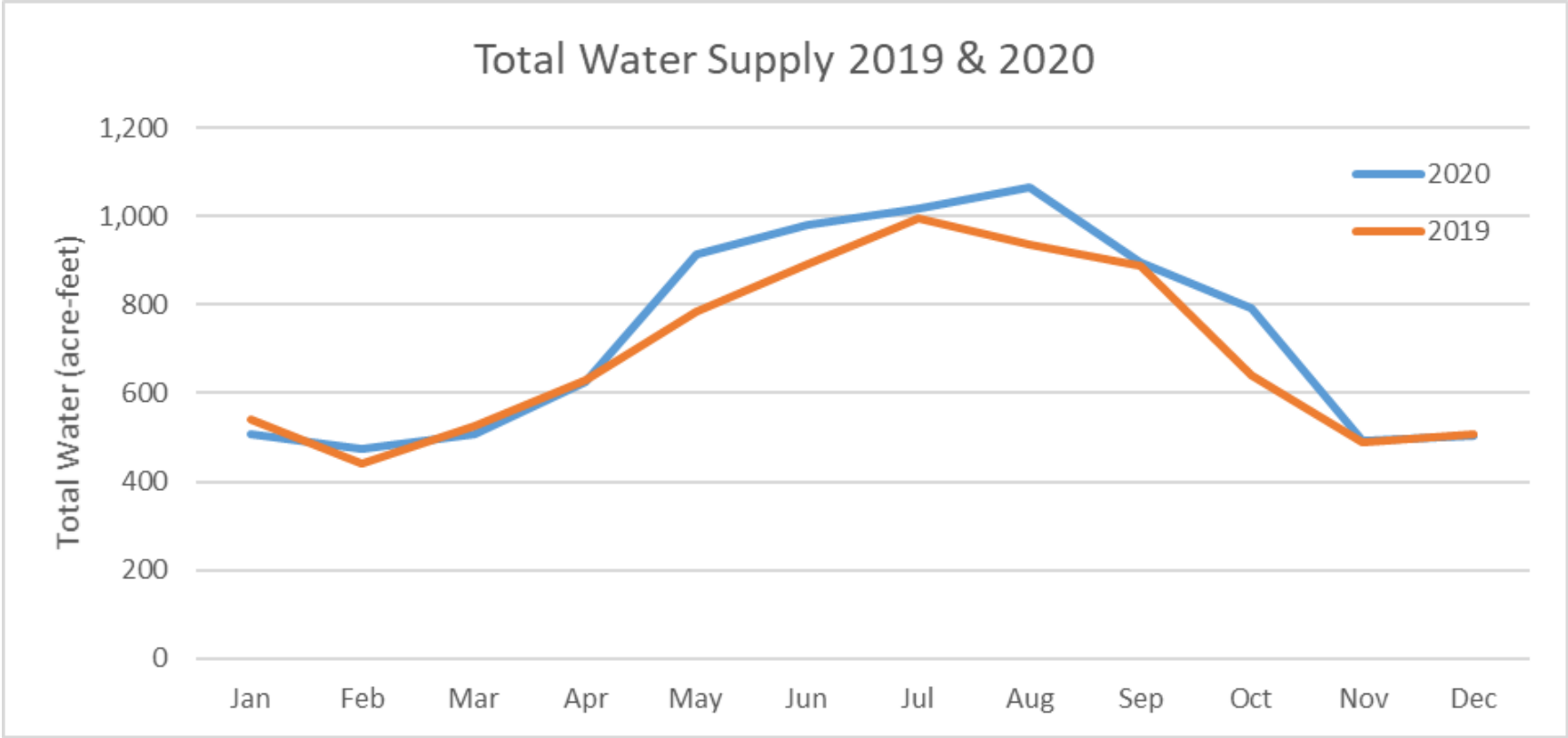
# 2020 Recap: COVID Impact





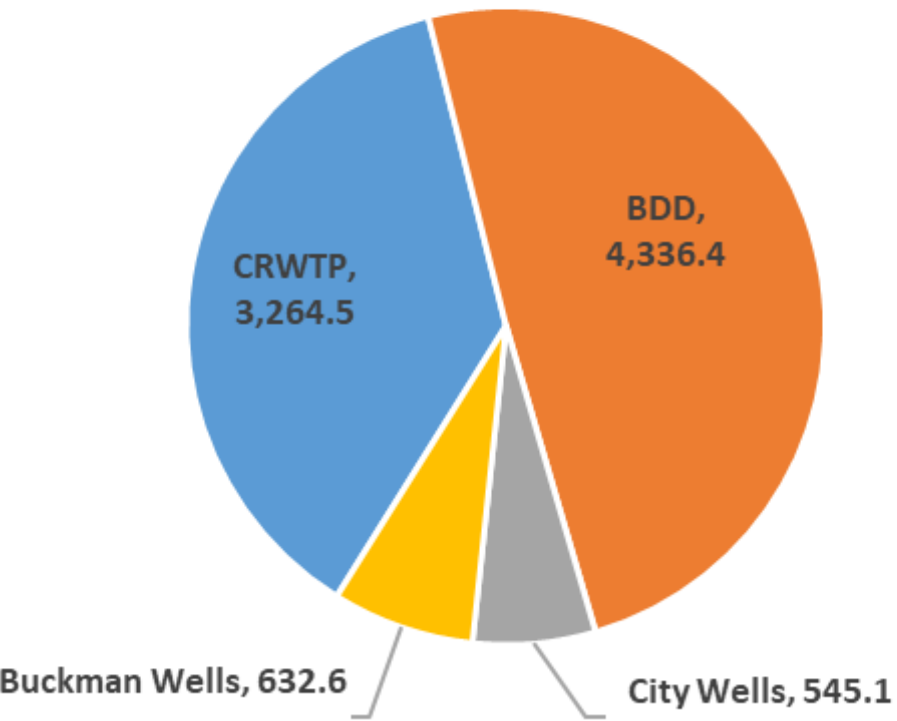
# 2020 Recap: 2020 Total Use Compared to 2019

Decreased commercial use was more than offset by increases in residential use which was mostly a result of the hotter drier weather with some possible impact from people spending more time at home.



