

# [***Articles: Last Call: The Limitations of New Mexico's Existing Water Management Framework in the Face of Reduced Colorado River Water Deliveries***](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:6BGY-2061-F0R8-C431-00000-00&context=1516831)

Winter, 2024

**Reporter**

35 Colo. Nat. Res. Energy & Envtl. L. Rev. 35 \*

**Length:** 15762 words

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**Highlight**

[fcsa]*Abstract*

**Text**

**[\*37]**

**Introduction**

On a February day, marked by a bluebird sky, the waters of the sediment-rich Rio Grande wind through the Middle Rio Grande valley. Without human intervention, the ***river*** would be in a base flow season, where the water is at one of the lowest levels during a water year.[[3]](#footnote-4)1 In a heavily altered ***river*** system, like the Rio Grande, these historic low-flow seasons look very different - on this day in February, the ***river*** is running at 625 cubic feet per second, which is high for the late winter.[[4]](#footnote-5)2 Much of this water has traveled from the headwaters of the Rio Grande in the San Juan Mountains of Southern ***Colorado***.[[5]](#footnote-6)3 Some of this water, however, is not native to the Rio Grande.[[6]](#footnote-7)4 The San Juan-Chama Project ("SJCP") supplements the Rio Grande with water from the San Juan ***River***, using a series of conveyances and a reservoir.[[7]](#footnote-8)5 In a typical year, 96,200 acre-feet ("AF") of water is shunted annually from the San Juan into the Rio Grande, in accordance with the terms of the ***Colorado*** ***River*** Compact of 1922 and subsequent law, using the infrastructure built as a result of the ***Colorado*** ***River*** Storage Project Act.[[8]](#footnote-9)6 The flows that are not transferred to the Rio Grande Basin from the San Juan rush down to the San Juan's confluence with the ***Colorado*** ***River***.[[9]](#footnote-10)7 This water then rests in Lake Powell behind Glen Canyon Dam, where it waits to be released to meet ***Colorado*** ***River*** Compact obligations to states downstream of Lee Ferry.[[10]](#footnote-11)8

Within the last twenty years water levels at Lake Powell have declined so precipitously that water managers have begun to seriously analyze the risk that it may no longer be possible to meet the obligations set **[\*38]**out in the ***Colorado*** ***River*** Compact.[[11]](#footnote-12)9 Although there are myriad consequences of the anthropogenic water shortages on the ***Colorado*** ***River*** - that is shortages caused both by overuse and by reductions in water availability resulting from climate change - this Article focuses on how existing legal structures in New Mexico will respond to reduced SJCP water deliveries under a curtailment pursuant to Article III of the ***Colorado*** ***River*** Compact. Article III of the 1922 ***Colorado*** ***River*** Compact describes the delivery non-depletion requirement, which the Lower Basin states could hypothetically choose to enforce if the Upper Basin fails to make the agreed-upon deliveries.[[12]](#footnote-13)10 In other words, Lower Basin states may require Upper Basin states to forbear use of their water allocation. In January of 2023, the ***Colorado*** ***River*** Board in California suggested that it may be time to do just this and enforce Article III.[[13]](#footnote-14)11

The 1948 Upper ***Colorado*** ***River*** Basin Compact ("UCRBC"), made between New Mexico, ***Colorado***, Wyoming, and Utah, requires that shortages on the ***Colorado*** ***River*** be shared proportionally between these four Upper Basin States.[[14]](#footnote-15)12 The limited framework for Upper Basin curtailments is found within the UCRBC.[[15]](#footnote-16)13 It fails to dictate, however, how to implement this proportional shortage-sharing regime.[[16]](#footnote-17)14 Furthermore, this regime does not consider the internal institutional consequences of shortages for individual states. Deliveries from the SJCP, which have been frequently constrained in the twenty-first century not by compact-driven rules but simply by bad hydrology, were just 65.5 percent of a full **[\*39]**allocation in 2021,[[17]](#footnote-18)15 and are likely to be further reduced in the coming years due to prolonged reductions in runoff and increased evaporation. In 2021, only 63,000 AF supplemented the Rio Grande due to water shortages in the ***Colorado*** ***River*** Basin.[[18]](#footnote-19)16

A curtailment, or reduction in the amount of water the Upper Basin may use, under Article III of the ***Colorado*** ***River*** compact will almost certainly lead to reductions in how much water New Mexico receives from the ***Colorado*** ***River*** via the SJCP. This would significantly reduce water available to municipalities like Albuquerque, Los Alamos, and Santa Fe, as well as agricultural areas like the Middle Rio Grande Conservation District ("MRGCD"). The state should contemplate the best way to apply shortage conditions, and municipalities should plan for water use restrictions and effective implementation of these use restrictions in advance of needing to implement them. While there is a concern that making (and more importantly, publishing) plans that reflect a prolonged water shortage could be leveraged by other states to demonstrate that New Mexico does not plan to make beneficial use of its full ***Colorado*** ***River*** allocation, this concern ignores the importance of water agencies planning for worst-case scenarios. This analysis will be useful to policymakers in identifying both areas where existing law can be used effectively and weaknesses in existing law that may require further development.

New Mexico has a unique history of water management regimes, beginning with the shared irrigation systems of the Ancestral Puebloans.[[19]](#footnote-20)17 The principle of shared irrigation was applied by the Spanish when they managed acequias using the repartimiento philosophy.[[20]](#footnote-21)18 It wasn't until the early 1900s that New Mexico began following the system of prior appropriation, as part of the conditions for the Bureau of Reclamation ("Reclamation") constructing and managing Elephant Butte Reservoir.[[21]](#footnote-22)19 Though the priority system has been codified for over 110 years in New Mexico, priority calls have never been enforced in the state.[[22]](#footnote-23)20 Given this multi-layered management framework, there is significant nuance in how current **[\*40]**law in New Mexico governs climate change-related water shortages. This Article will analyze the efficacy of the existing legal structure in New Mexico in the face of significant reductions in SJCP water, in the event of a curtailment under Article III of the ***Colorado*** ***River*** Compact should the Upper Basin fail to meet its delivery obligations under the Law of the ***River***. Such a curtailment has never happened before.[[23]](#footnote-24)21

The background explains the Law of the ***River***, which includes the doctrine of prior appropriation, as well as the extensive body of federal law on the ***Colorado*** ***River***. This Article explains the water management frameworks within New Mexico, which span the State's unique application of prior appropriation, water right management through the Office of the State Engineer ("OSE"), and legal water structures specific to New Mexico, like acequias. This subsection also addresses New Mexico's other internal water management frameworks. This Article then addresses the reduced water availability in both the ***Colorado*** ***River*** and Rio Grande ***River*** Basins and discusses the interplay between the two. Finally, the background section enumerates the federal and state responses to reduced ***Colorado*** ***River*** availability, culminating in the resulting risk for an Article III compact call.

In the analysis, this Article examines federal law, including interstate compacts and the SJCP authorizing statute to analyze the constraints on New Mexico water deliveries. This Article then looks at New Mexico's existing water management systems to understand where New Mexico has robust water management systems and where the state has room to create a more resilient framework for water management in times of shortage. This Article first examines the application of prior appropriation in New Mexico, then it considers Active Water Resources Management and the law of acequias as alternative models that diverge from traditional prior appropriation. Using these analyses, this article explains that New Mexico already has a culturally robust water management system, and legal frameworks should be modified to more accurately reflect this system for easier implementation in times of shortage. The Article concludes with the observation that stationarity no longer exists, and thus the legal norms of the twentieth century in New Mexico will be ineffective in the face of coming water shortages.

**[\*41] I. The Existing Law of the *River* is Ill-Suited to the Challenges of Climate Change**

The ***Colorado*** ***River*** is managed under a complex multi-level regime, involving federal, tribal, state, and municipal actors. Systems such as this are sometimes referred to as being "polycentric." [[24]](#footnote-25)22 This Section begins by explaining the doctrine of prior appropriation, the development of which influenced the creation of the ***Colorado*** ***River*** Compact of 1922. This article discusses the relevant interstate compacts, as well as the legislation appropriating funds to develop the infrastructure required to make use of the water allocated in the compacts. It addresses the current science on climate change-related water shortages in both the ***Colorado*** and the Rio Grande ***River*** Basins, and then details the federal and New Mexico state responses to the shortages. Finally, it explains New Mexico's current risk for further ***Colorado*** ***River*** delivery reductions.

**A. Prior Appropriation is a Critical Component of Water Management.**

**1. The System of Prior Appropriation governs water management across the West, including on the *Colorado* *River*.**

The doctrine of prior appropriation, also referred to as "first in time, first in right,"[[25]](#footnote-26)23 established a priority system that allocates water based on the seniority of water claims.[[26]](#footnote-27)24 In years of shortage, those with the earliest priority dates could make a priority call and use the limited water before those with more junior claims.[[27]](#footnote-28)25 These priority calls often result in curtailments. A curtailment to a water right involves a water administration entity reducing or completely stopping a water right holder's access to their allocated water under the relevant governing law.[[28]](#footnote-29)26

**[\*42]**Although ***Colorado***, like many Western States, adopted the doctrine of prior appropriation in the late 1800s to manage water usage rights,[[29]](#footnote-30)27 prior appropriation was not adopted in New Mexico until 1907.[[30]](#footnote-31)28 It was implemented specifically to allow Reclamation to invest in large-scale water storage projects, such as the Carlsbad Irrigation District and Elephant Butte Reservoir.[[31]](#footnote-32)29 Historically, prior appropriation was first applied in courts before it was official adopted into state statutes, and in some cases into state constitutions.[[32]](#footnote-33)30 In New Mexico, the addition of prior appropriation to the state constitution ran directly counter to the existing water-sharing system in the state and was done primarily at the behest of Reclamation.[[33]](#footnote-34)31 While the official adoption of prior appropriation allowed Reclamation to develop large scale water storage programs in New Mexico,[[34]](#footnote-35)32 primarily for the benefit of agricultural irrigation and the resultant economic development, it did not change the existing water allocation norms in the state, which focused largely on sharing shortages rather than the more Anglocentric philosophy of cutting off water to more junior users in the event of a shortage.[[35]](#footnote-36)33 This trend continues to influence how the New Mexico State Engineer manages water in the state.

**2. New Mexico has a unique history of water management that has influenced how the state currently manages water.**

Tribal water entitlements and New Mexico's historical water-sharing doctrines make enforcement under a pure prior appropriation regime difficult. Queen Isabella of Spain first acknowledged Pueblo water rights during Spain's occupation of the land that is now New Mexico.[[36]](#footnote-37)34 Spain consistently recognized the Pueblos' right to use water in the Middle Rio Grande under the doctrine of Repartimiento de Agua.[[37]](#footnote-38)35 This system required all parties in the water system to share the burden of water shortages **[\*43]**and did not consider priority dates.[[38]](#footnote-39)36 Mexico recognized tribal water rights as repartimiento continued and were eventually recognized by the United States government, after the Treaty of Guadalupe Hidalgo.[[39]](#footnote-40)37 This lasted until 1907 when the doctrine of prior appropriation was introduced to New Mexico.[[40]](#footnote-41)38 In 1908, the Supreme Court in *Winters v. United States* acknowledged the seniority of tribes' water rights, but many of those rights across the United States, including in New Mexico, were never quantified, which makes it difficult for tribes to enforce their water rights.[[41]](#footnote-42)39 Tribal water rights are an essential part of New Mexico's water allocations, and tribal considerations are a necessary component of any water allocation conversation.

