

## Republican River Basin

The Republican River must meet compact obligations in two ways, (1) overall for Colorado and (2) on each of the individual tributaries of the Republican River that leave Colorado: the Arikaree, North, and South Forks. In addition to the need to come into compliance with the compact, irrigators in the basin are mining the groundwater, contributing to the decline of the Ogallala Aquifer.



Colorado

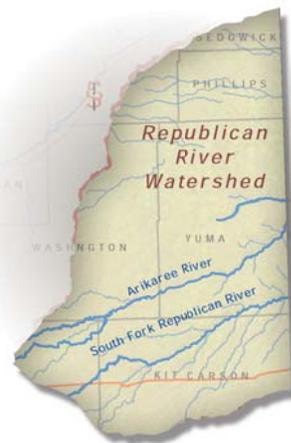
### Initial Steps Towards Compliance

The Republican River Compact, ratified in 1943, was established to provide access to federal funding for flood control reservoirs and irrigation projects. Apportionment of water between the states was based on 1929-1938 flows, with the potential for adjustments. The advent of intensive groundwater pumping, beginning in the 1950s, began the process of taking Colorado out of compliance. However, the negative impacts of this development didn't hit water users in Colorado until 2000, in the aftermath of a lawsuit filed by Kansas against Nebraska. The Special Master, appointed by the US Supreme Court to administer the compact, required that compact accounting must include groundwater withdrawals that impacted surface flows.

Drawing lessons from the lawsuit in the Arkansas Basin, in 2004 the Colorado legislature created the Republican River Water Conservation District (RRWCD) to help bring the state into compliance with the compact at a more local level. The RRWCD began acquiring and retiring wells using federal conservation programs.

However, from 2003-2007, Colorado water users were still pumping 10,000 acre-feet/year above their allocation, with the effects on the river compounded by the delayed effects of past depletions. The RRWCD built a pipeline to deliver pumped water from retired wells located in a deep part of the aquifer to just above the measurement gage near the Nebraska state line, a short-term, "band-aid" compliance measure that brought the state overall into compliance. This temporary measure allows pumping to continue as the RRWCD works to retire wells, providing time to build "softer" landings for many well users.

Well totalizing flow meters were installed in 2010. The RRWCD has a Water Use Fee that is assessed per acre of irrigated land. The funds generated are used to compensate people who retire wells. The RRWCD does not have jurisdictional authority and cannot set limits set on the quantity of water that could be withdrawn. The Colorado Division of Water Resources and groundwater management districts have that authority. To date, pumping reductions are still insufficient to prevent groundwater decline.



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### Subsequent Measures

In 2011 the Colorado State Engineer, after attempts to negotiate with Kansas were rejected, was forced to order the draining of Bonny Reservoir, the only recreational water body in the region. Both the Arikaree and the North Fork drain into Nebraska and generally remain in compliance. The South Fork, however, enters Kansas, and was not in compliance. Evaporation and seepage losses from Bonny Reservoir, on the South Fork, had been charged against Colorado's allocation and Kansas would only accept additional water in the stream, which forced the State Engineer to call for Bonny to be drained.

In 2016, a series of agreements with Kansas and Nebraska gave Colorado 100% credit for the water delivered to the North Fork Republican by the Compact Compliance Pipeline. This resolution also required the retirement of an additional 25,000 acres of irrigated land along the South Fork. The process of retiring this land is still underway.

### Experiences

Interviewees in the Republican Basin described the painful experience of coming into compliance with their compact, after feeling "surprised" by the compact suit. While the RRWCD was created to help manage curtailment, well users felt little local control over how to manage initial compliance and little trust in the process, which hampered their ability to work together. The RRWCD has worked to overcome these challenges and is currently focused on how to soften the blow of continued well retirements to bring the

South Fork into compliance and find longer-term solutions for overall compliance and the sustainability of the basin's communities.

### **Hazards of Delaying Action/ Going to Court**

A water manager in the Republican River Basin recalled that water users weren't even aware of the compact as initial compliance measures kicked off. "Back in 2004, 2005, 2008, the compact and the Republican River District were not very well-received. Nobody knew about the compact."

Farmers described the experience as a tremendous loss and a feeling of being "broad-sided with no warning." Some interviewees explained that it was impossible to imagine a future in which things would change, because they did not have to consider their impact to the aquifer before, and there was a sense that there was enough water because it had not previously been an issue.

Farmers also noted that there were missed opportunities for less painful measures due to a lack of understanding of the role the state would take in the process. The belief that things probably wouldn't change considerably was upended when the state made it clear that compliance would be achieved over everything – including what people perceived as their "private property rights." Some described the delay caused by resistance to the state's actions as potentially leading to solutions enacted by the state that were more harmful to them in the long run than if water users had taken a more proactive stance early on to help shape solutions.