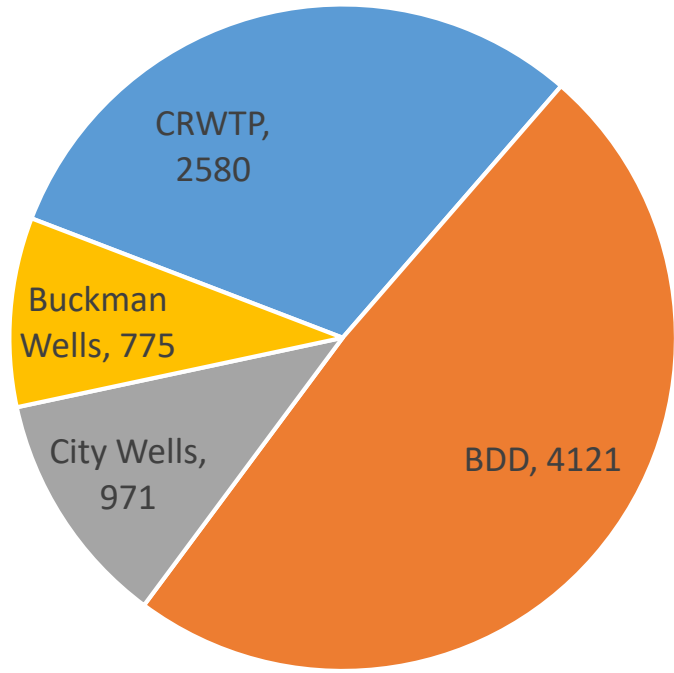
# 2020 Recap

2020 Water Production by Source



# 2021 Outlook

2021 Projected Water Production (AF)

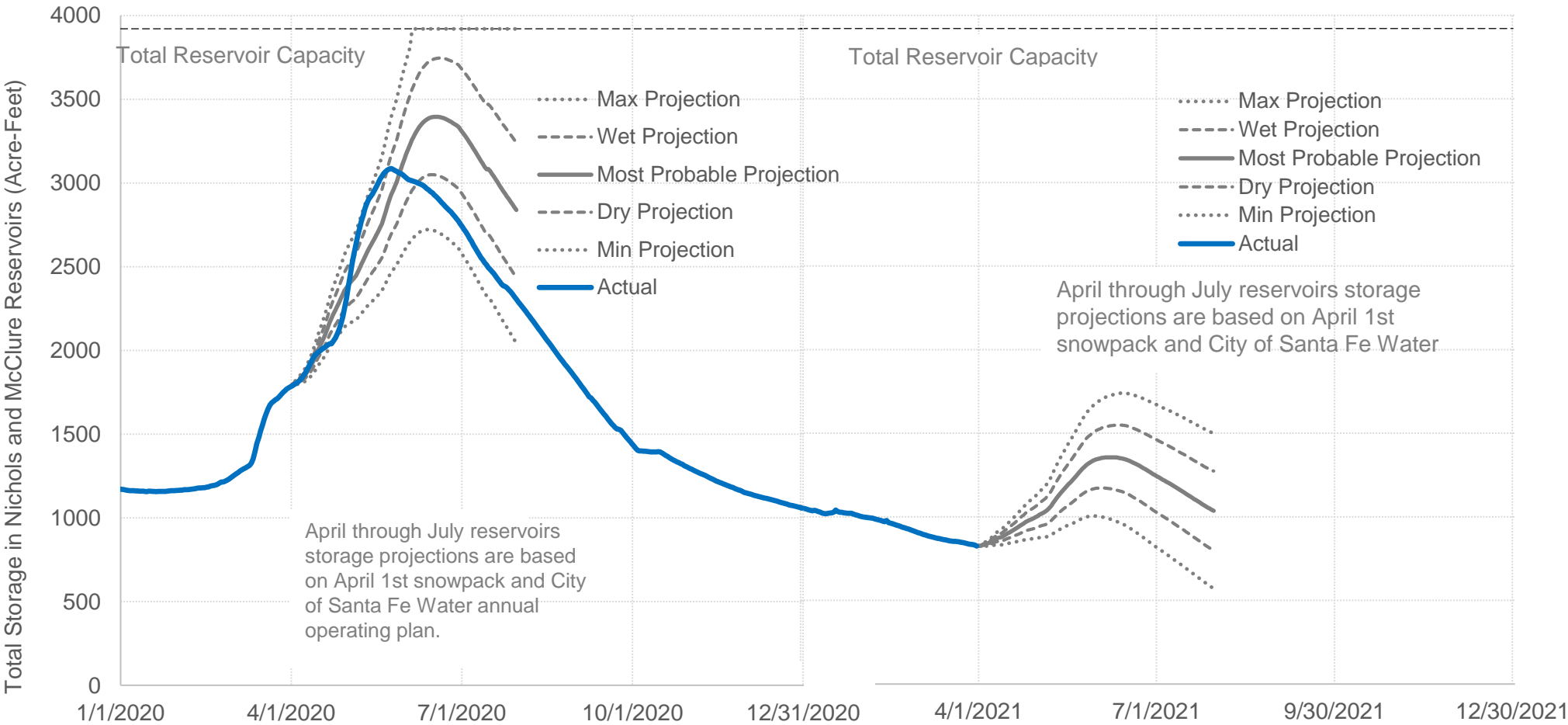


# 2020 Recap

## Santa Fe River Reservoir Storage 2020

# 2021 Outlook

## Santa Fe River Reservoir Storage 2021



# Other 2020 Activity of Note

- Water Quality
  - All water delivered to the system met all U.S. Environmental Protection Agency (EPA) and State water quality limits. A Consumer Confidence Report detailing specifics will be in May or June bills
- Sustainability
  - City of Santa Fe Water is working to meet water and energy related goals in the City's 2019 Sustainability Plan.
- Long Range Water Resources Planning
  - City of Santa Fe Water initiated a long range water resources planning process in 2020. This process will last an additional 4 years and involve regular opportunities for public input.
- Strategic Planning
  - City of Santa Fe Water's mission, vision, and values were revisited and updated.
  - City of Santa Fe Water's mission is to provide a safe, reliable, and resilient water supply to meet Santa Fe's needs.
  - 3 year goals supporting the mission, vision, and values were established
- Annual Report
  - Additional information on all of these topics available in the 2020 City of Santa Fe Water Annual Report. [https://www.santafenm.gov/water\\_resources\\_1](https://www.santafenm.gov/water_resources_1)

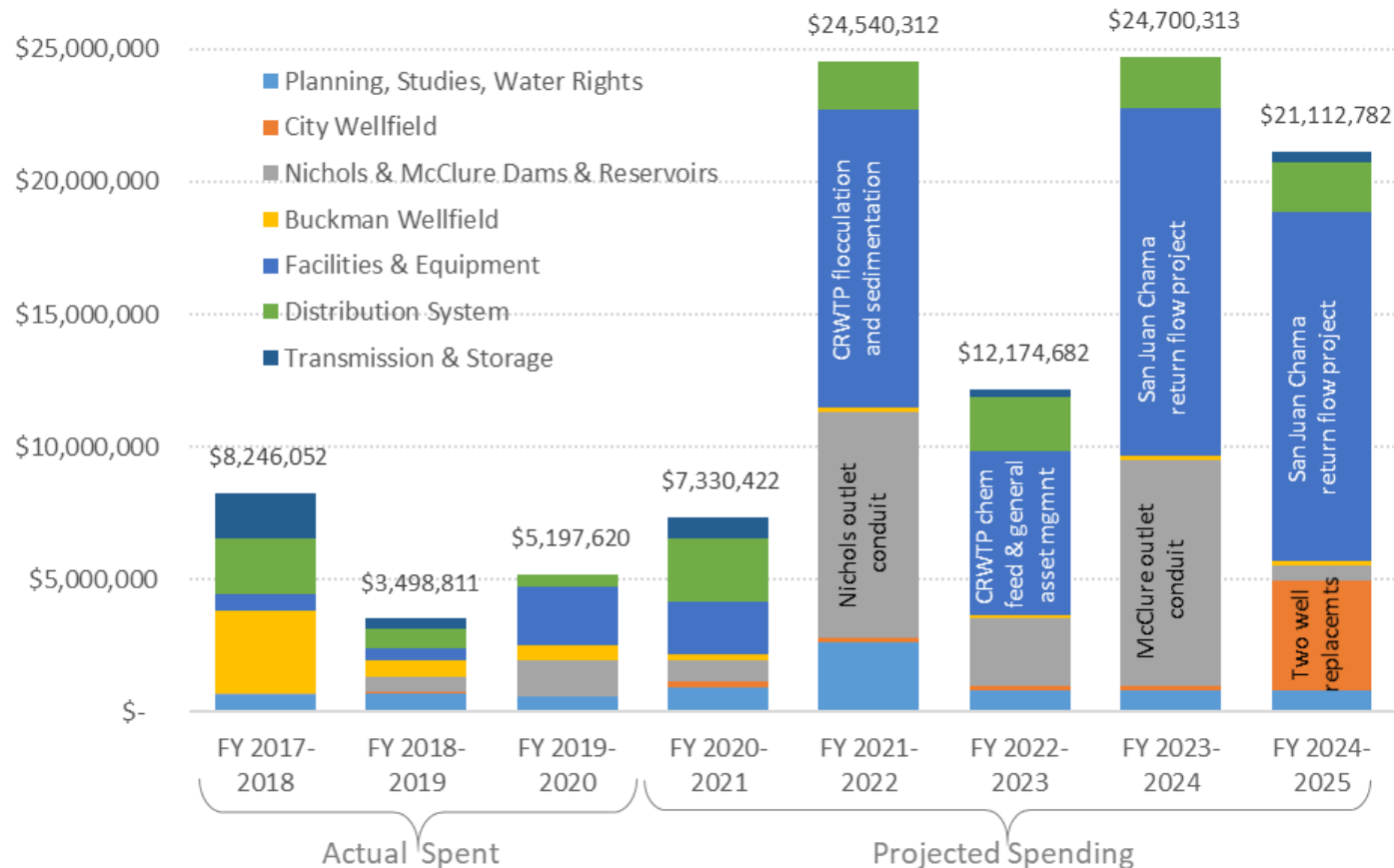




# Projected Capital Spending

Significant investment in dam repairs, CRWTP, and the San Juan Chama Return Flow Project projected for the next 4 years

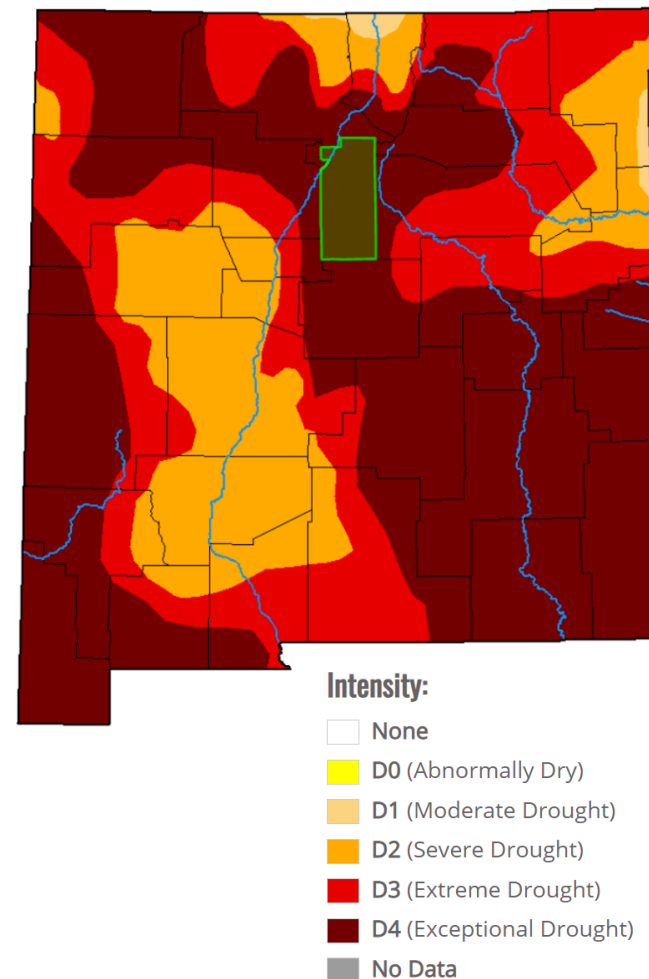
City of Santa Fe Water Actual & Projected Capital Spending



- Likely will bond the San Juan Chama return flow project.
- Hoping to pay for the other large projects out of available cash.
- Financial analysis is ongoing to see if and when this investment may impact rates

# What does the drought mean for City of Santa Fe Water?

- In this period of drought City of Santa Fe Water we will be strictly enforcing our existing water use restrictions.  
[https://www.santafenm.gov/water\\_use\\_restrictions](https://www.santafenm.gov/water_use_restrictions)
- Resources to help City residents and businesses use water more efficiently are available at [savewatersantafe.com](http://savewatersantafe.com).
- The City and County will be working together on joint drought messaging from May through October.
- Twenty five years of successful conservation and four separate supplies have put City of Santa Fe Water into a sustainable water resources position in which river water is used preferentially and wells are rested for periods of drought.
- Water levels in our wellfields have been rising for the past decade and are ready to meet some or all of our demand this year at a moment's notice, should we need them.
- Our well and system capacity is sufficient to meet total demand with wells only for days, to years if necessary.