**B. The *Colorado* *River* Compact of 1922 and subsequent legislation established constraints for how the *Colorado* *River* may be used.**

In 1922 representatives from the seven ***Colorado*** ***River*** Basin states - Wyoming, ***Colorado***, Utah, New Mexico, Arizona, Nevada, and California - met in Santa Fe, New Mexico to sign the ***Colorado*** ***River*** Compact ("Compact").[[42]](#footnote-43)40 The Compact was subsequently ratified by Congress, codifying it as the first interstate compact governing the allocation of the ***Colorado*** ***River***.[[43]](#footnote-44)41 The Compact allocated 7.5 million acre-feet ("MAF") of water to Upper Basin states (Wyoming, ***Colorado***, Utah, and New Mexico) and 7.5 MAF to Lower Basin states (Arizona, Nevada, and California).[[44]](#footnote-45)42 In the years leading up to 1922, the ***Colorado*** ***River*** experienced the wettest period in 500 years,[[45]](#footnote-46)43 and the fifteen MAF of water allocated by the **[\*44]**compact appeared to be merely a portion of the water available annually.[[46]](#footnote-47)44 The representative from New Mexico reported that there were "many million acre-feet" of ***Colorado*** ***River*** that were "unappropriated and unused."[[47]](#footnote-48)45 This representative, S.B. Davis Jr., continued to indicate that there were three MAF from the San Juan ***River*** that could be used for agriculture, and noted that water from the San Juan ***River*** was potentially New Mexico's most valuable resource.[[48]](#footnote-49)46

In the decades following the 1922 Compact, states saw significantly less water in the ***Colorado*** ***River*** than had been recorded in the years leading up to the creation of the Compact much less water than S.B. Davis Jr. had reported. Generally, a compact call involves one state filing a legal claim demanding that another state forbear the use of all or part of its water allocation so that the claimant state may receive its full water allocation under an interstate compact.[[49]](#footnote-50)47 While there were no compact calls made, owing to the bounty of water stored in Lake Mead (and later Lake Powell), the circumstances under which a compact call would arise became a topic of conversation. In the case of the ***Colorado*** ***River*** Compact, a compact call would involve a Lower Basin state or states calling upon Upper Basin states to reduce their water use to meet the terms of the Compact.

While the ***Colorado*** ***River*** water had been divided between basins, the Upper Basin and the Lower Basin still needed to allocate portions of water internally. The Upper ***Colorado*** ***River*** Basin Compact ("UCRBC") was ratified in 1949.[[50]](#footnote-51)48 The Upper Basin allocated water via percentages, which would turn out to be a prescient decision in light of current water shortages, where a percentage allocation is reduced proportionally.[[51]](#footnote-52)49 Under the UCRBC, New Mexico's ***Colorado*** ***River*** entitlement is 11.25 percent of the Upper Basin's ***Colorado*** ***River*** allocation.[[52]](#footnote-53)50 Although New Mexico was legally entitled to roughly 843,750 AF,[[53]](#footnote-54)51 the state would need to divert 96,000 AF of the entitlement away from the lands adjacent to the San **[\*45]**Juan ***River*** and out of the ***Colorado*** ***River*** Basin to be used in other parts of the state. The remaining 747,750 AF of water were to remain in the ***Colorado*** ***River*** basin in New Mexico to supply water for the agricultural needs of the San Juan Valley, the Navajo Nation, and the Jicarilla Apache Nation.[[54]](#footnote-55)52 Much of this in-basin water entitlement was never developed.[[55]](#footnote-56)53 The 96,000 AF of water that was destined for use out of the basin, however, was needed for further development along the Rio Grande. It was not for another twenty-two years, in 1962, that New Mexico would see legislation to create the necessary infrastructure to use its entire allocation.[[56]](#footnote-57)54

**C. The *Colorado* *River* plays an integral role in New Mexico's water supply.**

**1. The management of New Mexico's *Colorado* *River* allocation is governed largely by geography.**

The section of ***river*** that most people consider the ***Colorado*** ***River*** runs from ***Colorado*** to Utah, to Arizona, bypassing New Mexico entirely.[[57]](#footnote-58)55 However, the ***Colorado*** ***River*** system consists of three major tributaries that join in Utah, just upstream from Glen Canyon.[[58]](#footnote-59)56 The northernmost fork, the Green ***River***, begins in Wyoming.[[59]](#footnote-60)57 The middle fork, which was once called the Grand, but is now known as the ***Colorado*** ***River***, begins in the northern Rockies of ***Colorado***.[[60]](#footnote-61)58 The San Juan ***River***, however, makes its headwaters in the San Juan Mountains, just north of the ***Colorado***-New Mexico border, and collects in Navajo Lake before it is released to run south through Bloomfield, New Mexico.[[61]](#footnote-62)59 The ***river*** continues through Farmington, where it joins the Animas ***River***.[[62]](#footnote-63)60 The San Juan ***River*** then flows to Shiprock and traverses much of the Navajo Nation as **[\*46]**it winds back northward to its confluence with the ***Colorado*** ***River*** in Utah, just east of Lake Powell.[[63]](#footnote-64)61

On the eastern side of the Continental Divide, the Rio Chama also begins in the San Juans in Southern ***Colorado***, further east than the San Juan, quite close to the Jicarilla Apache Nation.[[64]](#footnote-65)62 It travels south, directly through the town of Chama.[[65]](#footnote-66)63 Downstream of Chama, the Rio Chama is joined by Willow Creek, where imported San Juan-Chama water is stored in Heron Reservoir.[[66]](#footnote-67)64 Just downstream from the confluence of Willow Creek and the Rio Chama, the ***river*** enters by El Vado Reservoir.[[67]](#footnote-68)65 It continues further south to Abiquiu Lake northwest of Abiquiu, where it turns eastward.[[68]](#footnote-69)66 On the Ohkay Owingeh Pueblo, the Rio Chama joins the Rio Grande.[[69]](#footnote-70)67 Since the ***Colorado*** ***River*** does not physically run through the state, New Mexico would need to rely on the San Juan ***River***, a tributary of the ***Colorado***, to deliver the allocation.[[70]](#footnote-71)68 Even this solution, however, would require the development of infrastructure to store and transport the water.[[71]](#footnote-72)69 This motivated the creation of the ***Colorado*** ***River*** Storage Project Act ("CRSPA").[[72]](#footnote-73)70

**[\*47] Figure 1: Eric Kuhn & John Fleck, Science Be Demmed 10 (2019). Map used with permission.**

**2. To allow New Mexico to use its entire *Colorado* *River* allocation, further legislation was necessary.**

Although allocating the ***Colorado*** ***River*** seemed like the perfect solution to equitably distribute water within the basin to support the developing urban and agricultural hubs of the West, it was done before infrastructure existed to get the water from the ***river*** to the people who wanted to use it. The CRSPA authorized federal funding to designated ***Colorado*** ***River*** storage projects and infrastructure in the Upper Basin, including reservoirs.[[73]](#footnote-74)71**[\*48]**When these projects were first introduced, even with comparatively rudimentary hydrological measurements, there were concerns about the cost of evaporative losses.[[74]](#footnote-75)72 These concerns extended to losses from conveyance systems like those used in the SJCP.[[75]](#footnote-76)73 The SJCP was authorized by Congress in 1962 to deliver water from tributaries of the San Juan, part of the ***Colorado*** ***River*** system, to the Chama ***River***, part of the Rio Grande ***River*** system.[[76]](#footnote-77)74 The idea for the SJCP dates to the 1930s, when the National Resources Planning Board suggested it as a solution to chronic water shortfalls on the Rio Grande. The idea was to move a share of New Mexico's ***Colorado*** ***River*** Basin water via transmountain diversion across the Continental Divide to the heavily populated Rio Grande Valley for use in Albuquerque and other communities.[[77]](#footnote-78)75 New Mexico's approval of the Rio Grande Compact in 1938 was predicated in part on the availability of SJCP water to supplement the natural flow of the Rio Grande in support of the growing city of Albuquerque and other central New Mexico water users.[[78]](#footnote-79)76 The project was authorized by Congress in 1962, with the first water deliveries made in 1971.[[79]](#footnote-80)77

The SJCP created a series of tunnels that divert flows from the Navajo, Little Navajo, and Rio Blanco ***Rivers***.[[80]](#footnote-81)78 This water is transferred to the Rio Grande basin, where, when New Mexico receives the full allocation of SJCP water, it provides 22,000 AF of water for irrigation and 74,000 AF for municipal use in Santa Fe, Los Alamos, and Bernalillo County. The SJCP water has become a critical part of water supplies, particularly in the Middle Rio Grande ("MRG"), which includes both agriculture and Bernalillo County municipalities.[[81]](#footnote-82)79 Congressional appropriations for the SJCP provided funding for the development of the SJCP conveyance to the Rio Grande, as well as funding for the Navajo Nation to develop its water infrastructure.[[82]](#footnote-83)80 The language in the appropriations prioritized the Navajo Irrigation Project, however the SJCP was constructed first.

**3. The tribal portions of legislation were not completed on the same timescale as the nontribal portions and required significant concessions from tribes.**

It took ten years for the non-tribal portions of the SJCP to be completed.[[83]](#footnote-84)81 New Mexico received 100 percent of its UCRBC allocation in 1972.[[84]](#footnote-85)82 The tribal portions of the project took even longer. Paradoxically, New Mexico advocated for a larger portion of ***Colorado*** ***River*** water during the negotiations of the UCRBC to supply the water owed to tribes under the *Winters* doctrine.[[85]](#footnote-86)83 In the following years, a settlement with the Navajo Nation determined that the Nation has a right to 405,950 AF of ***Colorado*** ***River*** water in New Mexico.[[86]](#footnote-87)84 One of the conditions of this settlement was the changing of the Navajo Nation priority date from 1868, the date of reservation establishment, to two dates: 1955 and 1968.[[87]](#footnote-88)85

Jicarilla Apache Nation has a very different story. Jicarilla Apache Nation is recognized to have 32,000 AF of water in New Mexico, under the terms of its 1992 settlement.[[88]](#footnote-89)86 Unlike the Navajo Nation, the Jicarilla Apache Nation has significantly less farmable land.[[89]](#footnote-90)87 For this reason, Jicarilla Apache Nation previously leased its water allocation for power plant cooling at San Juan Generating Station.[[90]](#footnote-91)88 When the generating **[\*49]**station closed, the allocation was converted to "system water" and now flows to Lake Powell.[[91]](#footnote-92)89 Some experts consider this system of water to be an asset in the Upper ***Colorado*** ***River*** Basin Demand Management.[[92]](#footnote-93)90 In an agreement reached between Jicarilla Apache Nation, the Nature Conservancy, and the State of New Mexico, the New Mexico Interstate Stream Commission signed a ten-year lease in which the state will pay Jicarilla Apache for 20,000 AF of water annually.[[93]](#footnote-94)91 The funds for this lease are from New Mexico's Strategic Water Fund.[[94]](#footnote-95)92

The Pueblos of the Middle Rio Grande (Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia, and Isleta),[[95]](#footnote-96)93 along with the Rio Grande and Rio Chama Pueblos to the north (Taos, Ohkay Owingeh, Santa Clara, and San Ildefonso) rely on water from the Rio Grande.[[96]](#footnote-97)94 All Pueblos south of Taos also rely on the water that flows from the Rio Chama/Rio Grande confluence. Although the tribal component of New Mexico's ***Colorado*** ***River*** allocation has historically been downplayed, it will become more and more critical in light of reduced ***Colorado*** ***River*** water availability.

