

100 YEARS AGO in the
NEGOTIATIONS of the
COLORADO RIVER
—— COMPACT ——

Eric Kuhn | John Fleck



100 Years Ago: In the Negotiation of the Colorado River Compact

FOREWORD

In 1922, western leaders met in a year-long series of meetings to develop one of the legal cornerstones of water development in western North America - the Colorado River Compact. Though flawed in many ways, the compact provided a foundation for water management in seven states in the United States and two in Mexico.



The Utton Center's John Fleck and Eric Kuhn, former general manager of the Colorado River Water Conservation District, are writing a series of articles about its development - the false starts, confusion, and controversies that culminated in a fateful meeting in Santa Fe in November of 1922 that changed the West forever.

Kuhn and Fleck are the authors of the acclaimed book *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River*.

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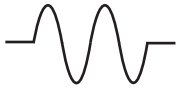


HERBERT HOOVER,
PICTURED CENTER,
IN 1918



EPISODE 1

JANUARY 26, 1922



A CENTURY AGO, COMPACT NEGOTIATIONS BEGIN

On January 26, 1922, representatives of seven western states and the United States Government met for the first time in Washington, D.C., to begin the development of what has been called the “cornerstone” of western water development – the Colorado River Compact.

Herbert Hoover’s words a century ago were chosen with care. Might it be possible, he wondered, for the state officials gathered around him that day “to agree upon a compact between the seven states of the Colorado Basin, providing for an equitable division of the water supply of the Colorado River”?

It was Thursday January 26th, 1922, at 10:00 AM, as the eight members of the Colorado River Commission met in Washington, D.C. gathered for the first time at the offices of the United States Department of Commerce. Over the next 11 months they would negotiate the details of the Colorado River Compact which they signed on November 24th, 1922. “It is hoped that such an agreement,” Hoover added “will prevent endless litigation which will inevitably arise in the conflict of states rights.”

Hoover, then the Secretary of Commerce, had been appointed by President Warren Harding to be the commissioner from the United States and lead the effort. In addition to Hoover, each state sent a commissioner appointed by its governor:

- **Arizona**, W. S. Norviel, State Water Commissioner
- **California**, W. F. McClure, State Engineer
- **Colorado**, Delph E. Carpenter, Special Water Counsel
- **Nevada**, Colonel James G. Scrugham, State Engineer
- **New Mexico**, Stephen B. Davis, State Supreme Court Justice
- **Utah**, R. E. Caldwell, State Engineer
- **Wyoming**, Frank C. Emerson, State Engineer

Hoover’s opening statement was carefully prepared.

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While there is possibly ample water in the river for all purposes if adequate storage is undertaken, there is not a sufficient supply of water to meet all claims unless there is some definite program of water conservation.

In the language of the day, “conservation” meant something very different than its modern usage. It meant, quite simply, building dams to “conserve” water that would otherwise be “wasted” to the sea. But the enormity of the dams contemplated left an equally enormous institutional task – developing the rules needed to allocate, and therefore share, the river’s waters.

The Federal Role

As to the federal role, Hoover mentioned four interests:

- Control of Navigation
- Protection of US Treaty Obligations
- Development of National Irrigation Projects
- Power Development on Public Lands

“The sole object of the Federal Government,” Hoover said, “is to secure development of the river in the interest of all.” After his opening statement, Hoover was formally elected Commission Chairman.