# 2021 Conservation Activities

- Messaging on all media platforms during high demand season
- Increased enforcement
- Increased work on leaks
- Development of Santa Fe specific “drought index”
- Launch of new outdoor conservation program
- Two neighborhood scale water conservation pilots
- Collaboration on the Bees, Trees and Water campaign
- Expansion of commercial conservation programs
- Joint work with the County:
  - Focus on ways the City and County can work on water conservation together
  - Survey of all water conservation ordinances that need to be updated
  - Collaboration on education program and outdoor sector resources
  - Initiate work on a joint drought management plan
- Education “backpack” with information on drought and city infrastructure
- Support of Facilities department in water retrofit project that will save almost 7 acre-feet of water this year.
- Completion of rebate for hotel with 90 toilets being replaced with more efficient fixtures
- Continued incentives for toilets, washing machines, dishwashers, rainwater harvesting and outdoor irrigation
- Next Generation Water Summit in June to provide community education efforts on reducing outdoor demand

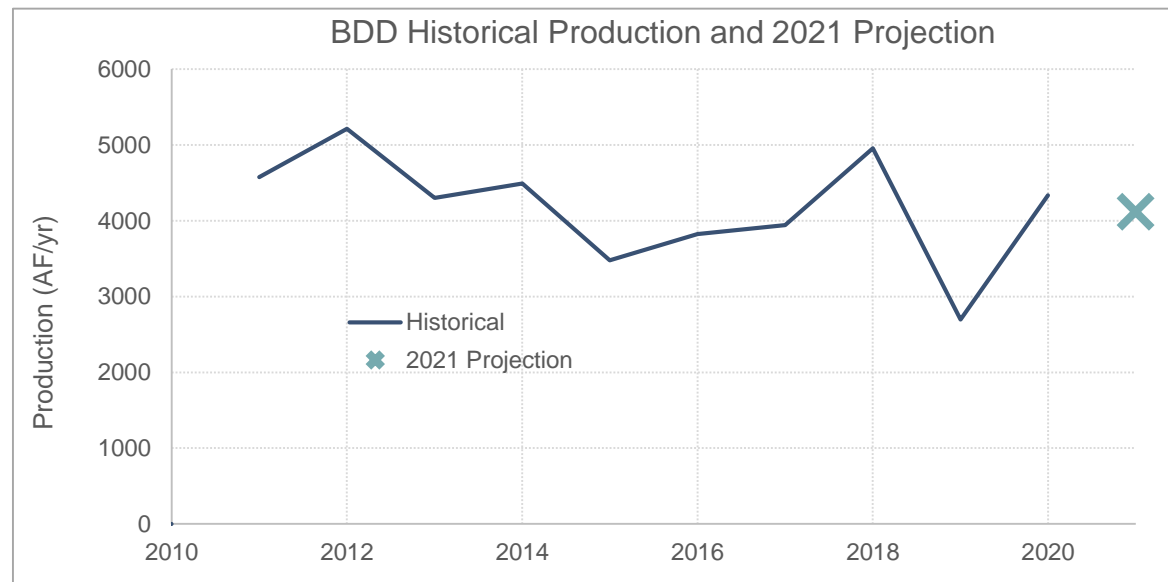
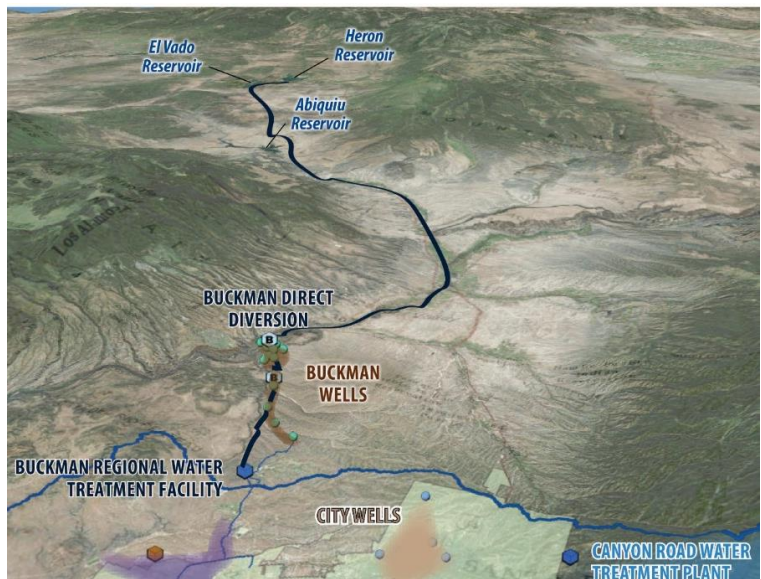


Artwork by Dahlia Roach age 8

# Buckman Direct Diversion (BDD) 2021 Outlook

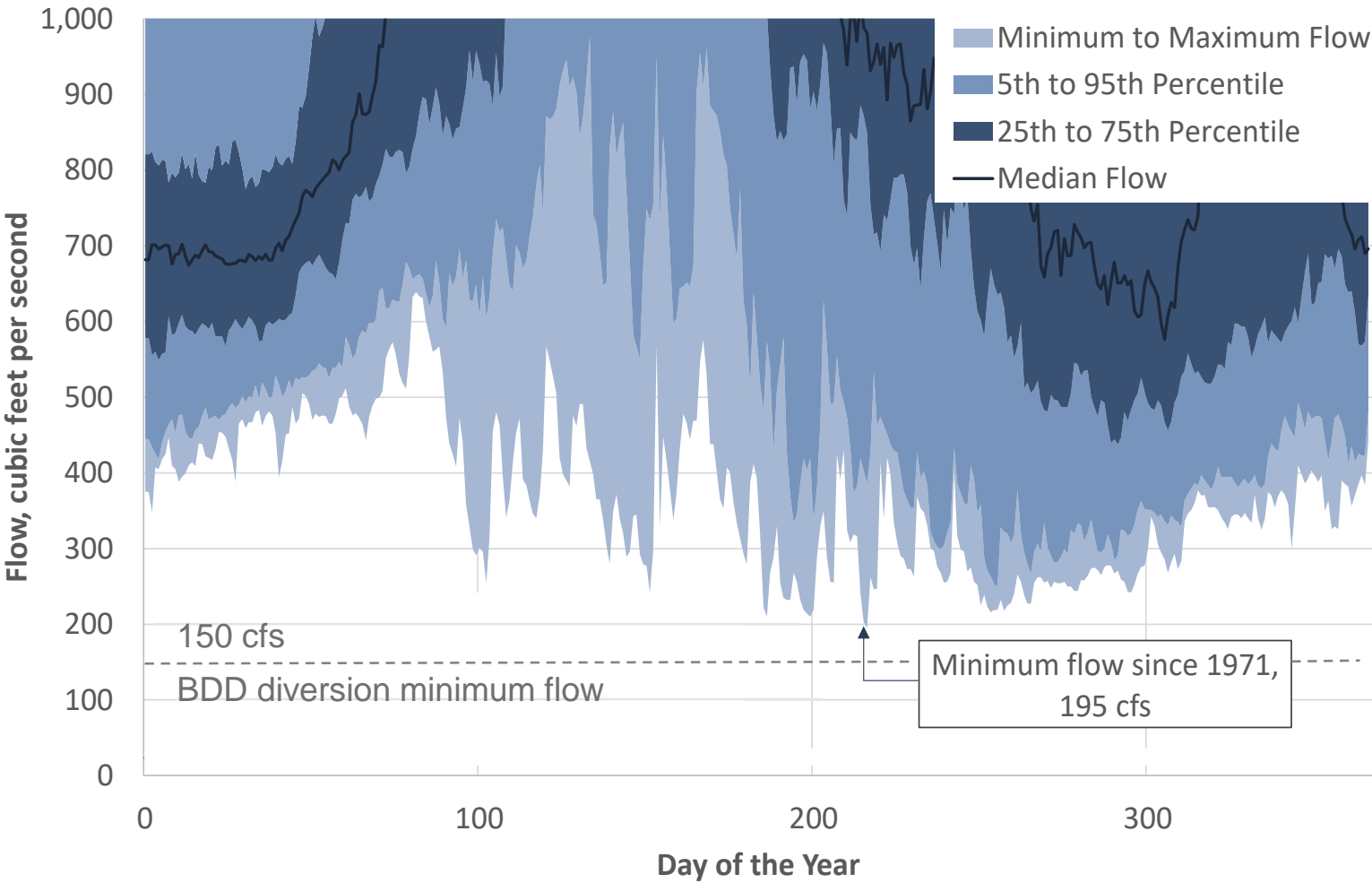
5407 acre-feet target production for 2021

- As of April 5<sup>th</sup> City of Santa Fe Water had 13,004 AF of San Juan Chama water stored in reservoirs.
- The ability of BDD to access this water can be limited by conditions on the Rio Grande at the diversion
  - water quality (ash in the river) which shut down operations for ~21 days in July and August of 2011 after the Las Conchas Fire
  - water quantity if flows in the Rio Grande at the diversion go below 150 cubic feet per second (has not happened since 1964)