**D. Water supplies in both the *Colorado* and Rio Grande Basins are shrinking as a result of anthropogenic climate change.**

Anthropogenic climate change has fundamentally altered the hydrology of the West. Snowpack in the Never Summer Range of Northern ***Colorado***, where the ***Colorado*** ***River*** begins, is evaporating before it can melt and reach the ***Colorado*** ***River***.[[97]](#footnote-98)95 This leads to a lack of runoff, which **[\*50]**significantly reduces ***Colorado*** ***River*** flows.[[98]](#footnote-99)96 The aridification of the twenty-first century has persisted in the ***Colorado*** ***River*** and Rio Grande Basins, and as annual temperatures continue to rise, Reclamation warned in December 2022 of a risk that the ***Colorado*** ***River*** releases at Lee Ferry would be reduced to around seven MAF, for at least two years.[[99]](#footnote-100)97 These estimates show evaporative losses at Lake Powell around 200,000 AF a year.[[100]](#footnote-101)98 Independent analyses, however, show that the 24-month Projections released by Reclamation tend to be inaccurate predictors that do not account for increasing aridification of the Southwest.[[101]](#footnote-102)99 Aridification, broadly, is the gradual change of a climate from wet to dry.[[102]](#footnote-103)100 Though some of this aridification is the result of climate trends independent of anthropogenic climate change, warming temperatures in the ***Colorado*** ***River*** Basin are the result of greenhouse gas emissions.[[103]](#footnote-104)101 General warming in the ***Colorado*** ***River*** Basin will continue unless global greenhouse gas emissions are significantly reduced.[[104]](#footnote-105)102 The warmer, drier climate is the result of the combined effects of regular climate variability and anthropogenic climate change.[[105]](#footnote-106)103 While the shift from the wetter, cooler climate of the Southwest, observed in the 1980s and 1990s, towards the hotter, drier **[\*51]**climate observed today can be mostly attributed to internal atmospheric circulation variability, the warming trend in the Southwest is also the result of human climate interventions.[[106]](#footnote-107)104 New Mexico's temperature rose two degrees Fahrenheit from 1970 to 2020, and is projected to continue to rise.[[107]](#footnote-108)105 Surface water flows and groundwater recharge are projected to decline by twenty-five percent over the next half-century.[[108]](#footnote-109)106 This essentially means that these conditions are no longer drought conditions but rather an aridification trend.

Global warming is characterized by an increase in annual ambient temperatures, also typical of a drought, which in turn increases water temperatures and further reduces precipitation.[[109]](#footnote-110)107 Similarly, the Rio Grande through Albuquerque ran dry in 2022 for the first time in four decades.[[110]](#footnote-111)108 Elephant Butte Reservoir dropped to three percent of its total capacity by September of 2021.[[111]](#footnote-112)109 Current estimates show that Rio Grande flows will be reduced by between four and fourteen percent by 2030 and between eight to twenty-nine percent by 2080.[[112]](#footnote-113)110 The Rio Grande Basin will continue to deal with climate change related flow reductions beginning in the San Juan mountains, so water availability in both basins will be universally reduced.[[113]](#footnote-114)111 A heavy snowpack in the winter of 2022-2023 temporarily reduced the need for seven MAF releases at Lee Ferry, but multiple analyses project that ***Colorado*** ***River*** flows will be reduced as a result of both increased evaporation and reduced snowpack.[[114]](#footnote-115)112

**E. Both Federal and State responses to the continued reduction in water availability reflect the limitations of existing management frameworks.**

**[\*52] 1. New Mexico's responses to the reduced water availability in both the *Colorado* and Rio Grande Basins have been effective but insufficient.**

New Mexico has implemented a variety of internal approaches for dealing with water shortages. The OSE manages water rights and allocation using the AWRM initiative, which outlines rules for metering water, local water management by Water Masters within communities, and explicitly developing rules for shortage sharing.[[115]](#footnote-116)113 This program was first implemented in 2004 as an alternative to priority calls, which the OSE recognized would be impossible to implement at the time.[[116]](#footnote-117)114 OSE uses AWRM to manage six unique water basins, called "priority stream systems" which include the Rio Chama basin,[[117]](#footnote-118)115 but notably does not include the MRG basin because of the MRG's unique management under the MRGCD.[[118]](#footnote-119)116

New Mexico also created a Strategic Water Reserve for purposes such as complying with interstate water compacts, like the Compact and the UCRBC.[[119]](#footnote-120)117 The Strategic Water Reserve is implemented and administered by New Mexico's Interstate Stream Commission.[[120]](#footnote-121)118 New Mexico invests in the Strategic Water Reserve fund, which allows the state to buy water rights to use as system water, like that from the San Juan Generating Station, which is kept in-stream to be delivered to Lake Powell.[[121]](#footnote-122)119 In 2020, the state legislature of New Mexico appropriated $750,000 to meet UCRBC obligations.[[122]](#footnote-123)120 More recently, funds from the Strategic Water Reserve were used to secure the ten-year lease on Jicarilla Apache's ***Colorado*** ***River*** water rights.[[123]](#footnote-124)121 In 2023, the Strategic Water Reserve received a $7.5 **[\*53]**million appropriation in the New Mexico House Budget Bill, and another $150,000 in the supplemental appropriations bill.[[124]](#footnote-125)122 This funding will be used to focus efforts on the priority groundwater basins established in 2022, which includes the MRG,[[125]](#footnote-126)123 meeting Endangered Species Act requirements across the state, including in the MRG,[[126]](#footnote-127)124 and meeting compact obligations.[[127]](#footnote-128)125

On a local level, municipalities such as Albuquerque have developed extensive plans for mitigating the effects of water shortages. Municipal water authorities, such as the Albuquerque Bernalillo County Water Utility Authority ("ABCWUA") must obtain water rights and then distribute water to domestic users who do not hold the rights in exchange for payment.[[128]](#footnote-129)126 The Water 2120 Report, sponsored by the ABCWUA, considers water management strategies to ensure water security for Albuquerque and Bernalillo County for the next ninety-eight years.[[129]](#footnote-130)127 The report notes how critical the use of Rio Grande surface water is for the replenishment of the Albuquerque Aquifer.[[130]](#footnote-131)128 The report also notes that under the worst-case scenario for water availability, there exists only enough water for the population of Bernalillo County for another forty years.[[131]](#footnote-132)129 These types of reports further underline the need for more comprehensive water management across the state.

Much of the water in the MRG that is not distributed within the ABCWUA network is managed by the MRGCD. MRGCD has implemented a Water Bank to manage internal aridification stressors. The MRGCD Water Bank was established in 1995 with the goal of protecting water rights of the district itself and landowners within the district, promoting "the beneficial use of water for agriculture," and supporting water **[\*54]**supplies and aquifer recharge.[[132]](#footnote-133)130 The Water Bank applies to lease water that is not currently being put to beneficial use, but was used historically.[[133]](#footnote-134)131 Leases are renewed annually, under a December 2009 amendment to the Rule.[[134]](#footnote-135)132

**2. The Bureau of Reclamation has engaged in a variety of ineffective large-scale actions to mitigate the consequences of reduced water availability in the *Colorado* *River*.**

Reclamation has attempted to mitigate the consequences of continued low flows into Lake Powell since 2007.[[135]](#footnote-136)133 The 2007 ***Colorado*** ***River*** Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead were issued to address the impacts of aridification on the ***Colorado*** ***River*** Basin reservoir operations.[[136]](#footnote-137)134 These guidelines established operational guidelines that reduce releases from Lakes Powell and Mead under certain conditions and attempted to create incentives for Basin states to reduce their water usage voluntarily.[[137]](#footnote-138)135 Twelve years later, in 2019, Reclamation and Upper Basin states executed the Drought Response Operations Agreement, which dictated a change in water releases to maintain certain levels at Lakes Powell and Mead.[[138]](#footnote-139)136 It also established the Drought Contingency Plan program, which required that states develop their own plans for managing water amidst aridification.[[139]](#footnote-140)137 The language of the plan itself, though, indicates its shortsightedness - it is intended to manage drought, a brief period of dryness, rather than respond to the ongoing aridification of the West.

Recently, Reclamation issued the 2022 Drought Response Operations Plan ("DROP") to govern Upper Basin state actions to respond to reduced **[\*55]**flows on the ***Colorado*** ***River***.[[140]](#footnote-141)138 The DROP was in effect for seven months before water levels in Lake Powell dropped so precipitously that an amendment to the DROP was necessary.[[141]](#footnote-142)139

These steps proved insufficient, forcing the Department of the Interior, amid a drumbeat of stark news coverage with pictures of wrecked speedboats emerging from a shrinking Lake Mead,[[142]](#footnote-143)140 to formally acknowledge in August 2022 that it lacked the legal tools necessary to manage the crisis.[[143]](#footnote-144)141 "Given that water levels continue to decline, additional action is needed to protect the System," the Department noted in a Federal Register Notice.[[144]](#footnote-145)142

This has cascading impacts. The existing Compact, the UCRBC, and water management within New Mexico are insufficient to deal with the continued water shortages, as evidenced by the seemingly endless parade of amendments to legislation, new drought mitigation plans, and new deadlines for establishing new stopgap measures.

**F. New Mexico and the rest of the Upper Basin are unprepared for the growing risk of a Lower Basin Compact Call.**

**[\*56]**The first five months of 2023 saw a welter of proposals and counter-proposals in response to the Interior Department's call for suggested approaches to ***Colorado*** ***River*** Basin water supply shortfalls. On January 31, 2023, six ***Colorado*** ***River*** Basin states - Wyoming, ***Colorado***, New Mexico, Utah, Arizona, and Nevada - submitted a proposal to Interior to share ***Colorado*** ***River*** usage reductions in light of continuing aridification.[[145]](#footnote-146)143 This proposed shortage sharing is referred to as the "Consensus-Based Modelling Alternative," which would effectively modify the prior appropriation system for users on the ***Colorado*** ***River*** to share a significant portion of shortages in a system more akin to repartimiento.[[146]](#footnote-147)144 California offered an alternative proposal. In a letter written the day after the six-state letter, California explained that the state would prefer that shortage conditions be enforced through priority calls.[[147]](#footnote-148)145

Then in a compromise, the three Lower Basin states - California, Nevada, and Arizona - offered yet another proposal, attempting to sidestep the need for any federal action by offering up voluntary, compensated water use reductions between 2023 and 2026.[[148]](#footnote-149)146

Under the prior appropriation system, California receives water before Arizona.[[149]](#footnote-150)147 Furthermore, there is significant concern that the solution proposed by California would also hold Upper Basin states accountable for climate change-related reductions in ***Colorado*** ***River*** water deliveries at Lee Ferry.[[150]](#footnote-151)148 New Mexico expressed concerns about being held jointly responsible with the Upper Basin states for a hypothetical in which the agreed-upon amount of water is not delivered to Lower Basin states because of hydrological shortages.[[151]](#footnote-152)149 California's letter indicated an intent **[\*57]**to act in the precise way New Mexico feared.[[152]](#footnote-153)150 In the event of an Article III curtailment resulting from a Compact call, what are the consequences for New Mexico?

The Middle Rio Grande relies heavily on SJCP water from the ***Colorado*** ***River***. There is legal uncertainty, however, around the future of SJCP deliveries in light of the prolonged water shortage on the ***Colorado*** ***River***. As water supplies continues to shrink, there is a possibility that New Mexico will be forced to take significant cuts to their SJCP water allocation. The following analysis investigates what these cuts could look like and examines New Mexico's existing water management framework to understand how to mitigate the hardship of these potential cuts.