The Commissioners Speak

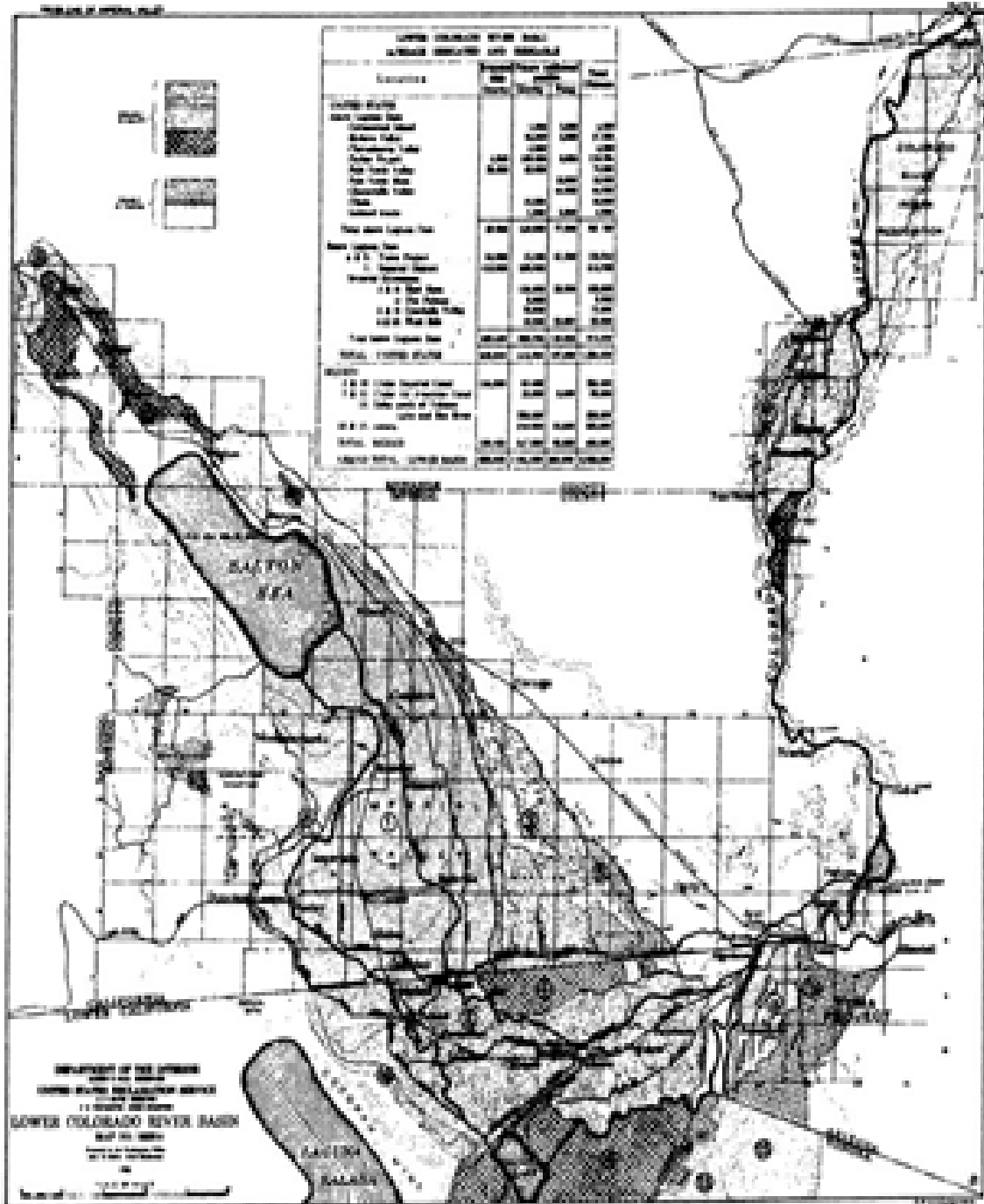
Each of the state commissioners gave an opening statement. Hoover first turned to Colorado’s Carpenter, acknowledging his role in the creation of the commission. Agreeing with Hoover, Carpenter stated “the prime object of the creation of this Commission was to avoid future litigation among the states.” He added that “facts are always the basis of legal problems and hence the facts must be studied.” The need to avoid litigation and study the facts was a common theme to the statements of all seven state commissioners.

The commissioners then heard from Arthur Powell Davis, Director of the U.S. Reclamation Service and nephew of the legendary John Wesley Powell. Davis, who began studying the Colorado River Basin in 1895, impressed the commissioners with his knowledge of the Colorado River.

He emphasized Hoover’s conclusion that with conservation the river had a sufficient supply of water to irrigate all lands that could be “favorably reached.” Davis suggested the Commission could successfully apportion the river’s waters among the seven states based on the number of irrigable acres in each state. Over the next six meetings, they would pursue this approach without success. The Commission then heard from representatives of the Army Corps of Engineers, the Federal Power Commission, and finally the U.S. Geologic Survey. In a short

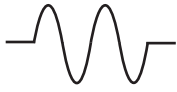
statement, Nathan Grover, Chief of the Hydrologic Branch, told the Commission that the resources of his agency were at their disposal.