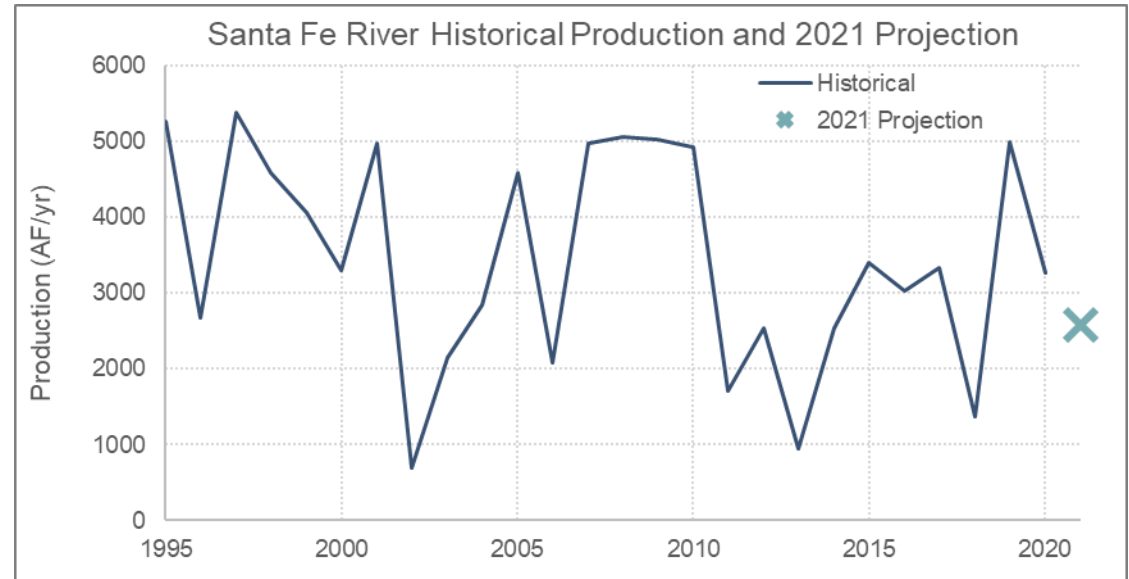
# Rio Grande at Otowi Gage since 1971



# Canyon Road Water Treatment Plant (CRWTP) 2021 Outlook

2580 acre-feet target production for 2021

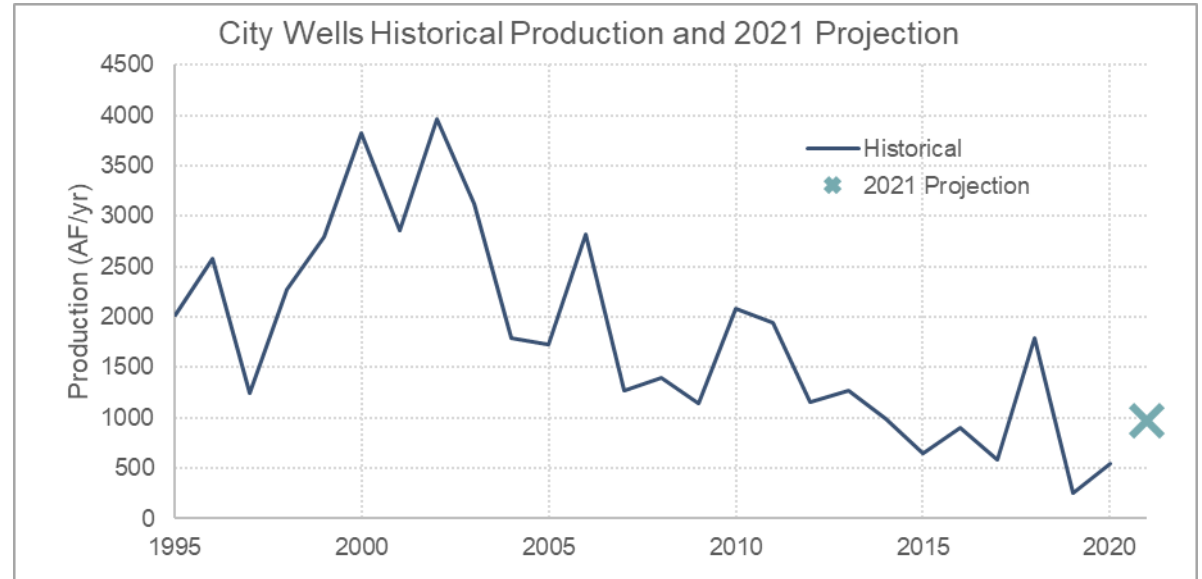
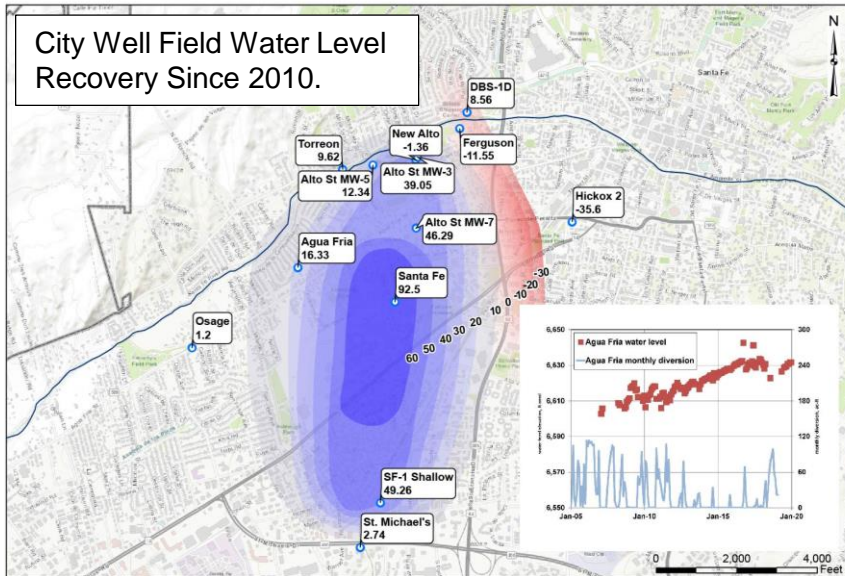
- Nichols Dam slated for repair starting Fall 2021
- Nichols Reservoir needs to be empty for those repairs
- CRWTP slated for upgrades at the same time and will be offline from September 2021 through spring 2022
- McClure Reservoir will be nearly empty (5 – 10%) by September to maximize storage available to capture 2021-2022 runoff



# City Well Field 2021 Outlook

971 acre-feet target production for 2021

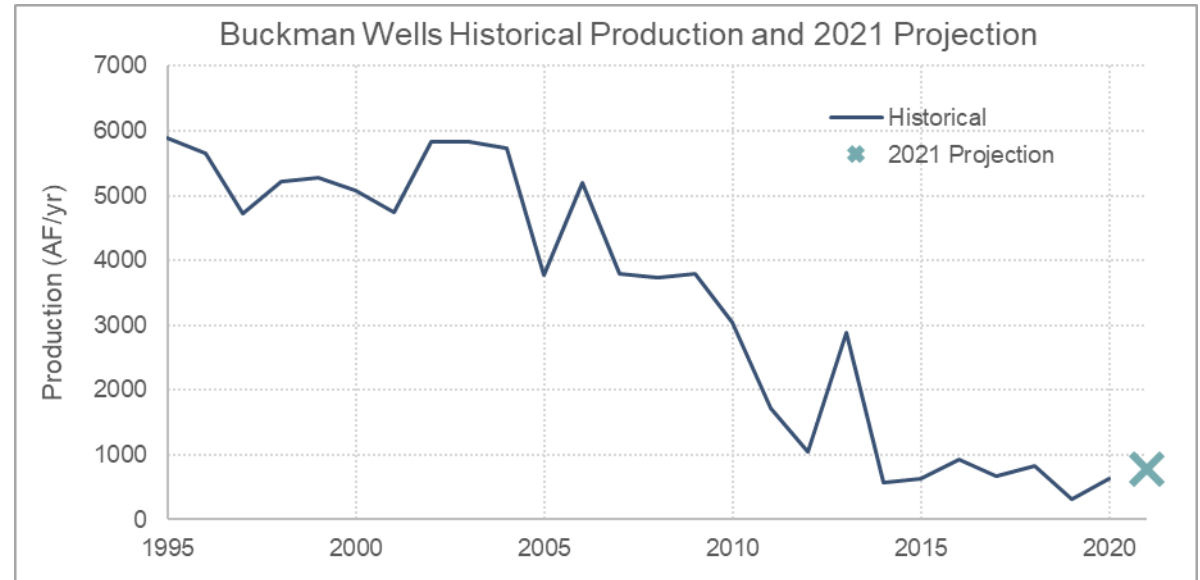
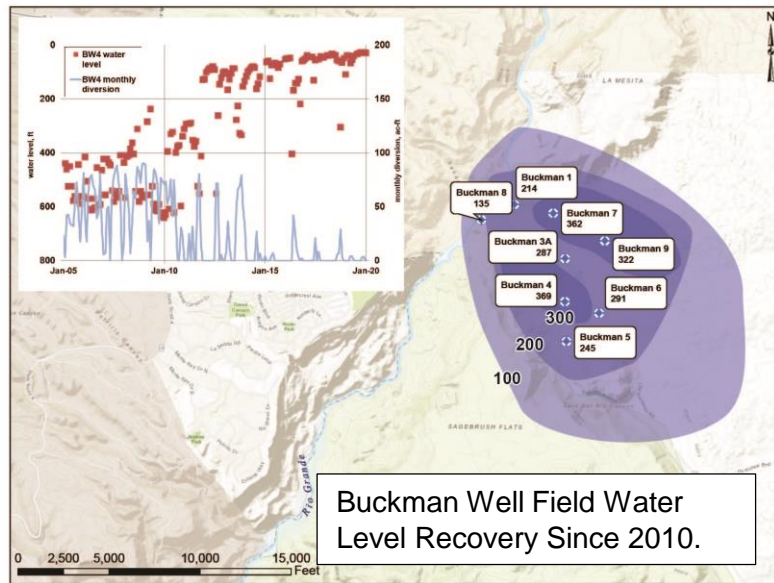
- 4865 AF/yr water right but can't exceed 35,072 AF in any 10 years
- Well field has been “resting” since BDD came online in 2011.
- Water levels in most wells are rising
- Living river flows may also play a part in this recovery