**II. Shortages On The *Colorado* *River* May Pose A Serious Threat To San Juan-Chama Project Water Without A More Lenient Interpretation Of Existing Law, Nationally, Or The Implementation Of New Water Management Policy Within The State.**

**A. Existing law has created a complex framework for how shortages impacting New Mexico could be created and how they should be treated.**

**1. San Juan-Chama Authorizing language indicates that New Mexico will need to take reductions on SJCP water deliveries before *Colorado* and potentially the Lower Basin States.**

In 1962, Congress passed an Act authorizing the construction of the Navajo Indian Irrigation Project and the beginning stages of the SJCP.[[153]](#footnote-154)151 The Act states that:

[T]he Secretary shall operate the project so that there shall be no injury, impairment, or depletion of existing or future beneficial uses of water within the State of ***Colorado***, the use of which is within the apportionment made to the State of ***Colorado*** by article III of the Upper ***Colorado*** ***River*** **[\*58]**Basin compact, as provided by article IX of the Upper ***Colorado*** ***River*** Basin Compact and Article IX of the Rio Grande compact.[[154]](#footnote-155)152

This passage references two sections of the UCRBC. Article III of the UCRBC establishes percentages of the annual ***Colorado*** ***River*** flow allocated to each Upper Basin State.[[155]](#footnote-156)153 New Mexico, as noted earlier, is entitled to 11.25 percent of the Upper ***Colorado*** ***River*** Basin ***Colorado*** ***River*** allocation.[[156]](#footnote-157)154 ***Colorado***, in contrast, receives 51.75 percent.[[157]](#footnote-158)155 Although the Upper Basin states are subject to significant ***Colorado*** ***River*** curtailment within the Upper Basin should they exceed their UCRBC percentage allocation, sometimes referred to as the "penalty box,"[[158]](#footnote-159)156 New Mexico may be forced into curtailments before exceeding their full 11.25 percent allocation. This Act is worded such that New Mexico is not only prohibited from exceeding its 11.25 percent cap on ***Colorado*** ***River*** water usage, but New Mexico may also be required to curtail its SJCP water usage if the SJCP water diversions interfere with ***Colorado*** receiving its full 51.75 percent of the Upper ***Colorado*** ***River*** allocation. This language is significant because it permits ***Colorado*** to require New Mexico to reduce its SJCP water use if ***Colorado*** determines that the SJCP diversions are impeding ***Colorado***'s ability to make full use of its ***Colorado*** ***River*** water.

This clause, as it is written in the 1962 SJCP authorizing statute, has never been enforced for two primary reasons. First, releases of SJCP water from Heron Dam are managed by Reclamation, and these releases of SJCP water scale are based on the amount of water in the reservoir.[[159]](#footnote-160)157 San Juan-Chama Contractors, the groups that receive SJCP water, are entitled to their allocation when the water is released from Heron Dam.[[160]](#footnote-161)158 Reclamation calculates how much water is released annually however, it appears that this decision is made without input from New Mexico.[[161]](#footnote-162)159 This means that New Mexico never receives more SJCP water than is available. The second consideration is that ***Colorado*** has never used its entire ***Colorado*** **[\*59] *River*** allocation.[[162]](#footnote-163)160 Consequently, ***Colorado*** has never been determined to require forbearance from New Mexico when ***Colorado*** has a little over a million acre-feet of undeveloped ***Colorado*** ***River*** entitlements.[[163]](#footnote-164)161 In the coming years, however, this status quo could change.

New Mexico is not only beholden to ***Colorado*** for its water allocation - the Act also indicates that all SJCP water is subject to a non-depletion agreement under the ***Colorado*** ***River*** Compact. The Act reads:

The diversion of water for either or both of the projects authorized in this Act shall in no way impair or diminish the obligation of the `States of the upper division' as provided in article III(d) of the ***Colorado*** ***River*** compact `not to cause the flow of the ***river*** at Lee Ferry to be depleted below an aggregate of seventy-five million acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.'[[164]](#footnote-165)162

The wording here is clear - SJCP water is legally bound to Article III's provision regarding the delivery of 7.5 MAF of water to Lower Basin states at Lee Ferry. Though the 1922 Compact did contain a non-depletion provision, it is not clear whether this provision was intended to be a delivery obligation or a usage restriction.[[165]](#footnote-166)163 Said differently, the language of the Compact indicates that Upper Basin states must not deplete the flow, but the Compact is silent on the issue of external factors, such as climate change, causing a flow depletion. It is possible to interpret the 1922 Compact, independently of other law, to mean that the Upper Basin states are not responsible for reducing their water usage to accommodate external factors like climate change. However, language such as that found in the SJCP authorizing statute take the much less generous interpretation of the 1922 Compact and instead hold the Upper Basin states accountable for reducing their water usage as much as is necessary to deliver 7.5 MAF to **[\*60]**the Lower Basin.[[166]](#footnote-167)164 The SJCP authorizing statute's interpretation of Article III in the 1922 Compact is consequential for New Mexico in the face of current ***Colorado*** ***River*** disputes.

As California threatens legal action to enforce their ***Colorado*** ***River*** rights, Upper Basin states, particularly ***Colorado***, are feeling the squeeze. ***Colorado*** has not made full use of its entitlement, and it will likely be unable to do so under current aridification conditions. Due to the 1922 Compact requirements, under Article III, there is debate on whether ***Colorado*** may be required to reduce its ***Colorado*** ***River*** water usage significantly to ensure that the Lower Basin states receive their 7.5 MAF of ***Colorado*** ***River*** water. As ***Colorado*** faces a future in which it must use less and less water, the state may call on New Mexico to use less SJCP water with the goal of shoring up ***Colorado***'s own water supply. If ***Colorado*** determines that New Mexico's usage of SJCP water is infringing on ***Colorado***'s water supply, further limited by an Article III curtailment, ***Colorado*** could use the SJCP authorizing language to require New Mexico to reduce its SJCP water usage.

Enforcement of this forbearance would likely be implemented by Reclamation, which controls releases from Heron Dam.[[167]](#footnote-168)165 Under this regime, it is unclear whether SJCP water would still be shunted to Heron Dam from the San Juan, or whether the diversions would be closed and water would remain in the San Juan. While legal action is possible, given New Mexico and ***Colorado***'s relationship, it seems more likely that this agreement would be established internally. New Mexico should prepare for these conversations with ***Colorado*** and Reclamation now and develop a plan of action to avoid a forced reduction in SJCP water deliveries. New Mexico should also consider the durability of its existing mechanisms for managing water shortages.

**2. The Priority System dictates how individual *Colorado* *River* Basin states, including New Mexico, should reduce their water usage to meet interstate compact obligations.**

This section envisions the consequences of applying prior appropriation principles to continuing water shortages. In light of the shortcomings of prior appropriation, as well as the limitations of the system within New Mexico, we determine that this legal tool is insufficient to meet the future needs of the state.

**[\*61] a. Prior appropriation governs both interstate and intrastate *Colorado* *River* water allocation and has the potential to create a cascade of serious reductions in water deliveries to junior users.**

The system of prior appropriation is embedded into the Law of the ***River***. Article VIII of the 1922 Compact protects all pre-compact rights.[[168]](#footnote-169)166 That means that any water rights holders with priority dates from before 1922 have a legal entitlement to their water over any rights determined by the 1922 Compact. Within each ***Colorado*** ***River*** Basin state, reducing ***Colorado*** ***River*** water usage could ostensibly be accomplished by allowing the water management authority in each state to make priority calls and curtail the most junior users of ***Colorado*** ***River*** water. In New Mexico, this is the Office of the State Engineer.[[169]](#footnote-170)167 This curtailment would require Upper Basin states, like New Mexico and ***Colorado***, to implement internal ***Colorado*** ***River*** cuts with the consequence of leaving more water instream, allowing that water to flow to Lake Powell. Lower Basin states would need to implement similar priority cuts with the goal of leaving water in Lake Mead. Each state would need to develop their own system for implementing these priority calls. Some states, such as ***Colorado***, have existing structures for enforcing priority calls. Other states, like New Mexico, do not officially enforce priority calls.[[170]](#footnote-171)168 When the Upper Basin agreed to the 1922 Compact, they agreed to take on the drought risk. They did not, however, agree to take on ongoing worsening aridification risk. For this reason, some have argued that in light of climate change considerations, a compact call is irrelevant.[[171]](#footnote-172)169

The Priority System also impacts how water is delivered to Lower Basin states in times of shortage. In *Arizona v. California*, the Court recognized many users in California were granted earlier priority dates to the ***Colorado*** ***River*** than users in Arizona.[[172]](#footnote-173)170 In other words, in a management framework that relies exclusively on the Priority System, Arizona ***Colorado*** ***River*** water users will broadly have to take cuts before California does, based on a priority table created in *Arizona v. California*. This raises **[\*62]**some ethical concerns that this paper does not cover,[[173]](#footnote-174)171 and it also has further-reaching consequences.

The Priority System, if implemented on the ***Colorado*** ***River*** as California advocates,[[174]](#footnote-175)172 would likely force Upper Basin states, including New Mexico, to use their State Engineer to make calls on some junior users in order to meet what has been treated as a non-depletion stipulation in the ***Colorado*** ***River*** Compact.[[175]](#footnote-176)173 If California demands that Reclamation enforce California water users' priority to the ***Colorado*** ***River*** against Arizona users, Arizona will, out of necessity, make a call against Upper Basin states to deliver the full allocation downstream. In their December 2022 letters, Arizona explicitly asked that releases from Lake Powell do not drop below a certain mark, so Arizona is already aware of and trying to guard against this risk.[[176]](#footnote-177)174 In contrast, New Mexico has no internal system for enforcing priority calls.[[177]](#footnote-178)175 This cascade of priority calls creates an Article III curtailment in all but name. This result is absurd.[[178]](#footnote-179)176

**3. SJCP water is not governed under the prior appropriation system and is therefore managed outside of prior appropriation, however SJCP water reductions would likely necessitate calls on other water sources.**

When allocations for the SJCP were drafted in the SJCP Authorizing Statute of 1962, the creators were beginning to understand the potential for water shortages in the Rio Grande and ***Colorado*** ***River*** Basins.[[179]](#footnote-180)177 For this reason, SJCP delivery reductions are implemented proportionally between all users.[[180]](#footnote-181)178 Rather than using the priority system for allocation, SJCP was allocated statutorily.[[181]](#footnote-182)179 Consequently, there will never be a priority call for SJCP water because the SJCP allocations exist outside of the prior appropriation system. Instead, priority calls are possible for users **[\*63]**whose SJCP allocation has been reduced so much that the water users' other water rights are insufficient to meet their needs. A loss of SJCP water would create a cascade of water shortages, since users would be drawing more completely on other sources, which would create water stress on allocated water that originates in the Rio Grande Basin. Although SJCP water cannot be called, it is necessary to understand how SJCP shortages could cause internal priority calls.

**4. New Mexico does not enforce priority calls and therefore should not continue formally using the priority system.**

The State Engineer is responsible for issuing and overseeing priority calls.[[182]](#footnote-183)180 Although some users have asked OSE to make priority calls, the State Engineer has never enforced a priority call in New Mexico.[[183]](#footnote-184)181 The Court in New Mexico has held that the State Engineer has no obligation to enforce priority calls, as they are just one tool for managing water allocation.[[184]](#footnote-185)182 Furthermore, the Court pointed out that in many cases in New Mexico, a priority call would be futile because water shortages are not the result of overuse, but rather the result of an arid desert climate.[[185]](#footnote-186)183 The Court has not addressed whether a priority call made due to climate change-induced water shortages would ever be enforceable. Since the state has never implemented a priority call, and has no legal obligation to do so, it is highly unlikely that a priority call in New Mexico will ever be enforced.