### **Confronting Limits**

One interviewee described the challenge facing the Republican as twofold, stating that there was compact compliance – or wet water at the state line – but that the bigger threat to farming and the communities in the basin was groundwater depletion. "How do we sustain nature and economic activity beyond simply complying with the compact?" this person asked. The limits faced by irrigators in the Republican Basin are comprised not only of limits imposed by compact compliance, but also the limited lifespan of a shrinking aquifer.

Initially told that retiring 30,000 acres would bring the basin and the state into compliance with the compact, the RRWCD focused on retiring that amount of ground with help from federal conservation programs. When they got close to that target, however, improved analysis indicated that more drastic action would need to be taken.

One interviewee recounted what it felt like when the RRWCD's water engineer reported that new analysis indicated that to achieve compliance, they would need to shut down every well (except for household wells) in the district for 30 years. "That would implode everything. Everything would have to go back to pasture. We wouldn't be able to sustain anything." The feeling of sacrificing to reach a goal, only to discover it wouldn't be enough, was disheartening to many. Based on the new analysis, the RRWCD increased the irrigated acreage fee, instituted a municipal well and water storage fee, and built the Compact Compliance pipeline to deliver water to the North Fork Republican as the fastest way to overall compliance.

The RRWCD is focusing on well retirement to address both compact compliance and groundwater depletion. A person involved with the district explained why they have taken on both tasks.

 *We have got to prolong the lifespan of our economic engine out here. It was state and federal law that we had to abide by the compact, but we will not survive in this area if we don't slow down the depletions.*

Multiple interviewees explained that farmers with heavier soils could shift or return to dryland farming, but they also pointed out that this would support many fewer employees and businesses than irrigated agriculture and bring in much less tax funding to local governments. Some interviewees talked about the fear of planning for the long-term, not knowing what the future will hold in terms of compliance and aquifer supplies. However, this awareness has led some farmers to consider and others to try more drought-resistant crops.

A water manager noted that a growing wind energy sector could provide an alternate source of economic support, but, “we’ve got to elongate this resource as long as possible, so our communities can adapt to being without irrigated tax dollars or what irrigation can bring into our communities.”

### **Scaffolding for Proactive Solutions**

Social and organizational scaffolding to support the ability to create a proactive, locally-developed solutions was minimal in the Republican Basin when the lawsuit first emerged. Previous collective organizational experience was lacking, as was a general awareness or knowledge of the compact. An additional challenge facing the RRWCD is the separateness of each of the tributaries of the Republican and the fact that the area did not have a common cause to unify around.

### **Organizational Challenges**

State legislators created the RRWCD to help with compact compliance. However, interviewees reported that its initial formation and efforts to organize action towards compact compliance were rushed and thus, public acceptance of the RRWCD and its ability to help develop flexible local control were hampered.

Members of the RRWCD board are not democratically elected, but rather chosen and approved by the various entities represented on the board. As one interviewee noted, “[The RRWCD] struggled... the Board had to make tough decisions that were not a vote of the people.” This has led to a sense that the board is not always accountable to the population it represents. However, it also insulates the members when they must make unpopular decisions.

Also, in the haste to create the RRWCD, important components of its mission were left out. According to interviewees, it has taken time to build out the district to better meet the needs of its constituents and achieve its objectives, as well as identify objectives that were missing in the initial haste to create it. For example, one interviewee explained that the district’s mandate was originally limited to compact compliance and did not include conservation, although the district has since added conservation actions.

Further undermining the RRWCD’s effectiveness was the fact that its initial boundaries left out wells that drew from the aquifer, but lay outside the geographic basin. This required a later adjustment to bring in irrigators who had been contributing to the compliance problem but weren’t covered by previous compliance measures or fee requirements.

### **Cultivating Public Engagement**

Once the RRWCD was formed, there was a considerable amount of work to be done to develop understanding and implications of the compact. “It took a lot of education,” said one interviewee.

“*...public meetings, people coming to the meetings, complaining. I’m amazed how many times [the RRWCD] had to tell the same story to one person. And you may have to tell that same person three or four different years in a row the same reasons that we have to be in compact compliance.*”

Educating didn’t necessarily have an immediate impact, according to one interviewee, but repeating the same message clearly over time helped many well users understand the few options they still had and the opportunity to capitalize on the remaining opportunities for local control.

Creating public meeting spaces to express frustration and anger was just as important. These appear to have assisted in building cohesion and giving space for people to react to this perceived dramatic change. Over time, this process built acceptance as it became more clear that there were few other options.