# Buckman Well Field 2021 Outlook

## 775 acre-feet target production for 2021

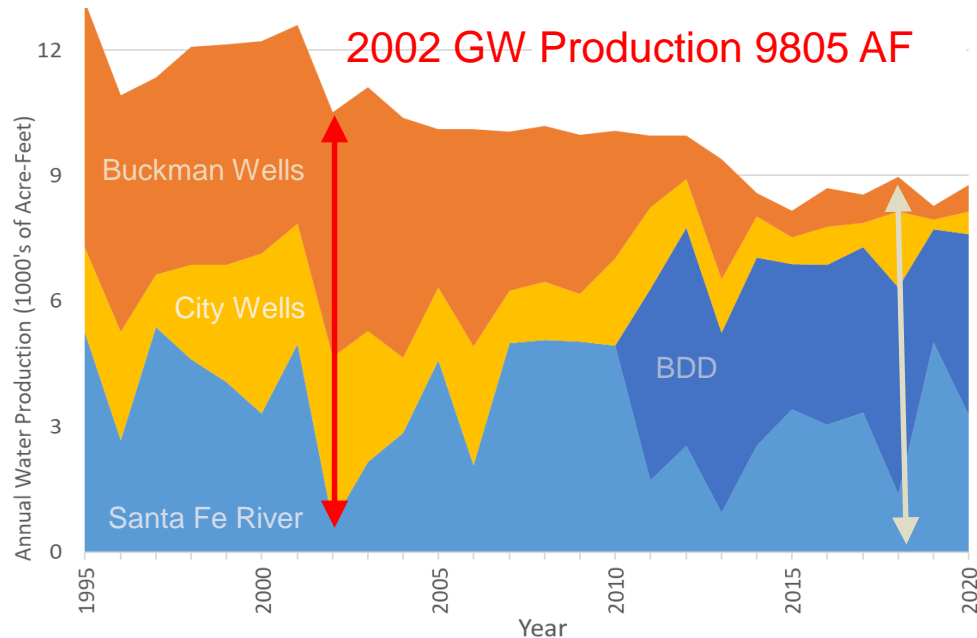
- 10,000 AF/yr permit, but current water rights of only 1437 AF/yr
- Well field has been “resting” since BDD came online in 2011.
- Water levels in the wells are rising
- Development in the City adds water rights to the Buckman Wellfield Permit to offset new water demand





# Groundwater production capacity

- City of Santa Fe Water's supply utilization strategy is to use wells enough to assure they are available at any time but otherwise preferentially use surface water
- Our wells and storage tanks alone can meet our peak daily and weekly demands
- Our wells alone can meet our current annual demand
- Another benefit of conservation is the security of this legacy groundwater production capacity



Total City demand since 2014 has been less than 9000 AF/yr

# Water and Growth - 1

## Development must offset new water demand

- Twenty five years of successful conservation and four separate supplies have put City of Santa Fe Water into a sustainable water resources position in which river water is used preferentially and wells are rested for periods of drought.
- City Code connects land use planning directly to water supply by requiring that developers offset new demand on the system.
- Currently developers do this by bringing water rights from the Rio Grande to the Buckman Wellfield permit, which allows more pumping from that wellfield.
- The connection of new demand to available water resources in the Buckman Wellfield may be reevaluated if we are able to expand our available surface water supply with the planned San Juan Chama return flow project.
- Long range water resources planning is ongoing to assure that City of Santa Fe Water provides a safe, reliable, and resilient water supply to meet Santa Fe's needs for decades to come.

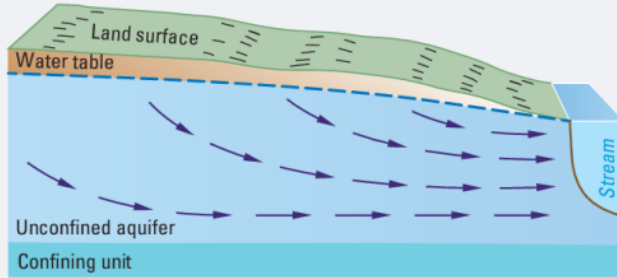
### Buckman Wellfield Permit

- 10,000 AF/yr
- Pumping the wellfield impacts nearby rivers, mostly the Rio Grande (RG)
- New Mexico water law requires that well pumping impacts to rivers be met with water rights on the river
- Currently City of Santa Fe Water has approximately 1437 AF of water rights in the Buckman Wellfield permit to offset river impacts
- Developments must bring water rights equivalent to their calculated added demand to the system.

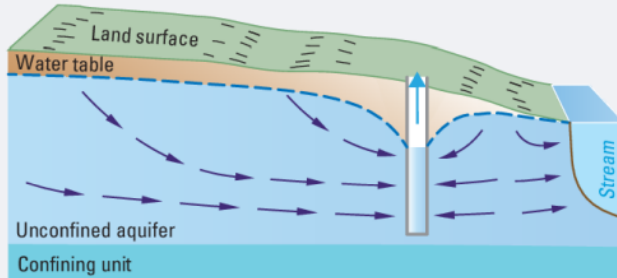
# Water and Growth - 2

## Well impacts on rivers

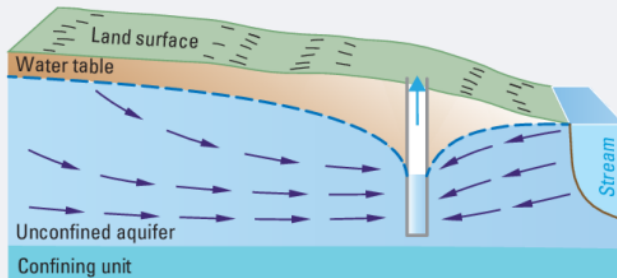
pumping at a hypothetical well site.



**A.** Under natural conditions, recharge at the water table is equal to discharge at the stream.



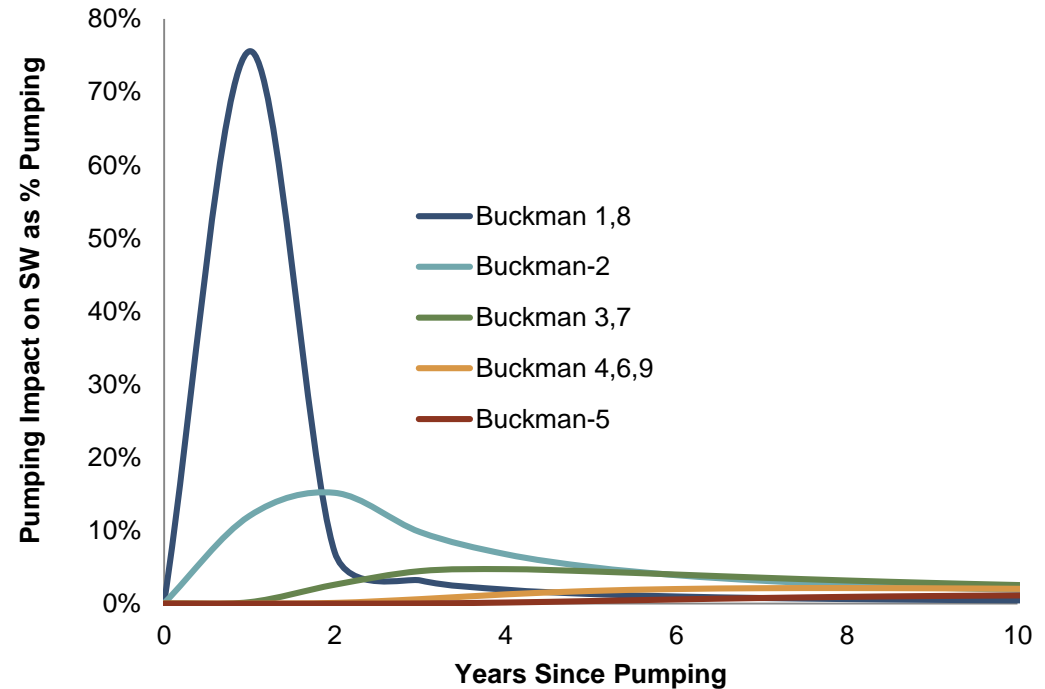
**B.** Pumping from a well removes water from storage in a cone of depression and reduces discharge to the stream.



**C.** In some circumstances, the pumping rate of the well may be large enough to cause water to flow from the stream to the aquifer, a process called induced infiltration of streamflow.