Enforcement of a priority call requires that all rights in the stream or basin have been adjudicated.[[186]](#footnote-187)184 Areas like the MRG are unadjudicated and will remain so for the foreseeable future, making priority calls impossible in many parts of the state that will see increased water stress due to SJCP delivery reductions.[[187]](#footnote-188)185 Even in adjudicated basins, however, the State Engineer is not required to enforce priority calls, even though New Mexico state law provides a procedure for enforcing priority calls.[[188]](#footnote-189)186

**[\*64]**While it may be in New Mexico's interest to enforce a priority call on tribes, there are strong moral reasons to avoid this. Tribes would likely suffer serious consequences in the event of a priority call - both Navajo Nation and Jicarilla Apache have post-1950 priority dates due to settlement terms.[[189]](#footnote-190)187 Thus, many non-native water users downstream in northern New Mexico could make a call on tribal water. This is troubling for two main reasons. Firstly, tribes were given only an illusion of choice in agreeing to later priority dates in settlements.[[190]](#footnote-191)188 As was the case for both these tribal groups, development of infrastructure to deliver usable water was contingent on agreement to a later priority date.[[191]](#footnote-192)189 For both Navajo Nation and Jicarilla Apache, this later priority date was almost a hundred years after the date of the federal reservation of the *Winters* right for each reservation.[[192]](#footnote-193)190

This change in priority date has consequences for potential calls on the SJCP allocation. Reductions in delivery affect the Navajo Nation before they affect water delivered to the Rio Grande because, per the settlement, the amount of water transferred via the SJCP was artificially inflated to 135,000 AF to appease the ABCWUA. When shortages are implemented, Navajo Nation's actual water deliveries are reduced and the SJCP water deliveries are not physically reduced until reductions hit the actual 96,000 AF being delivered annually.[[193]](#footnote-194)191 In order to guarantee funding to develop any water right at all, both the Navajo Nation and Jicarilla Apache were essentially forced to accept the later priority dates. It would be unjust to subject tribes to priority calls enforcing priority dates that were determined in objectively unfair circumstances. The second reason that New **[\*65]**Mexico should not enforce a priority call against tribes with later priority dates is that this action runs counter to respecting tribal sovereignty. After hundreds of years of repeated violations of tribal sovereignty, New Mexico has an opportunity to honor tribal sovereignty over tribal land and tribal water.

Finally, New Mexico has no historical or cultural history of priority calls in the way ***Colorado*** or California does.[[194]](#footnote-195)192 Water shortages are often managed collaboratively, as in the repartimiento of acequias or the shortage sharing implemented in the AWRM.[[195]](#footnote-196)193 Even the MRGCD has created a unique system of tiering water priorities that reflects the unique values and history of the region, outside of state control.[[196]](#footnote-197)194 The MRGCD treats MRG Pueblo rights as prior and paramount, since Pueblos have the right to water from time immemorial.[[197]](#footnote-198)195 This water is administered by the Bureau of Indian Affairs.[[198]](#footnote-199)196 The next most senior group are those in the MRGCD who hold individual water rights for usage on their land. Within this group, shortages are shared among the water rights holders. Finally, any remaining water in a shortage year goes toward the water bank water rights.[[199]](#footnote-200)197

In summary, while the state constitution codified the doctrine of prior appropriation, this was done mostly to incentivize Reclamation to fund large-scale water storage projects like Elephant Butte, rather than to actually implement a new water allocation system.[[200]](#footnote-201)198 The Supreme Court of New Mexico has made it clear that it will never require the State Engineer to enforce a priority call and the State Engineer is under no obligation to enforce priority calls.[[201]](#footnote-202)199 In *Bounds v. State*, the Court declared, "[t]he Constitution's priority doctrine establishes a broad priority principle, **[\*66]**nothing more. The prior appropriation provision is not self-executing."[[202]](#footnote-203)200 Despite this, the state constitution still lists the priority system as the mechanism for establishing water rights.[[203]](#footnote-204)201 Without meaningful enforcement requirements, this section of the constitution is effectively mooted. New Mexico uses prior appropriation in name only, and thus the system as it is implemented in other states is ineffective here. Instead, New Mexico should take steps now to codify a shortage-sharing system that more accurately reflects the values of the state and anticipates future shortages. Because any water management authority has an obligation to make policy choices that are in the best interest of its users, the state should further develop its unique system for managing water shortages that balances the expectations of senior water rights holders with the realities of unenforceable priority dates.

**5. It is not currently viable to use Active Water Resources Management administered by the OSE to mitigate the consequences of SJCP losses, but there may be opportunities in the future.**

The state is likely unable to develop basin or district specific protocols under AWRM to manage SJCP shortage losses for two main reasons. First, SJCP water is used in the MRG, an area without existing AWRM controls.[[204]](#footnote-205)202 AWRM implementation is limited to the previously identified priority stream systems and cannot easily be implemented in other systems.[[205]](#footnote-206)203 Therefore, any water losses from SJCP shortages cannot be compensated or managed through AWRM. Second, SJCP water cannot be managed by the OSE since it is federal water rather than state water.[[206]](#footnote-207)204 OSE's only role in SJCP management is to ensure that only SJCP contractors use the SJCP water.[[207]](#footnote-208)205 SJCP contractors, however, may use SJCP water to extinction since it is allocated entirely to the contractors and is not **[\*67]**intended to flow to Elephant Butte.[[208]](#footnote-209)206 Similarly, Albuquerque has strict controls on their senior pumping right plus junior pumping with conjunctive management system, using their SJCP allocation to replenish water.[[209]](#footnote-210)207 Albuquerque, like other SJCP contractors, is allowed to use San Juan-Chama to extinction.[[210]](#footnote-211)208 AWRM does not have mechanisms in place to manage SJCP water in the MRG in a meaningful way.[[211]](#footnote-212)209

While existing AWRM structures are ineffective for responding to SJCP shortages, New Mexico has historically been creative with drafting and implementing accounting swaps which allow the state to manage SJCP water and native water conjunctively. The "storage" of SJCP water in Elephant Butte Reservoir, downstream of its users, is one example.[[212]](#footnote-213)210 When use of the water is called for, San Juan-Chama users simply withdraw native water from the Rio Grande, and an accounting change is made for the water at Elephant Butte, changing its designation to native.[[213]](#footnote-214)211

**6. Acequias provide a model for water shortage sharing within communities.**

Acequia management principles provide a meaningful alternative to prior appropriation. Rather than relying on an adversarial system, in which water right adjudication pits neighbors against each other, acequia systems are managed collaboratively.[[214]](#footnote-215)212 Currently, acequias are considered political subdivisions within the state of New Mexico.[[215]](#footnote-216)213 Unlike water rights in which conveyances are established individually, acequia conveyances (commonly referred to as ditches) are held in a tenancy-in-common by the landowners who use the water conveyed by the ditch.[[216]](#footnote-217)214 This shared water management philosophy runs directly contrary to the rugged individualism epitomized in the prior appropriation system but appears to be much better adapted to a western climate with extreme variability in water availability.

**[\*68]**The legally codified components of acequia management still utilize key components of prior appropriation with some marked differences. The formation of an acequia requires a man-made diversion from a stream, which is a longstanding principle in prior appropriation.[[217]](#footnote-218)215 Additionally, acequias require the use of the water conveyed in the diversion to be put to beneficial use through some type of irrigation.[[218]](#footnote-219)216 These principles appear to be durable across multiple management frameworks, but beyond this, prior appropriation and acequias diverge significantly.

As codified, acequias are protected from many traditional OSE actions. As an example, acequias do not require a permit for changing a point of diversion,[[219]](#footnote-220)217 which contrasts sharply with other water users in New Mexico who must undergo a lengthy permitting process to change points of diversion that involves quantifying how much water is being used at the original point of diversion.[[220]](#footnote-221)218 The general principle requiring permitting for changing points of diversion is intended to protect against new harm to other water users, but it rests on the previously discussed assumption that water users are adverse to one another.

Acequias are also protected from certain OSE actions, including the purchase of acequia water rights for use in New Mexico's strategic water reserve.[[221]](#footnote-222)219 This is significant because it protects acequia water from state acquisition. Within acequias, however, there exists internal water banking. In 2003, the state legislature created a law that permits individual acequias to establish internal water banks.[[222]](#footnote-223)220 These water banks essentially function to redistribute an individual parciante's annual water usage to the rest of the acequia water users in years where the parciante forbears use of their right.[[223]](#footnote-224)221 This is critical because it protects water rights for lands that are not irrigated in a certain year from penalties for nonuse since other parciantes redistribute the water for their beneficial use.

These New Mexico codifications are critical because acequias predate the system of prior appropriation.[[224]](#footnote-225)222 The concept of priority calls was introduced with the genesis of the prior appropriation system. Before prior **[\*69]**appropriation, water shortages in Europe and the Eastern United States were shared evenly across users in the riparian system.[[225]](#footnote-226)223 As in the riparian system, acequias generally share shortages, rather than enforcing priority dates in a system sometimes referred to as "repartimiento."[[226]](#footnote-227)224 While non-impairment of other users is sometimes recognized within individual acequias, it is not codified across the acequia system.[[227]](#footnote-228)225 In the same way that prior appropriation is intended to prevent overuse of stream systems, acequias address overuse by allowing existing acequia communities to object to proposed new uses of water outside or in addition to the existing acequia system. Notably, these systems are based on equity, rather than priority.[[228]](#footnote-229)226

The New Mexico Acequia Association ("NMAA") acknowledges how shortage-sharing principles can avoid the pitfalls of priority calls, stating "acequias on the same stream have avoided priority date issues because they have an established system for rationing or sharing water between different acequias regardless of priority dates."[[229]](#footnote-230)227 In this way, priority calls are entirely replaced.[[230]](#footnote-231)228 These systems are opposed to one of the fundamental principles of western resource management, which focuses on the extraction of resources from the land. The NMAA also states that acequias are generally opposed to "marketing or selling water rights off the acequia,"[[231]](#footnote-232)229 which also runs counter to the capitalist principles under which water is generally managed in the West.

Adopting acequia-based principles for water management would likely require a cultural shift, but anthropogenic climate change is already forcing changes in water management philosophies, regardless of the readiness of the necessary adopters. On April 11, 2023, Reclamation released a draft Supplemental Environmental Impact Statement ("SEIS") that addressed the reduced water levels on the ***Colorado*** ***River***.[[232]](#footnote-233)230 Among the three options proposed by Reclamation, the option that stood out proposed implementing water delivery reductions equally among all of the ***Colorado*** **[\*70] *River*** Lower Basin states (Arizona, Nevada, and California).[[233]](#footnote-234)231 In response, a letter released in May 2023 written by Lower Basin states offered Lower Basin water usage forbearance in exchange for a significant price.[[234]](#footnote-235)232 This short-term solution provides no long-term vision for a future with less water.

The shortage-sharing regime proposed by Reclamation mimics many of the characteristics of the repartimiento practiced by acequias, with one key difference. Whereas repartimiento is agreed-upon by parciantes, this proposed shortage-sharing was met with sharp criticism from the largest municipal water user affected by the draft SEIS.[[235]](#footnote-236)233 The criticism from water users within California notes that any reduction in water uses would cause significant hardship to individual water districts in California.[[236]](#footnote-237)234 Notably, the criticism ignores the consequences of California "getting their way" and making most of Arizona unlivable due to water reductions. The agreement described in the Seven States Letter models shortage sharing to the cost of 1.8 billion dollars, which is not a sustainable long-term solution.[[237]](#footnote-238)235

Acequia water management philosophy rests on the principle of "[d]efend[ing] and protect[ing] our precious water by resisting its commodification and contamination."[[238]](#footnote-239)236 California could take note of this philosophy, particularly the resistance of commodification. In times of water shortage, all water users in a system will be harmed to some degree. The acequia management philosophy understands this and holds that shortages be shared equitably, rather than thrust upon neighboring users. This model is meaningful far outside the boundaries of New Mexico.