Working to create a sense of community togetherness is a challenge in the area due to the geographic separation of the three tributaries and the lack of perceived interconnection that well pumping creates when compared to mutual ditch operations. The RRWCD has spent time working to build a sense of cohesion amongst the different tributaries. One interviewee, who works in water management in the area, elucidated.

“Unification is a huge thing.... We're all in this together. The state engineer has made it vividly clear that if 'you don't continue to be in compact compliance, I will shut down the basin.' It's not one mile, three miles [from the river] it's the entire basin. That makes us all work together.

In spite of different conditions in each of the tributaries, the RRWCD operates under a belief that cohesion amongst disparate elements will help in working towards long-term compliance. The work on unification within the Basin builds scaffolding for future efforts at proactive solutions because the residents of the Basin have a more developed sense of togetherness, interconnection, and recognition of a common purpose: avoiding a total shut down.

### Relationships and Trust

With a perceived abrupt start to compact compliance and little foreknowledge of the compact among the general community, there was little initial trust in the process and the RRWCD. The fledgling district implemented several actions to build trust, including creating space for community members to vent their frustration, repeatedly explaining the implications of the compact and emphasizing the importance of unity within the Basin to focus on the common enemy: total shut down. Operating transparently and helping to coordinate tangible projects have also built trust and fostered relationships.

An interviewee involved with the RRWCD spoke about the high value the district places on transparency, stating,

“We have got to let people know what we're doing. And every action that is taken is taken during a public comment or during a public meeting. There's very few times in a board meeting we'll have an executive session – only if there is no other option.

Working on projects with visible, immediate impacts and improvements together has also enhanced trust. One interviewee described the importance of these activities, stating,

“Trust building is based on tangible stuff. You gotta go out and do the tangible, maybe that's not super exciting or super cool and it's only got a marginal contribution to the solution, but it's got a huge contribution to the relationships you need.

This interviewee provided several examples of tangible projects and events that built trust and relationships. Early on in the process of working towards compliance, a trusted person recommended working with a well-known environmental group based on his experience with them in another context. This led to an initial tenuous partnership between the RRWCD and the environmental organization that produced positive outcomes for farmers and compact compliance. An additional, surprising outcome of this partnership, according to one interviewee, was a building of confidence that led to working towards more daunting goals.

An interviewee involved in the process of building partnerships provides some cautions.

“You can only build those relationships if everybody is willing to take some initial steps and try something different and new.... [The well users in the Republican] are all at real risk economically, community wise, socially and we've been able to do some things that matter and build trust but you know, communities need to step up or they won't have the partners and relationships to find the big solutions.

The tangible work to build relationships has begun to produce real outcomes. In response to the draining of Bonny Reservoir and a profound sense of loss in the community, several local landowner groups and organizations began working to improve conditions on all three tributaries. Work has been done to remove invasive vegetation, like Russian Olive trees, in alluvial areas. Groups are also working together to apply for grants to rejuvenate sections of Bonny Reservoir, restore stream flow, and contribute to compact compliance.

For the current effort to retire enough additional irrigated acreage to get into compact compliance and the longer-term effort to prolong the viability of the aquifer, a more locally-driven approach seems to hold some promise. One interviewee pointed to a joint taskforce made up of representatives from all of the groundwater districts in the RRWCD that is working to create a template that can be used for reducing depletions in all the groundwater districts, but tweaked by each one to match local conditions.

## Measurement

Like in the other basins in this report, well users all initially resisted measurement devices. This interviewee, who works in water management, describes what happened in the Republican.

*“Initially the state said you will have measurement devices installed on all of your wells. A lot of people pulled back... ‘We don’t want the government knowing what we are doing! We don’t want you in our business, we aren’t hurting anything, it’s our water.’ Well, no, it actually belongs to the state.”*

However, measurement is not just about data collection and perceived government intrusion. The disagreement over measurement devices is a proxy for contention around who can own a resource that is accessible to multiple parties and individuals. Installing a measurement device brings awareness to usage rates and practices by the well owner. Some interviewees described how, though they view the measurement as a necessary evil, it has made them far more aware of the amount of water they use and how they use it. This can make well users feel vulnerable or powerful, as it becomes impossible to hide from the actual amount of water used and shift blame onto others for the impacts, but can also create a deeper sense of certainty for what one actually has to work with.

## Carrots and Sticks

Interviewees described large sticks in the process of compact administration, with carrots only emerging recently after time and learning that limits would be enforced.

One interviewee, who worked with other farmers, landowners, and environmental groups described the initial stick.