Groundwater models are used to calculate this impact, which because groundwater moves slowly can last for many years

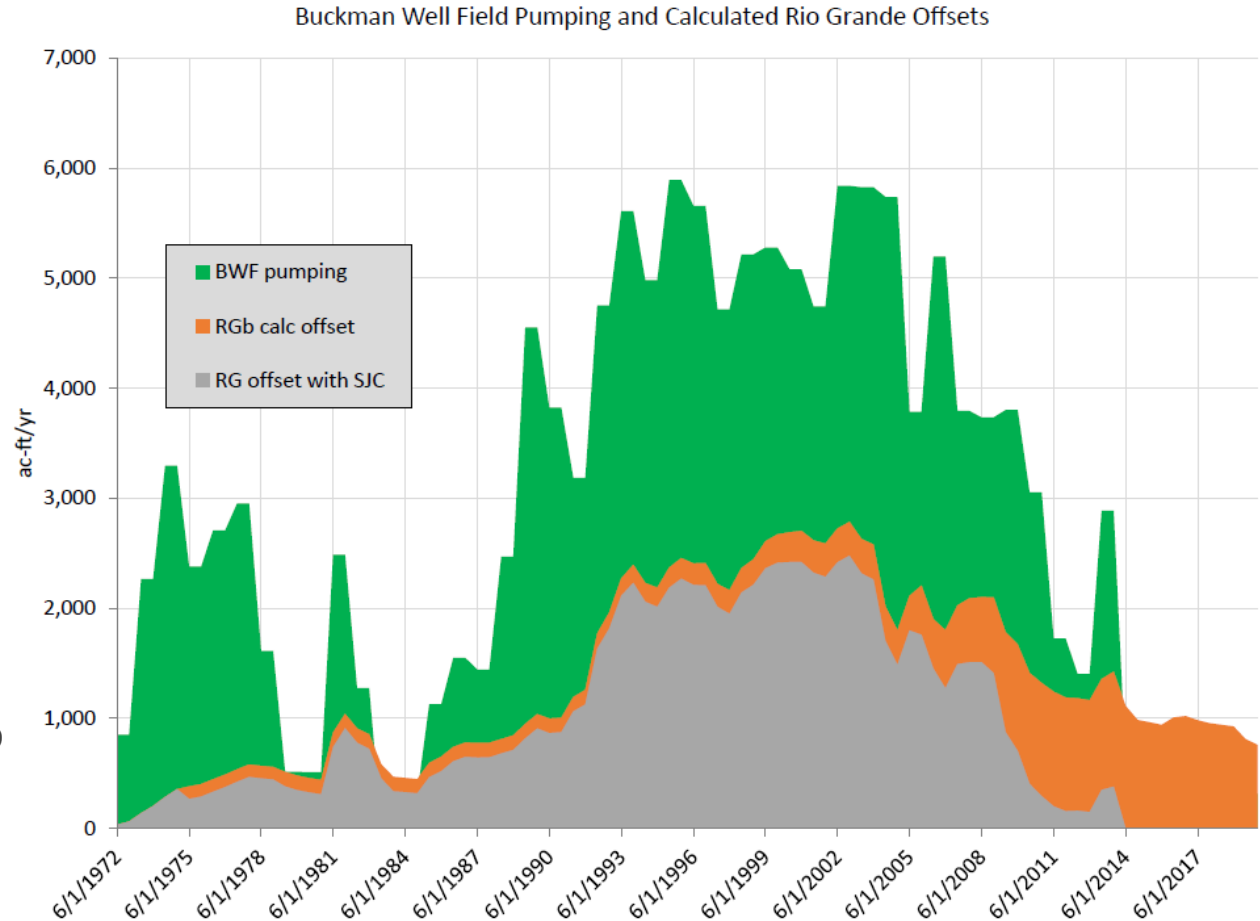
## Theoretical Impacts of Buckman Wells on Rio Grande



# Water and Growth

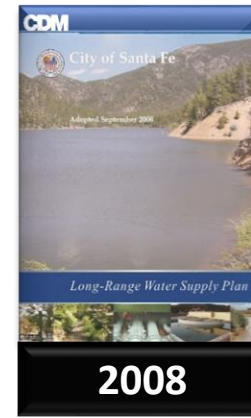
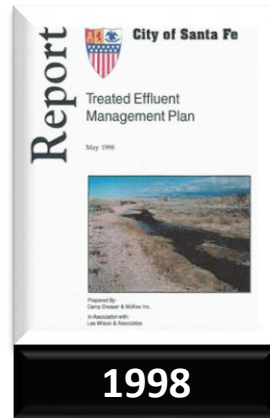
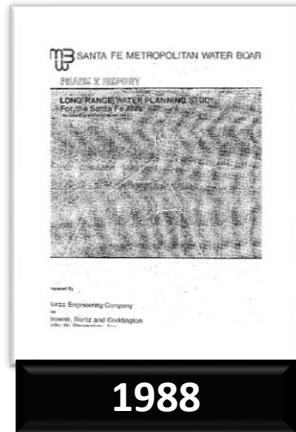
## What does it mean to bring water rights to the Buckman Wellfield?

- Buckman well impacts to the Rio Grande were offset mostly with San Juan Chama water through the early 2000's
- In 2011 the BDD came online giving us a way to directly divert and treat San Juan Chama water.
- This left a gap between a permit for up to 10,000 AF/yr of pumping and the water rights on the Rio Grande needed to pump this amount.
- New development must bring water rights to the Buckman Wellfield equal to the calculated water use the development adds to the system.



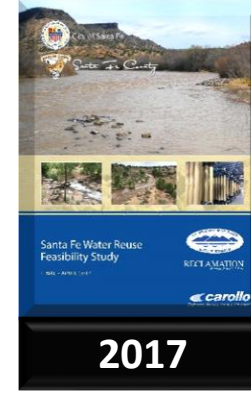
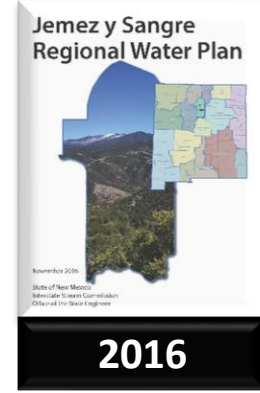
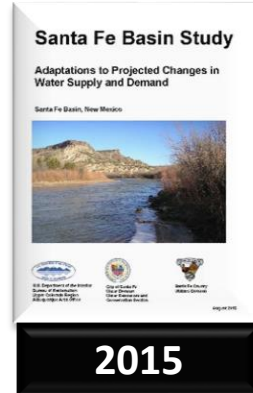
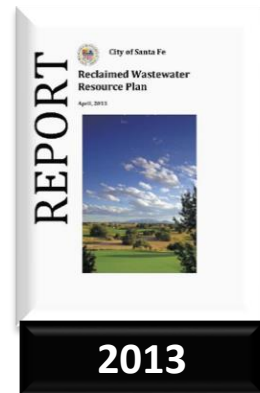


# Long Range Water Resources Planning



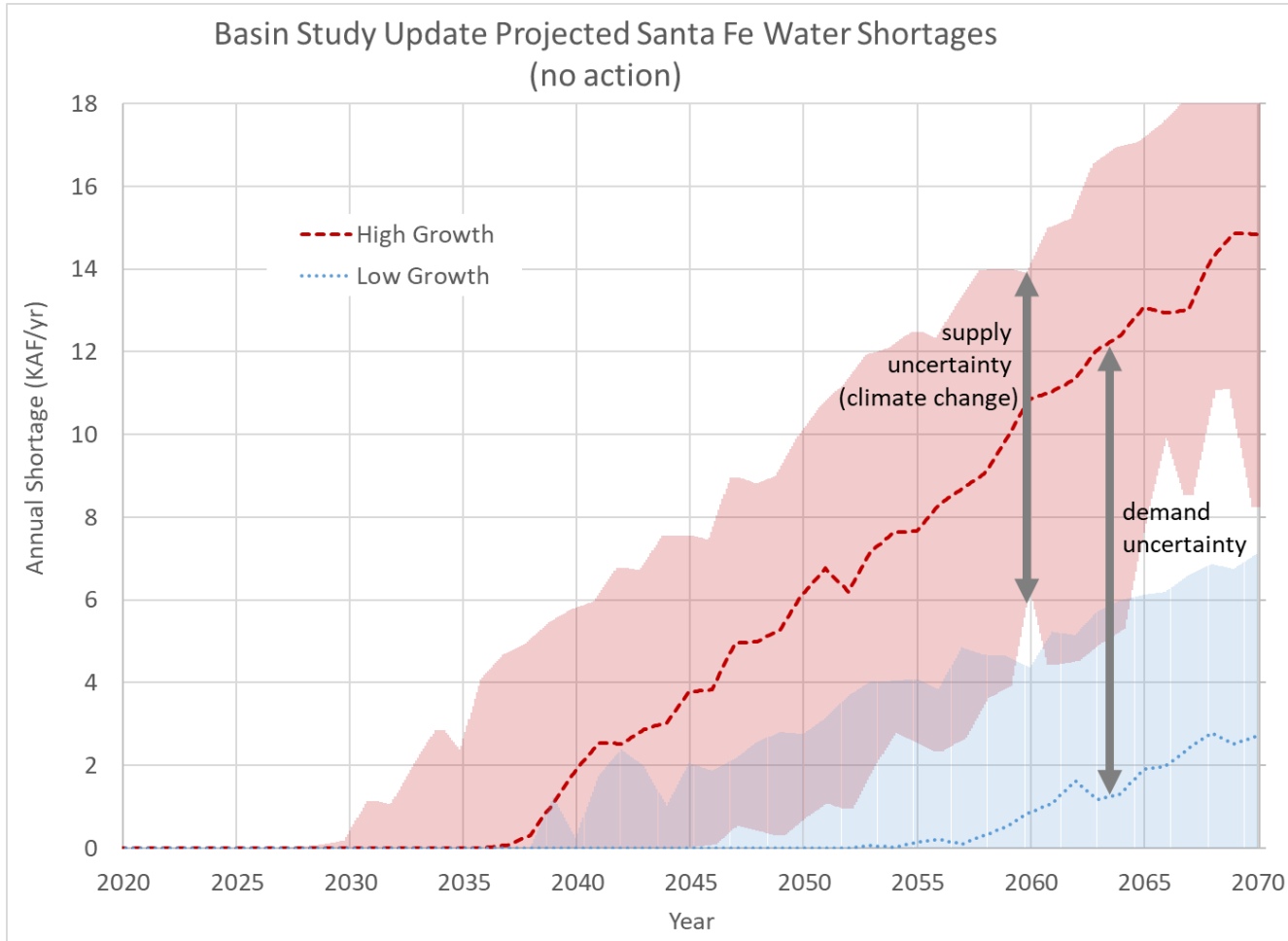
## 2020 - 2024

- In 2020 City of SF Water and Santa Fe County Utilities initiated a science based, community informed five year planning cycle to develop long range water resource management plans.
- For the City, this process will result in a water resources plan extending to 2100.
- USBR grant funding will be used to build a decision tool representing our system to inform planning process