**7. New Mexico's existing frameworks are robust, but the state should transition away from using a prior appropriation system and codify a more enforceable water management code that reflects the cultural values of the state.**

**[\*71]**The broad challenges of meeting possible ***Colorado*** ***River*** shortages are mirrored in New Mexico's water management obstacles. Just as prior appropriation does not serve the ***Colorado*** ***River*** Basin broadly, it does not serve New Mexico, as demonstrated in the above analysis. New Mexico has a cultural history of water shortage sharing, which draws a strong contrast from many other western states like California. As water shortages in the West continue to worsen, shortage sharing will be a critical part of water management. While prior appropriation has been durable up until this point,[[239]](#footnote-240)237 stationarity no longer exists. Stationarity is using past data and norms to predict future outcomes.[[240]](#footnote-241)238 However, we have no past data that reflects our current reality. If existing norms are no longer effective for managing water shortages, then existing legal structures will also be ineffective. Prior appropriation reflects a culture of stationarity. Fortunately for New Mexico, within the state, there are flexible systems of water management that allow water users to adapt collaboratively to reduced water availability. Acequia water management presents a community-centric model for shortage sharing, repartimiento. Similarly, the MRGCD also exemplifies a collaborative water governance system that does not rely on priority calls. The New Mexico state legislature should modify prior appropriation as it is codified in the state constitution to eliminate formal priority calls. Instead of priority calls, the state can instead look to these water-sharing models that more accurately reflect the cultural values of the state and share the inevitable economic burdens of reduced ***Colorado*** ***River*** water deliveries.

**Conclusion**

The world's major greenhouse gas producers are not likely to reduce emissions in time to prevent significant global temperature increases.[[241]](#footnote-242)239 This warming will continue to impact water availability in the ***Colorado*** ***River*** Basin, particularly in those areas that are predicted to warm by 2.5 **[\*72]**to 5.5 degrees Fahrenheit by 2070.[[242]](#footnote-243)240 There is no scientific evidence indicating that the aridification in New Mexico will improve,[[243]](#footnote-244)241 which has potentially serious consequences for ***Colorado*** ***River*** deliveries across the northern part of the state. While these risks are troubling, New Mexico will be in a much stronger position if the state acknowledges the weaknesses of its existing ***Colorado*** ***River*** water allocation framework, as well as how those weaknesses will impact vulnerable communities, like tribes.[[244]](#footnote-245)242

Although New Mexico and many other ***Colorado*** Basin States have chosen not to publicly discuss internal risk mitigation for reduced ***Colorado*** ***River*** deliveries because of climate change, the risks to the public remain. The calculus for not releasing or developing these plans relies on the legal argument that if a state, such as New Mexico, demonstrates that there is a way to meet the state's water needs with less water or by reducing the water needs, other states will use these calculations and contingency plans to demonstrate that the well-prepared state does not need the amount of water to which they are currently entitled. Although we understand the concern of this argument, none of the relevant compacts in the Law of the ***River*** list contingencies for water allocation. The current climate crisis was not anticipated by any of the compacts, and thus stationarity is no longer appropriate.[[245]](#footnote-246)243 Though the compacts were necessary for the development of the infrastructure that would follow, the governing laws are insufficient and should not be discussed only behind closed doors. Transparency in communication with both New Mexico residents and other states would set the standard for collaborative interstate water management. Furthermore, it would allow New Mexico water users to prepare and adapt in advance of necessity forcing such measures. New Mexico and the rest of the ***Colorado*** ***River*** Basin is facing a drier, warmer future, but adaptation to these conditions is achievable through a combination of existing water management systems and the development of more robust water management frameworks.