*“Ultimately this is administered by a Special Master assigned by the Supreme Court of the United States. I don’t know if that person has ever been to the basin. They look at the law and what does the law say and they don’t have to deal with the physics or the reality, community, economic or environment. That faceless person has God-like power over the Basin if they don’t comply. If Colorado put its head in the sand, walked away and just said, ‘stick it!’ Fine, there’s unfunded curtailment that is ultimately enforceable and they would force the state to do it. They’d just turn wells off.”*

That initial, very large stick has had a lasting impact in the Basin. The lawsuit revealed how poorly understood the compact and the impacts of pumping were. Not to mention how uncomfortable it was to have the future of the compact be interpreted and administered by a Special Master who “didn’t even know what a circle was.” However, the threat of a completely unfunded shut off of all wells was enough incentive for the state and legislature to act to prevent that worst-case scenario.

When the state came out with rules to achieve compliance in the aftermath of the Special Master’s findings, one interviewee involved in water management detailed what it felt like,

*“[The State said] ‘We are going to adopt basin rules and if you don’t get into compliance with these basin rules, we will shut you down. We will start with the wells within one mile [of the river], three, 10, 15, then we will take up the rest of the basin.’”*

*You could consider it a threat, but that was the reality from the state of Colorado if you didn’t find ways to get into compliance.*

In light of the Basin rules, the RRWCD has worked to alleviate pressure on individual well users in a variety of ways. The district now levies an irrigated acreage assessment, which is viewed as a necessary, but unliked stick by some. They've worked to bring the overall Basin into compliance with the compact through the pipeline project on the North Fork Republican. Additionally, the RRWCD offers incentives like payments for well retirement, which assist farmers in transitioning from irrigated agriculture.

One interviewee described some of the more intangible carrots and sticks as "existential." This person questioned what would be here for them and their community if they were no longer able to meet their basic needs for survival, much less their economic livelihood, because they drew the aquifer down too far. "How do we comply in the short-term," they asked, "[meeting] the needs of today and design for the needs of the future as wisely as possible?"

Another interviewee described how families want to be here, and there are kids who want to come back and continue farming. This person recounted a conversation they had with a farmer, who asked "what's the point of doing all of this?"

“ I said, “you have kids who want to farm. Even if it's only for five years, that's five years they get to do that with you.”

These existential carrots and sticks are, for many in the Basin, relate to maintaining a way of life and heritage as long as possible.

### Conclusion

After a rocky start, the Republican River Basin appears to be on a path towards compliance. However, even successful efforts are bittersweet, because they still involve loss – just a softer landing. Building an organizational structure that is able to facilitate not only compliance, but also greater community cohesion and common purpose, took time and is still a work in progress. New understandings about the compact, the relationship between ground and surface water, and the impacts of groundwater pumping to the sustainability of the aquifer were consciously cultivated. Additionally, relationships and trust have been nurtured over time, which is enabling the ongoing work of reducing pumping and maintaining long-term compliance today.

## Republican River Basin Timeline

- 1943: Republican River Compact formed in order to obtain federal funding for dams and irrigation districts. Apportionment is based in 1929-1938 river flows, with the potential for adjustments.
- 1950's – 1990's: Groundwater pumping leads to river depletions.
- 1998: Kansas vs. Nebraska lawsuit over alleged compact violations.
- 2000: Special Master appointed by the US Supreme Court requires compact accounting to include groundwater pumping that impacts surface flows.
- 2004: Colorado creates the Republican River Water Conservation District (RRWCD), and is charged with bringing the Basin into overall compact compliance and compliance on each of the individual tributaries.
- 2005: RRWCD holds first meeting. Eventually they began acquiring and retiring wells, using federal conservation funding programs.
- 2003 – 2007: Colorado water users continued pumping 10,000 acre-feet over their allocation. River flows were also diminished by delayed depletions from earlier pumping.
- 2010: Well meters are installed with a fee per acre feet of land, although there is no pumping limit.
- 2011: Colorado's State Engineer orders the draining of Bonny Reservoir, because Colorado was being charged for evaporation and seepage losses from the reservoir.
- 2014: RRWCD purchases 13,500 acre-feet of historic consumptive use that is far enough away from the North Fork of the Republican River to minimize streamflow impacts, and pipes it into the river to help with compact compliance.
- 2016: Compact agreements regarding the Colorado pipeline and agreement to retire an additional 25,000 acres of land.
- 2019: RRWCD is expanded to cover the full area contributing to compact compliance problems.

**Sources (in addition to interviews)**

- Republican River Compact Administration website: <http://republicanriver.org/>
- Republican River Water Conservation District website: <https://republicanriver.com/>
- U.S. Department of the Interior Bureau of Reclamation Technical Service Center Denver, Colorado. Final Full Report: Republican River Basin Study. Denver, 2016. <https://www.usbr.gov/watersmart/bsp/docs/finalreport/republican/republican-river-basin-study-final-report.pdf>