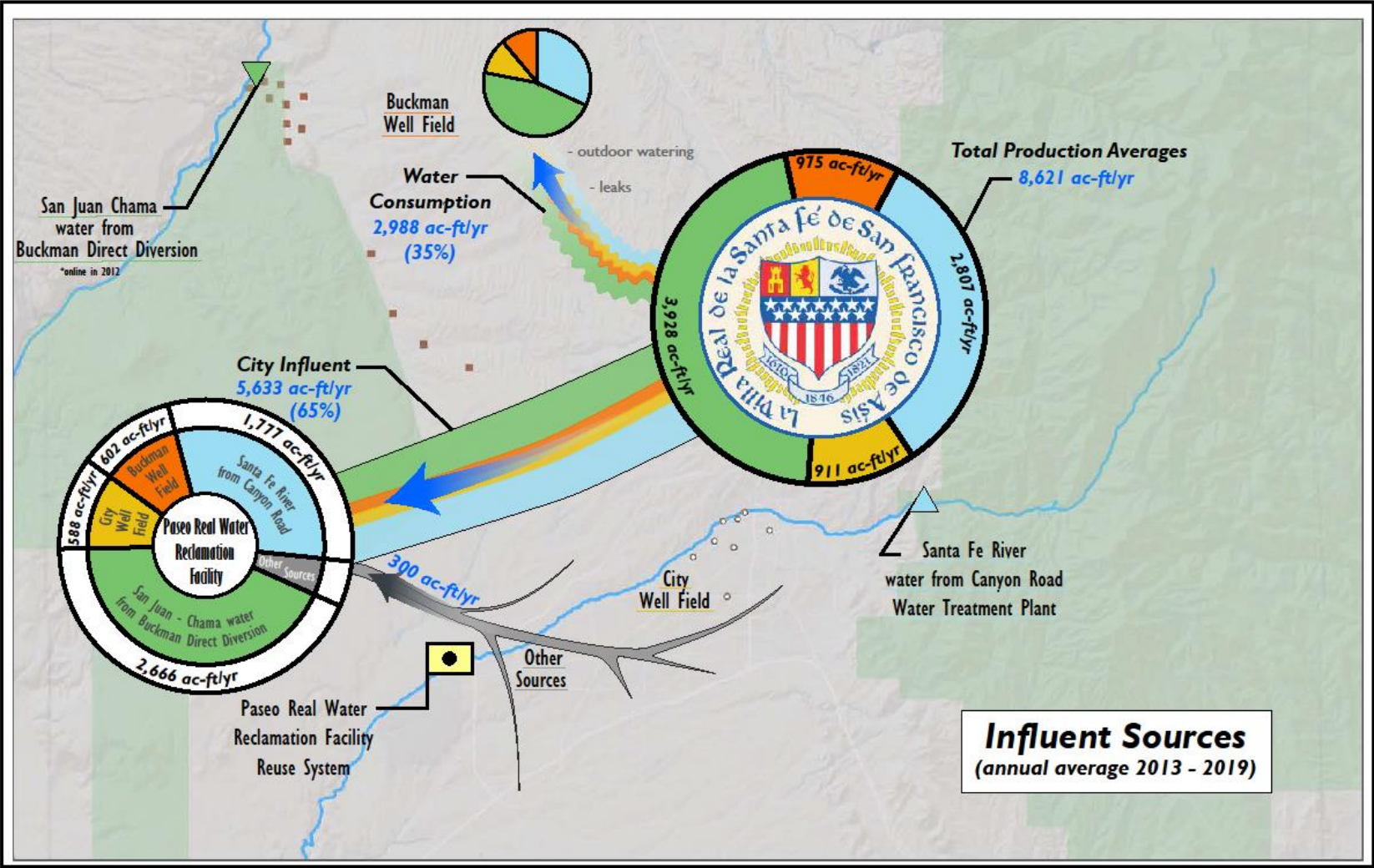
# Most recent planning efforts

## 2015 Santa Fe Basin Study and 2019 Santa Fe Basin Study Update



- Growing demand & less reliable supply will lead to shortages if we do nothing
- Best way to avoid these shortages is more efficient use of effluent

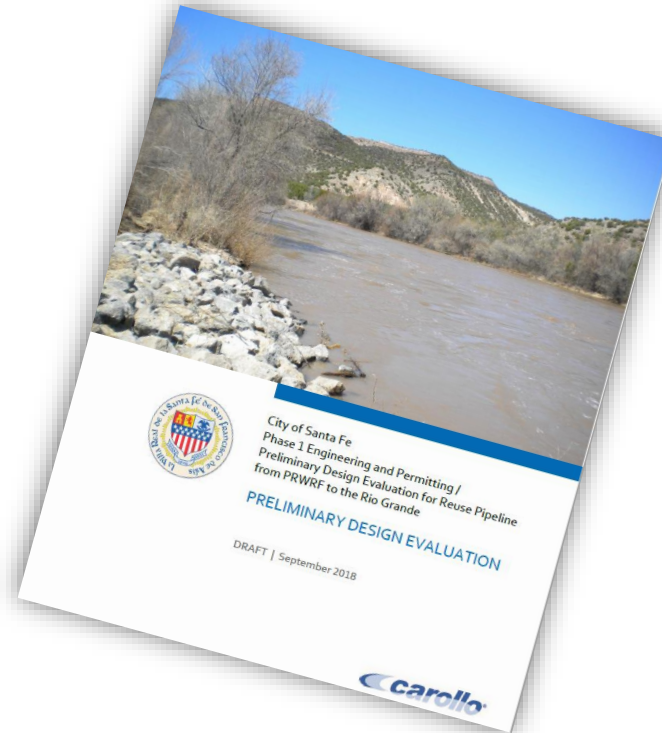
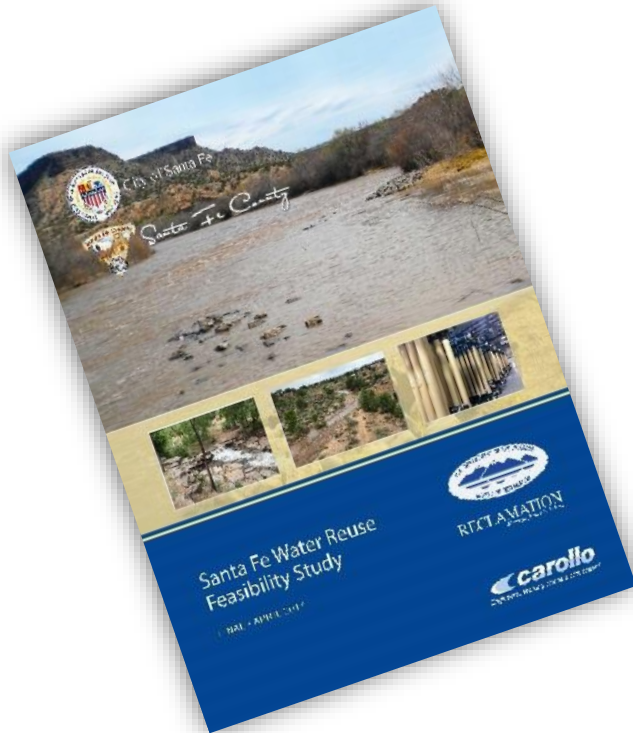
# 2013 – 2019 Flows to WWTP



# San Juan Chama Return Flow Project

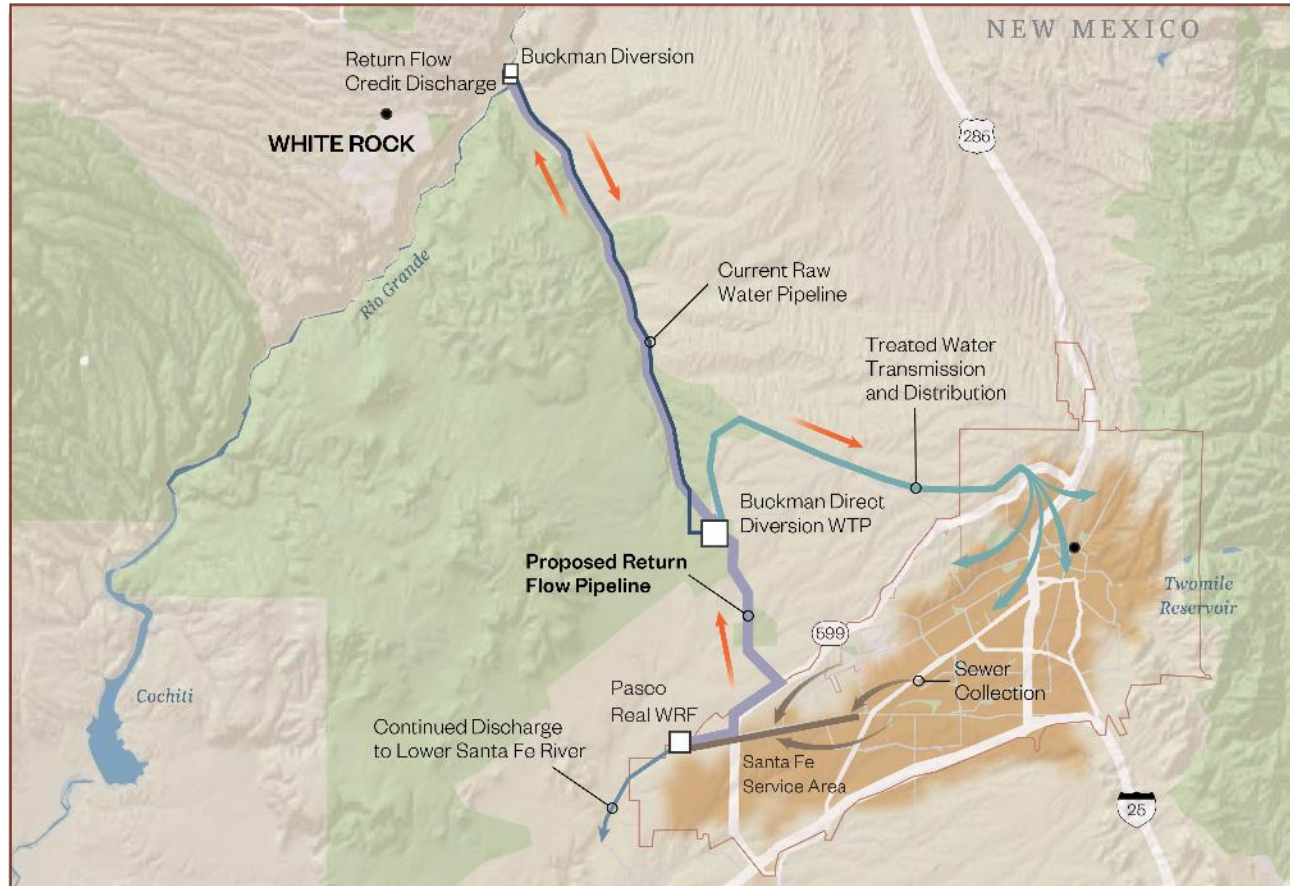
Returning water originating from the BDD to the Rio Grande was contemplated in the original BDD design