***Colorado*** Natural Resources, Energy & Environmental Law Review

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104. 102National Centers for Environmental Information, *U.S. Climate at a Glance*, NOAA, [*https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/regional*](https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/regional) (last visited Feb. 2, 2022). Ian James, ***Colorado******River*** *losing vast amounts of water due to warming climate, study finds*, LA Times (July 30, 2023, 3:00 AM), [*https://www.latimes.com/environment/story/2023-07-30/study-shows-how-warming-climate-is-sapping-the-****colorado****-****river***](https://www.latimes.com/environment/story/2023-07-30/study-shows-how-warming-climate-is-sapping-the-colorado-river). [↑](#footnote-ref-105)
105. 103Flavio Lehner et al., *supra* note 101. [↑](#footnote-ref-106)
106. 104*Id.* at 6251, 6258-59. [↑](#footnote-ref-107)
107. 105*How Is the Climate Crisis Affecting New Mexico?*, Climate Reality Project (Feb. 11, 2020), [*https://www.climaterealityproject.org/blog/how-climate-crisis-affecting-new-mexico*](https://www.climaterealityproject.org/blog/how-climate-crisis-affecting-new-mexico). [↑](#footnote-ref-108)
108. 106Neil W. Dunbar et al., *Climate change in New Mexico over the next 50 years: Impacts on water resources,* 164 N.M. Bureau Geology & Mineral Res. 1, 28 (2022). [↑](#footnote-ref-109)
109. 107Robert J. Lennox et al., *Toward a Better Understanding of Freshwater Fish Responses to an Increasingly Drought-Stricken World*, 29 Rev. Fish Bio. Fisheries 71, 74 (2019). [↑](#footnote-ref-110)
110. 108*Rio Grande Runs Dry, Then Wet*, NASA Earth Observatory (Aug. 23, 2022), [*https://earthobservatory.nasa.gov/images/150244/rio-grande-runs-dry-then-wet*](https://earthobservatory.nasa.gov/images/150244/rio-grande-runs-dry-then-wet). [↑](#footnote-ref-111)
111. 109Lolly Garcia, *Misjudgments About the Water Level in Elephant Butte Harm Tourism*, New Mexico News (Sept. 10, 2021), https://new-mexico.news/misjudgments-about-the-water-level-in-elephant-butte-harm-tourism/. [↑](#footnote-ref-112)
112. 110Laura Paskus, At the Precipice 131 (2020). [↑](#footnote-ref-113)
113. 111*Id.* at 133-34. [↑](#footnote-ref-114)
114. 112*What impact will the winter snow have on the* ***Colorado******River*** *system*, The Desert Review (Jan. 17, 2023), [*https://www.thedesertreview.com/opinion/letters&#95;to&#95;editor/what-impact-will-the-winter-snow-have-on-the-****colorado****-****river****-system/article&#95;dceb6ed4-96b4-11ed-901d-775829dfb2bb.html*](https://www.thedesertreview.com/opinion/letters&#95). [↑](#footnote-ref-115)
115. 113*Active Water Resource Management* (AWRM), Off. State Eng'r, [*https://www.ose.state.nm.us/AWRM/index.php*](https://www.ose.state.nm.us/AWRM/index.php) (last visited Apr. 17, 2023) *AWRM Rules and Regulations*, Off. State Eng'r, [*https://www.ose.state.nm.us/AWRM/RulesRegs.php*](https://www.ose.state.nm.us/AWRM/RulesRegs.php) (last visited Apr. 17, 2023). [↑](#footnote-ref-116)
116. 114*Active Water Resource Management* (AWRM), *supra* note 113. [↑](#footnote-ref-117)
117. 115*Rio Chama Basin*, Off. State Eng'r, [*https://www.ose.state.nm.us/Basins/Rio*](https://www.ose.state.nm.us/Basins/Rio) Chama/index.php (last visited Apr. 17, 2023). [↑](#footnote-ref-118)
118. 116*Id.* [↑](#footnote-ref-119)
119. 117[*N.M. Stat. Ann. §72-14-3.3*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GJT1-64V8-10KJ-00000-00&context=1516831) (2021). [↑](#footnote-ref-120)
120. 118*Id. see also* N.M. Admin. C. §19-25-14.9 (2005). [↑](#footnote-ref-121)
121. 119[*N.M. Stat. Ann. §72-14-3.3*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GJT1-64V8-10KJ-00000-00&context=1516831). [↑](#footnote-ref-122)
122. 120Samuel Sandoval-Solis et al., *Environmental flows in the Rio Grande - Rio Bravo basin*, 27 Ecology & Soc'y, Mar. 2022, at 15. [↑](#footnote-ref-123)
123. 121Davis, *supra* note 91. [↑](#footnote-ref-124)
124. 122An Act Making General Appropriations and Authorizing Expenditures by State Agencies Required by Law, N.M. H.B. 2, 207 (2023) An Act Making General Appropriations and Authorizing Expenditures Providing an Exception to Legislative Confidentiality, N.M. S.B. 192, 39 (2023). [↑](#footnote-ref-125)
125. 123Letter from Rolf Schmidt-Petersen, Director N.M. Interstate Stream Comm'n, to the Comm'rs for the ***Rivers*** of N.M. and Raul Torres, N.M. Att'y Gen., at 1 (Feb. 23, 2023). [↑](#footnote-ref-126)
126. 124*Id.* at 2. [↑](#footnote-ref-127)
127. 125*Id.* For more information, *see generally* Letter from Rolf Schmidt-Petersen, Director N.M. Interstate Stream Comm'n, to the State Senate Natural Resources Comm. (Feb. 23, 2023). [↑](#footnote-ref-128)
128. 126*See* Albuquerque Bernalillo Cnty. Water Util. Auth., *supra* note 79. [↑](#footnote-ref-129)
129. 127*See generally* Albuquerque Bernalillo Cnty. Water Util. Auth., *supra* note 79. John Fleck was a paid consultant for the creation of this document. [↑](#footnote-ref-130)
130. 128*Id.* at Executive Summary 1. [↑](#footnote-ref-131)
131. 129*Id.* [↑](#footnote-ref-132)
132. 130*Water Bank*, Middle Rio Grande Conservancy Dist., https://www.mrgcd. com/water-bank/ (last visited Nov. 3, 2023). [↑](#footnote-ref-133)
133. 131*Revised Rule No. 23-400 Water Bank Rules*, Middle Rio Grande Conservancy Dist. (Feb. 13, 2017), [*https://www.mrgcd.com/wp-content/uploads/2021/01/Rule&#95;No&#95;&#95;*](https://www.mrgcd.com/wp-content/uploads/2021/01/Rule&#95) 23\_revised\_2017\_1.pdf. [↑](#footnote-ref-134)
134. 132Letter from Janet Jarratt to the Water Bank Lessees (Dec. 21, 2009) (on file with author). [↑](#footnote-ref-135)
135. 133*See generally****Colorado******River*** *Basin Drought Contingency Plans*, U.S. Bureau Reclamation, [*https://www.usbr.gov/dcp*](https://www.usbr.gov/dcp)/ (last updated Jan. 11, 2023). [↑](#footnote-ref-136)
136. 134*See generally* Sec'y Interior, Record of Decision: ***Colorado*** ***River*** Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (2007). [↑](#footnote-ref-137)
137. 135*Id.* at 1. [↑](#footnote-ref-138)
138. 136*Drought Response Operations Agreement*, U.S. Bureau Reclamation, https:// [*www.usbr.gov/dcp/droa.html*](http://www.usbr.gov/dcp/droa.html) (last updated May 31, 2023). [↑](#footnote-ref-139)
139. 137*Id.* [↑](#footnote-ref-140)
140. 138*See* U.S. Bureau Reclamation, 2022 Drought Response Operations Plan (2022). [↑](#footnote-ref-141)
141. 139*See* U.S. Bureau Reclamation, Amendment 1 to Attachment B 2022 Drought Response Operations Plan Operational Adjustments at Glen Canyon Dam (2022). *See also* Press Release, U.S. Bureau Reclamation, Reclamation makes operational adjustments from Lake Powell to protect low level critical elevations (Dec. 2, 2022), [*https://www.usbr.gov/newsroom/news-release/4383*](https://www.usbr.gov/newsroom/news-release/4383) *See also* Press Release, U.S. Dept. Interior, Interior Department Announces Actions to Protect ***Colorado*** ***River*** System, Sets 2023 Operating Conditions for Lake Powell and Lake Mead (Aug. 16, 2022), [*https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-****colorado****-****river****-system-sets-2023*](https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-colorado-river-system-sets-2023). [↑](#footnote-ref-142)
142. 140Henry Fountain, *A New Round of* ***Colorado******River*** *Cuts is Announced*, N.Y. Times (Aug. 16, 2022), [*https://www.nytimes.com/2022/08/16/climate/****colorado****-****river****-lake-mead-water-drought.html*](https://www.nytimes.com/2022/08/16/climate/colorado-river-lake-mead-water-drought.html) (photo by John Locher) Derrick Bryson Taylor, *Third Set of Human Remains Is Found at Lake Mead Since May*, N.Y. Times (Jul. 26, 2022), [*https://www.nytimes.com/2022/07/26/us/lake-mead-human-remains.html*](https://www.nytimes.com/2022/07/26/us/lake-mead-human-remains.html) (photo by Frederic J. Brown). [↑](#footnote-ref-143)
143. 141Press Release, U.S. Dep't Interior, *Interior Department Announces Actions to Protect* ***Colorado******River*** *System, Sets 2023 Operating Conditions for Lake Powell and Lake Mead* (Aug. 16, 2022), [*https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-****colorado****-****river****-system-sets-2023*](https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-colorado-river-system-sets-2023). [↑](#footnote-ref-144)
144. 142Notice of Intent To Prepare a Supplemental Environmental Impact Statement for December 2007 Record of Decision Entitled ***Colorado*** ***River*** Interim Guidelines for Lower Basin Shortages and Coordinated Operations For Lake Powell and Lake Mead, [*87 Fed. Reg. 69042*](https://advance.lexis.com/api/document?collection=administrative-codes&id=urn:contentItem:66WC-KK91-JYYX-63YG-00000-00&context=1516831) (Nov. 17, 2022). [↑](#footnote-ref-145)
145. 143Letter from Wyoming, ***Colorado***, New Mexico, Utah, Arizona, and Nevada to Tanya Trujillo, Assistant Sec'y, Water & Science, U.S. Dep't Interior, and Camille Calimlim Touton, Comm'r, U.S. Bureau Reclamation (Jan. 31, 2023) (on file with author). [↑](#footnote-ref-146)
146. 144*Id.* [↑](#footnote-ref-147)
147. 145Letter from J.B. Hamby, *supra* note 11. [↑](#footnote-ref-148)
148. 146Letter from ***Colorado*** ***River*** Basin States Representatives of Arizona, California, ***Colorado***, Nevada, New Mexico, Utah, and Wyoming to Camille Touton, Comm'r, U.S. Bureau Reclamation (May 22, 2023), [*https://www.doi.gov/sites/doi.gov/files/seven-states-letter-5-22-2023.pdf*](https://www.doi.gov/sites/doi.gov/files/seven-states-letter-5-22-2023.pdf). [↑](#footnote-ref-149)
149. 147***Colorado*** ***River*** Basin Project Act, [*Pub. L. 90-537*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5CCB-R210-01XN-S30D-00000-00&context=1516831), ***82 Stat. 885***, 887 (1968). *See also* [*Arizona v. California, 373 U.S. 546 (1963)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S4X-H3B0-003B-S2D7-00000-00&context=1516831). [↑](#footnote-ref-150)
150. 148*Id.*  [↑](#footnote-ref-151)
151. 149Letter from Estevan López, Governor's Representative of the N.M. Governor, to Genevieve Johnson, Reclamation 2007 Interim Guidelines SEIS Project Manager (Dec. 20, 2022) (on file with author). [↑](#footnote-ref-152)
152. 150Letter from J.B. Hamby, *supra* note 11. [↑](#footnote-ref-153)
153. 15176 Stat. at 96. [↑](#footnote-ref-154)
154. 152*Id.* at 98. [↑](#footnote-ref-155)
155. 153Upper ***Colorado*** ***River*** Basin Compact, Art. III, [*Pub. L. No. 81-37*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5CCB-R1P0-01XN-S056-00000-00&context=1516831), [*63 Stat. 31*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5CCB-R1P0-01XN-S056-00000-00&context=1516831), 32-33 (1949). [↑](#footnote-ref-156)
156. 154*Id.* [↑](#footnote-ref-157)
157. 155*Id.* [↑](#footnote-ref-158)
158. 156Anne Castle & John Fleck, The Risk of Curtailment under the ***Colorado*** ***River*** Compact 10 (2019). [↑](#footnote-ref-159)
159. 157*Rio Chama Reservoir Operations Pilot Overview and Transmittal Report*, U.S. Dep't Interior 5 (July 2022), [*https://www.usbr.gov/watersmart/pilots/docs/riochama/*](https://www.usbr.gov/watersmart/pilots/docs/riochama/) Rio-Chama-Transmittal-Report.pdf. [↑](#footnote-ref-160)
160. 158*Heron Reservoir*, U.S. Bureau Reclamation (Jan. 29, 2018), https://www.usbr. gov/uc/albuq/water/SanJuanChama/Reservoirs/heron\_indx.html. [↑](#footnote-ref-161)
161. 159*Id.* [↑](#footnote-ref-162)
162. 160***Colorado*** uses 5.3 MAF of water annually and can allocate 3.88 MAF each year from the Upper ***Colorado*** ***River*** Basin Compact (which is 51.75 percent of the Upper Basin's 7.5 MAF). *SeeWater Supply*, CSU ***Colo.*** Water Knowledge (last visited Nov. 10, 2023) *see also*, 63 Stat. at 32-33. ***Colorado*** also acknowledges that only 40 percent of their annual water usage comes from the ***Colorado*** ***River***. *See****Colorado******River*** *Basin*, ***Colo.*** Water Conservation Bd., [*https://cwcb.****colorado****.gov/****colorado****-****river***](https://cwcb.colorado.gov/colorado-river) (last visited Nov. 9, 2023). 40 percent of 5.3 MAF is 2.12 MAF. Using this math, we see that ***Colorado***'s ***Colorado*** ***River*** usage is 2.12 MAF out of their 3.88 MAF allocation. [↑](#footnote-ref-163)
163. 161Using the above calculations, ***Colorado*** has about 1.76 MAF of their unused ***Colorado*** ***River*** allocation annually. [↑](#footnote-ref-164)
164. 16276 Stat. at 102. [↑](#footnote-ref-165)
165. 163***Colorado*** ***River*** Compact, Art. III(d) (1922). [↑](#footnote-ref-166)
166. 164Doug Kenney et al., *Rethinking Vulnerability on the* ***Colorado******River***, J. of Contemp. Water Rsch. & Educ. 144, 5 (2010). [↑](#footnote-ref-167)
167. 165*Heron Reservoir*, U.S. Bureau Reclamation, [*https://www.usbr.gov/uc/albuq/*](https://www.usbr.gov/uc/albuq/) water/SanJuanChama/Reservoirs/heron\_indx.html (last updated Jan. 29, 2018). [↑](#footnote-ref-168)
168. 166***Colorado*** ***River*** Compact, Art. VIII (1922). [↑](#footnote-ref-169)
169. 167N.M. Office State Eng'r Interstate Stream Comm'n, https://www.ose.state. nm.us/ (last visited Nov. 10, 2023). [↑](#footnote-ref-170)
170. 168[*Bounds v. State ex rel. D'Antonio, 306 P.3d 457 (N.M. 2013)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5912-RXJ1-F04J-5003-00000-00&context=1516831). [↑](#footnote-ref-171)
171. 169***Colorado*** Law, *43rd Annual* ***Colorado*** *Law Conference on Natural Resources - Day 1, Part 1*, YouTube (June 19, 2023), [*https://youtu.be/egKHhNzk3Hk?t=3290*](https://youtu.be/egKHhNzk3Hk?t=3290). [↑](#footnote-ref-172)
172. 170[*Arizona v. California, 373 U.S. 546, 592 (1963)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S4X-H3B0-003B-S2D7-00000-00&context=1516831). [↑](#footnote-ref-173)