This idea was identified in the 2017 Reuse Feasibility Study as the preferred alternative for using effluent to increase City of Santa Fe Water supply.





# Project Location

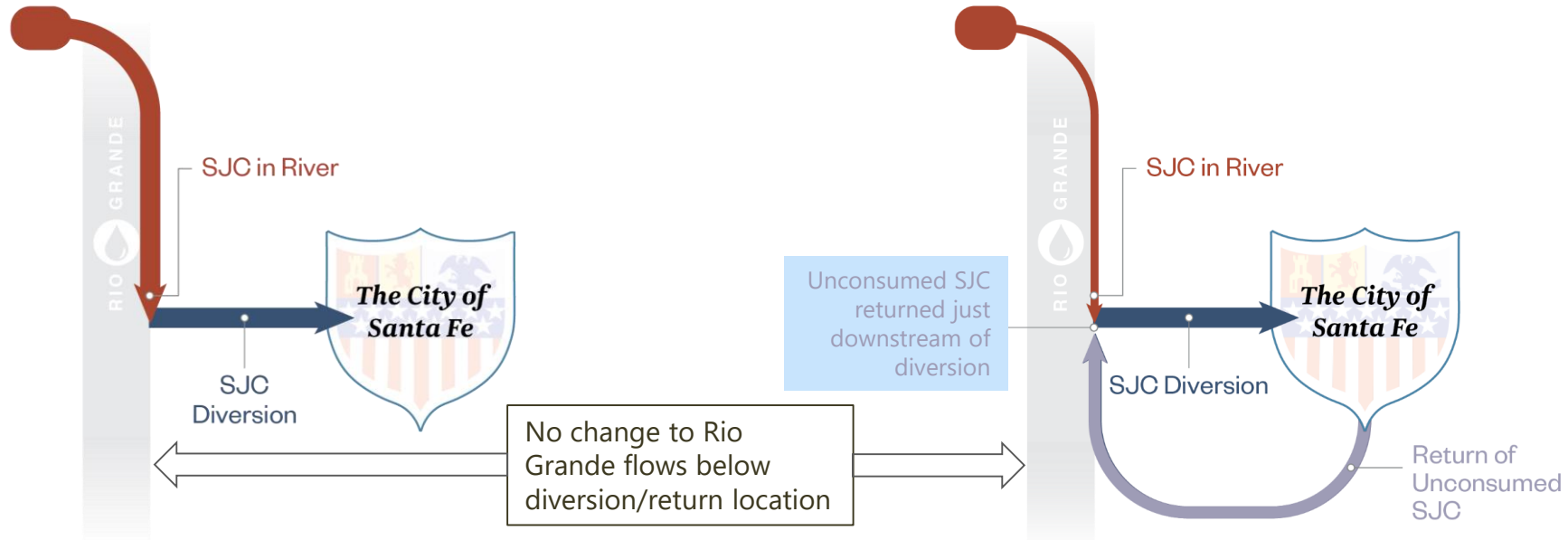




# San Juan Chama Return Flow Project

## Full consumption of SJC water

- Goal: Achieve full consumption of San Juan Chama (SJC) water by getting credit for returning unconsumed SJC water to the Rio Grande.



Current: all diversions at BDD from upstream reservoir releases

With project: same diversions at BDD with less release from upstream reservoirs. River "made whole" with effluent return.

# San Juan Chama Return Flow Project Timeline Update

- **January 13<sup>th</sup> 2021**

Status Update presented to City Council

- **February 4<sup>th</sup>**

BDD Board support for changes to BDD Project NEPA permits to allow increased San Juan Chama water diversions

- **April 8<sup>th</sup>**

Rio Grande Compact Commission tentative conclusion of no-impact to Compact accounting. Will evaluate fully with OSE permit application.

- **April 12<sup>th</sup>**

Submittal of applications to BLM and USFS for construction on public lands (largely in existing utility corridor).

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- **April 26<sup>th</sup> and May 12<sup>th</sup>**

Informational items to PWPUC & City Council

- **April 26<sup>th</sup>, May 3<sup>rd</sup>, and May 12<sup>th</sup>**

County agreement on partnership in project to PWPUC/FC/GB. (Approved by Board of County Commissioners 4/27)

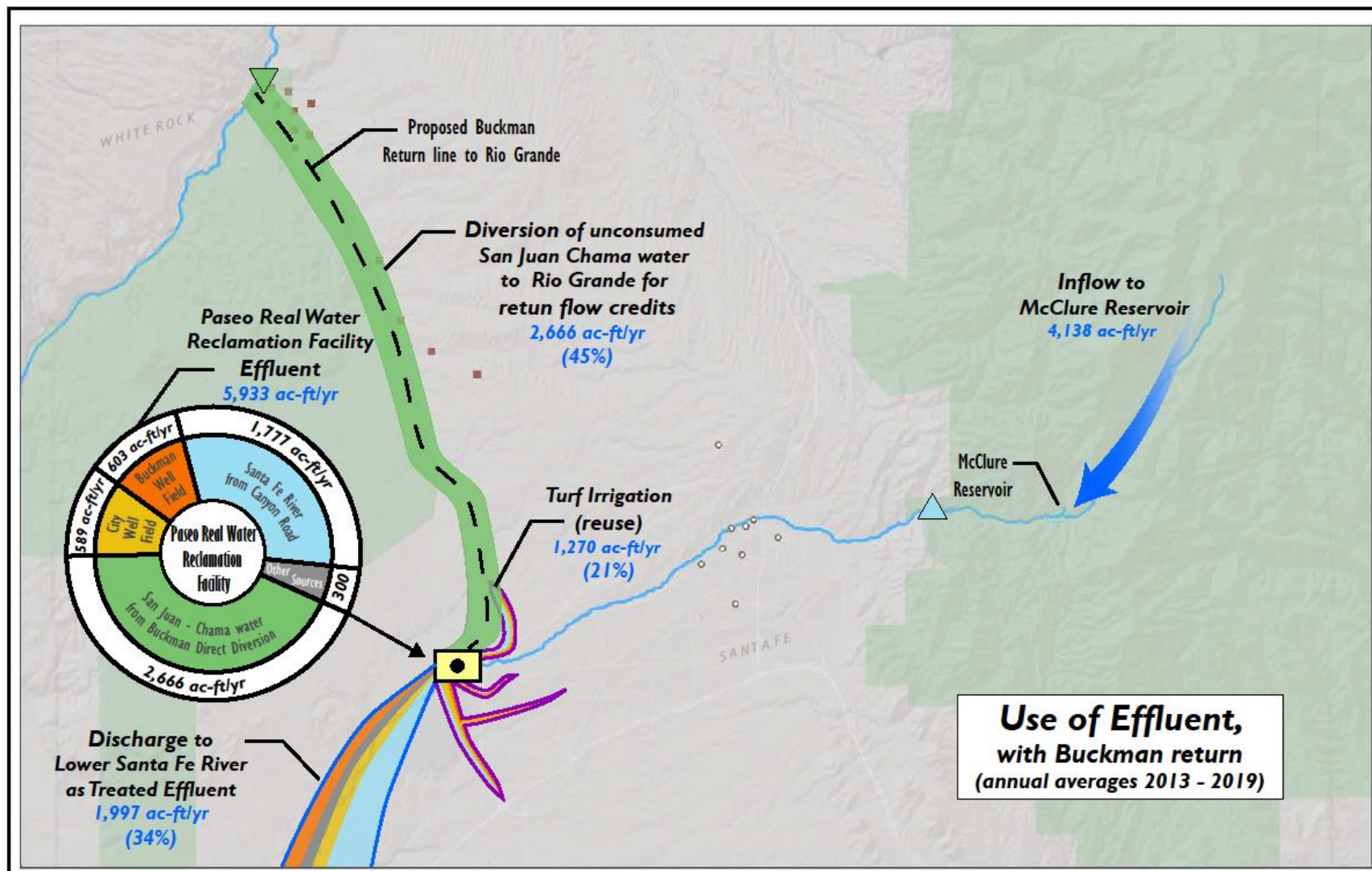
- **May 13<sup>th</sup>**

Target date for two informational webinars specific to the project and impending permitting process

- **May 18<sup>th</sup>**

Target date to start NEPA scoping, submit OSE return flow application, and release RFP for engineering design

# 2013 – 2019 w Pipeline





# Questions?