173. 171*See* John Fleck, *California Wants to Keep (Most of) the* ***Colorado******River*** *for Itself*, N.Y. Times (Feb. 23, 2023), [*https://www.nytimes.com/2023/02/23/opinion/****colorado****-****river***](https://www.nytimes.com/2023/02/23/opinion/colorado-river) -california-arizona-drought.html. [↑](#footnote-ref-174)
174. 172Letter from J.B. Hamby, *supra* note 11. [↑](#footnote-ref-175)
175. 173*See Id.* at 3-4. [↑](#footnote-ref-176)
176. 174Re: Notice of Intent to Prepare a Supplemental Environmental Impact Statement, Ariz. Dep't. Water Resources & Central Ariz. Project 4-5 (Dec. 20, 2022). [↑](#footnote-ref-177)
177. 175*See* [*State ex rel. Reynolds v. Lewis, 394 P.2d 593 (N.M. 1964)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S3J-WF70-003D-D0F0-00000-00&context=1516831). [↑](#footnote-ref-178)
178. 176For a legal review of the Absurd Results Doctrine, *see* John F. Manning, *The Absurdity Doctrine*, [*116 Harv. L. Rev. 2387 (2023)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:48T6-3TJ0-00CV-50GX-00000-00&context=1516831). [↑](#footnote-ref-179)
179. 177*See generally* R.L. Nace & E.J. Pluhowski, U.S. Geological Surv., Drought of the 1950's - with Special Reference to the Midcontinent (1965). [↑](#footnote-ref-180)
180. 17876 Stat. at 96. [*43 U.S.C. §620*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:8SDD-0HD2-8T6X-73SX-00000-00&context=1516831) (2009). [↑](#footnote-ref-181)
181. 17976 Stat. at 96, 100. [↑](#footnote-ref-182)
182. 180Merta, *supra* note 20, at 10-2. [↑](#footnote-ref-183)
183. 181The OSE does require forbearance on the Upper Chama, where farmers may not use the SJCP water flowing through the Chama. Similarly, the OSE manages shortages in some basins through AWRM. *Id.* at 10-5. [↑](#footnote-ref-184)
184. 182*See* [*Bounds, 306 P.3d at 457*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5912-RXJ1-F04J-5003-00000-00&context=1516831). [↑](#footnote-ref-185)
185. 183*Id.* [↑](#footnote-ref-186)
186. 184Merta, *supra* note 20, at 10-2. [↑](#footnote-ref-187)
187. 185Carol Romero-Wirth & Susan Kelly, *Water Rights Management in New Mexico and Along the Middle Rio Grande: Is AWRM Sufficient?* Utton Transboundary Resource Ctr., Nov. 2012, at 1. [↑](#footnote-ref-188)
188. 186Merta, *supra* note 20, at 10-2. [↑](#footnote-ref-189)
189. 187U.S. Bureau Reclamation, *supra* note 87, at 5.4-4. [↑](#footnote-ref-190)
190. 188To better illustrate this point, the UN Declaration on the Rights of Indigenous Peoples granted indigenous peoples the right to free, prior, and informed consent, which is given without manipulation, after advance communication on interaction in question and distribution of all relevant information, and through the decision-making process that is customary to the indigenous group. *Free, Prior and Informed Consent*, Food & Agricultural Org. U.N., [*https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/*](https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/) (last visited Jul. 4, 2023). The settlements discussed here likely do not meet the standards established by the UN because of the serious power imbalance between the tribes in question and the governmental entities writing and approving the settlements. [↑](#footnote-ref-191)
191. 189Judith E. Jacobson, *The Navajo Indian Irrigation Project and Quantification of Navajo Winters Rights*, 32 Nat. Res. J. 825, 829 (1992). [↑](#footnote-ref-192)
192. 190*See generally* U.S. Bureau Reclamation, *supra* note 87 *San Juan* ***River*** *Basin in New Mexico Navajo Nation Water Rights Settlement Agreement*, U.S. Bureau Reclamation (Apr. 19, 2005), [*https://www.usbr.gov/uc/progact/navajo-gallup/pdf/NavStlmt/Nav*](https://www.usbr.gov/uc/progact/navajo-gallup/pdf/NavStlmt/Nav) SanJuanStlmtAgr.pdf. [↑](#footnote-ref-193)
193. 191*Navajo Nation Water Rights Settlement Agreement, supra* note 190 (exemplifying a provision that is deeply detrimental to the tribe in question, the Navajo Nation, and raises questions of freely given consent). [↑](#footnote-ref-194)
194. 192Merta, *supra* note 20, at 10-5, *but seeAdministrative Calls - Active*, ***Colo.*** Div. Water Res., [*https://dwr.state.****co****.us/Tools/AdministrativeCalls/Active*](https://dwr.state.co.us/Tools/AdministrativeCalls/Active) (last visited Apr. 17, 2023) (demonstrating the active calls in ***Colorado*** currently). [↑](#footnote-ref-195)
195. 193Brigette Buynak et al., *Acequias*, 2015 Water Matters! 4-3. [↑](#footnote-ref-196)
196. 194*See* [*N.M. Stat. Ann. §73-14-50*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GK21-64V8-14FK-00000-00&context=1516831) (noting the MRGCD's authority to distribute water as they see fit) *see also generally* Middle Rio Grande Conservancy District, Water Conservation Policy of the Middle Rio Grande Conservation District (2020) (This system, as explained, is based on the authors' observations). [↑](#footnote-ref-197)
197. 195*Aadmodt Water Rights Settlement*, N.M. Off. State Eng. Legal Dep't, [*https://www.ose.state.nm.us/Legal/settlements/Aamodt/aamodt.php*](https://www.ose.state.nm.us/Legal/settlements/Aamodt/aamodt.php) (last visited Apr. 17, 2023). [↑](#footnote-ref-198)
198. 196*Water Distribution Policy of the Middle Rio Grande Conservancy District*, N.M. Att'y Gen. 1 (2012), [*https://www.nmag.gov/wp-content/uploads/2022/09/2012-MRGCD*](https://www.nmag.gov/wp-content/uploads/2022/09/2012-MRGCD) -Water\_Distribution\_Policy\_Final.pdf. [↑](#footnote-ref-199)
199. 197Revised Rule 23, Middle Rio Grande Conservancy Dist. (May 29, 2009) (on file with author). [↑](#footnote-ref-200)
200. 198Buynak et al., *supra* note 193, at 4-4. [↑](#footnote-ref-201)
201. 199[*Bounds, 306 P.3d at 468*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5912-RXJ1-F04J-5003-00000-00&context=1516831). [↑](#footnote-ref-202)
202. 200[*Id. at 468-69*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:5912-RXJ1-F04J-5003-00000-00&context=1516831). [↑](#footnote-ref-203)
203. 201Buynak & Oglesby, *supra* note 19, at 1-1. [↑](#footnote-ref-204)
204. 202*Active Water Resource Management (AWRM)*, Office of the State Eng'r, [*https://www.ose.state.nm.us/AWRM/index.php*](https://www.ose.state.nm.us/AWRM/index.php) (last visited Nov. 9, 2023) (outlining those areas subject to AWRM control, excluding the MRG). [↑](#footnote-ref-205)
205. 203*See, e.g.,* N.M. Code R. §§19.25.13.11-12 (2004). [↑](#footnote-ref-206)
206. 204Kevin G. Flanigan & Amy I. Haas, [*The Impact of Full Beneficial Use of San Juan-Chama Project Water by the City of Albuquerque on New Mexico's Rio Grande Compact Obligations, 48 Nat. Res. J. 371, 382-83 (2008)*](https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:4XK3-PNW0-01TH-N00K-00000-00&context=1516831). [↑](#footnote-ref-207)
207. 205This is primarily an issue on the Upper Rio Chama, where acequias and farmers must not take SJCP flows that are transferred to the Rio Chama. While these farmers do not have a claim to SJCP water, some chafe at the reality that it flows through the Rio Chama and thus looks like Rio Chama water, rather than SJCP water. *See generally* Flanigan & Haas, *supra* note 204. [↑](#footnote-ref-208)
208. 206*See* Water 2120: Securing Our Water Future Vol. 1, Chapters 3, 10 (Sept. 2016), [*https://www.abcwua.org/wp-content/uploads/Your&#95;Drinking&#95;Water-PDFs/Water&#95;*](https://www.abcwua.org/wp-content/uploads/Your&#95) 2120\_Volume\_I.pdf. [↑](#footnote-ref-209)
209. 207*Id.* at Appendix 3.A SP-4830. [↑](#footnote-ref-210)
210. 208*Id.*  [↑](#footnote-ref-211)
211. 209*Id.*  [↑](#footnote-ref-212)
212. 210[*Jicarilla Apache Tribe v. United States, 657 F.2d 1126, 1131 (10th Cir. 1981)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S4X-0BM0-0039-W058-00000-00&context=1516831) ("Bureau of Reclamation signed an agreement with the City of Albuquerque under which the Bureau agreed to deliver all of the city's share of the San Juan-Chama Project water for storage in Elephant Butte Reservoir.") [↑](#footnote-ref-213)
213. 211Water 2120, *supra* note 206. [↑](#footnote-ref-214)
214. 212*See* [*Snow v. Abalos, 140 P. 1044, 1047 (N.M. 1914)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S3J-WVV0-003D-D1DJ-00000-00&context=1516831). [↑](#footnote-ref-215)
215. 213[*N.M. Stat. Ann. §73-2-28*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GK11-64V8-151V-00000-00&context=1516831) (1978). [↑](#footnote-ref-216)
216. 214*See* Olson v. H & B Properties, Inc[*., 882 P.2d 536 (N.M. 1994)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S3J-W1N0-003D-D1GB-00000-00&context=1516831)[*Snow v. Abalos, 140 P. at 1044*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S3J-WVV0-003D-D1DJ-00000-00&context=1516831). [↑](#footnote-ref-217)
217. 215N.M. Acequia Ass'n, Acequia Governance Handbook 1 (2014). *See* [*Heise v. Schulz, 204 P.2d 706 (Kan. 1949)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S12-2MG0-000G-T3W0-00000-00&context=1516831). [↑](#footnote-ref-218)
218. 216*Id.* at 1. [↑](#footnote-ref-219)
219. 217[*N.M. Stat. Ann. §73-2-63*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GK11-64V8-1535-00000-00&context=1516831) (1978). [↑](#footnote-ref-220)
220. 218*See generally* N.M. Off. of the State Eng'r, Point of Diversion/Well ID Tag User Guide (2018). [↑](#footnote-ref-221)
221. 219[*N.M. Stat. Ann. §72-14-3.3*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GJT1-64V8-10KJ-00000-00&context=1516831) (2007). [↑](#footnote-ref-222)
222. 220N.M. Acequia Ass'n*, supra* note 215, at 12. [↑](#footnote-ref-223)
223. 221[*N.M. Stat. Ann. §73-2-55.1*](https://advance.lexis.com/api/document?collection=statutes-legislation&id=urn:contentItem:5BXH-GK11-64V8-152W-00000-00&context=1516831)(2003). [↑](#footnote-ref-224)
224. 222*SeeAcequia Culture*, N.M. State Univ., [*https://alcaldesc.nmsu.edu/projects*](https://alcaldesc.nmsu.edu/projects)/ acequia (last visited Aug. 31, 2023). [↑](#footnote-ref-225)
225. 223*See generally* [*State ex rel. Reynolds v. Miranda, 493 P.2d 409 (N.M. 1972)*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S3J-WB50-003D-D3GH-00000-00&context=1516831). [↑](#footnote-ref-226)
226. 224Paula Garcia, *Repartimiento: Water Sharing in Times of Drought*, N.M. Acequia Ass'n (Mar. 20, 2012), [*https://lasacequias.org/2012/03/20/repartimiento/*](https://lasacequias.org/2012/03/20/repartimiento/). [↑](#footnote-ref-227)
227. 225N.M. Acequia Ass'n*, supra* note 215, at 5. [↑](#footnote-ref-228)
228. 226N.M. Acequia Ass'n*, supra* note 215, at 12. [↑](#footnote-ref-229)
229. 227*Id.* at 2. [↑](#footnote-ref-230)
230. 228*Id.* [↑](#footnote-ref-231)
231. 229*Id*. at 12. [↑](#footnote-ref-232)
232. 230*Interior Department Announces Next Steps to Protect the Stability and Sustainability of* ***Colorado******River*** *Basin*, U.S. Bureau Reclamation (Apr. 11, 2023), https://www. usbr.gov/newsroom/news-release/4480. [↑](#footnote-ref-233)
233. 231*Supplemental Environmental Impact Statement for Near-term* ***Colorado******River*** *Operations*, U.S. Bureau Reclamation (Apr. 11, 2023), [*https://www.usbr.gov/ColoradoRiverBasin/SEIS.html*](https://www.usbr.gov/ColoradoRiverBasin/SEIS.html). For further reading, see Christopher Flavelle, *A Breakthrough Deal to Keep the* ***Colorado******River*** *From Going Dry, for Now*, N.Y. Times, [*https://www.nytimes.com/2023/05/22/climate/****colorado****-****river****-deal.html*](https://www.nytimes.com/2023/05/22/climate/colorado-river-deal.html) (May 25, 2023). [↑](#footnote-ref-234)
234. 232Letter from the ***Colorado*** ***River*** Basin States Representatives of Arizona, California, and Nevada, to Camille Touton, Comm'r, U.S. Bureau Reclamation (May 22, 2023) (on file with author). [↑](#footnote-ref-235)
235. 233Rebecca Kimitch, *Metropolitan issues statement on release of draft SEIS for near-term* ***Colorado******River*** *operations*, Business Wire *(*Apr. 11, 2023, 6:01 PM), https://www. businesswire.com/news/home/20230411005981/en/Metropolitan-issues-statement-on-release-of-draft-SEIS-for-near-term-***Colorado***-***River***-operations. [↑](#footnote-ref-236)
236. 234*Id.* [↑](#footnote-ref-237)
237. 235Letter from [***Colorado******River*** *Basin States Representatives of Arizona, California,* ***Colorado****, Nevada, New Mexico, Utah, and Wyoming, supra*](https://advance.lexis.com/api/document?collection=cases&id=urn:contentItem:3S4X-H3B0-003B-S2D7-00000-00&context=1516831) note 146. [↑](#footnote-ref-238)
238. 236N.M. Acequia Ass'n*, supra* note 215, at 1-2. [↑](#footnote-ref-239)
239. 237Reed Benson points out, however, that many Western states have been moving away from prior appropriation over the last 70 years to accomplish other state goals. For an in-depth analysis of this shift, *see* Reed D. Benson, *Alive but Irrelevant: The Prior Appropriation Doctrine in Today's Western Water Law*, 83 Univ. ***Colo.*** L. Rev. 675, 709 (2012). [↑](#footnote-ref-240)
240. 238P.C. D. Milly et al., *Stationarity is Dead: Whither Water Management?* 319 Science 573 (2008). [↑](#footnote-ref-241)
241. 239*Urgent climate action can secure a liveable future for all*, IPCC (Mar. 20, 2023), [*https://www.ipcc.ch/2023/03/20/press-release-ar6-synthesis-report/*](https://www.ipcc.ch/2023/03/20/press-release-ar6-synthesis-report/). [↑](#footnote-ref-242)
242. 240*See generally* Greg Garfin, *Southwest*, Nat'l Climate Assessment, https:// nca2014.globalchange.gov/report/regions/southwest (last visited Apr. 17, 2023). [↑](#footnote-ref-243)
243. 241*Id.* [↑](#footnote-ref-244)
244. 242Castle & Fleck, *supra* note 156. [↑](#footnote-ref-245)
245. 243P.C.D. Milly et al., *Stationarity Is Dead: Whither Water Management?*, 319 Science 573 (2008). [↑](#footnote-ref-246)