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EPISODE 2

JANUARY 29, 1922



IRRIGABLE LANDS? RESCUE FOR A FLOUNDERING RECLAMATION SERVICE? 100 YEARS AGO AT COMPACT NEGOTIATIONS

As the Colorado River Compact negotiations got underway, the Reclamation Service sought to save its floundering fortunes.

In complex multi-party negotiations like the Colorado River Compact process, it is rare that major progress or breakthroughs happen during one of general sessions. Instead, real progress is more often made during the more candid discussions between smaller groups of negotiators during breaks, after-dinner discussions, and occasionally sub-committees. Most of these discussions in these venues are not documented in formal minutes.

Thus it is with the development of the Colorado River Compact.

But in the shadows of those committee meetings in the early days of the Compact's negotiation a century ago, we can see a few key features begin to emerge.

- The idea of apportioning the river's water based on acreage available for irrigation in each state was central to the leaders' initial approach to the problem of determining who got how much water.
- In the ambitious projects being contemplated – dams and canals on a scale never before developed in the West – Reclamation was looking for a way to save its floundering fortunes.
- While Washington D.C. was being pounded by the Knickerbocker Storm on Friday January 27th and Saturday, January 28th, 1922, the Colorado River Commission met four times, twice each day. The minutes show that the Commission accomplished very little during these meetings.

They had “general” discussions and heard from members of Congress, including Senator Key Pitman from Nevada and Representative Phil Swing from California's Imperial Valley, both of

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whom would have significant roles in the development of the river. The real action was taking place in the water availability and water requirements committee.

Irrigable Acres?

Hoover had directed Arthur Powell Davis to work with both committees. Davis invited the committees to meet at the Interior Department Building where they would have access to the authors and underlying data that went into the “Fall-Davis” report, a comprehensive study of development of the Colorado River Basin prepared by the Reclamation Service at the request of Congress.

Davis and Hoover were hoping the total water requirements for present and future irrigable acreage as identified by the requirements committee would be less than the water available as identified by the availability committee. There would then be a basis for apportioning water use among the seven states. Davis knew that based on the Fall-Davis Report, this result was possible. It all depended on whether the states would accept the data presented in the report.

Rescuing Reclamation’s Floundering Fortunes

Davis was hoping that a Colorado River Compact would lead to the authorization of the Fall - Davis Report’s signature projects, the All-American Canal, and a high dam in Boulder Canyon, which in turn would re-energize his struggling agency. Although the Reclamation Service had already achieved some major engineering feats such as the Roosevelt Dam on Arizona’s Salt River and the Gunnison Tunnel in Western Colorado, the agency had a fundamental problem. It was created by Congress in 1902 to help “reclaim” arid Western lands by providing reliable and affordable irrigation water, but farm economics were not working. Farmers receiving water from Reclamation projects were struggling to repay the federal government for the cost of building the projects.

Davis saw a new opportunity. A 700’ high Boulder Dam would produce a huge amount of hydroelectric power and there was a nearby market for the power, the fast-growing City of Los Angeles and its suburban neighbors. Hydroelectric power generation on Reclamation facilities would be in high demand in the West’s growing urban centers and the revenues it would produce would make projects both economically feasible and politically attractive. But, as Davis and his Reclamation Service colleagues would soon find out, power generation on federally owned facilities would bring in a new set of complications.

In prior appropriation states, power generation was a beneficial use, but not a beneficial consumptive use. One of Carpenter’s major concerns was that the water rights created by these large projects would command most of the flow of the river, interfering with upstream uses for irrigation and domestic purposes. Further, by the early 1920s there was already stiff competition for developing power in the canyons of Western rivers. Just a few months before that January meeting, a private company intent on developing hydroelectric power, Southern

California Edison, provided funding for the USGS to install a river gauge at a location on the Colorado River most of the compact commissioners had never heard of, Lees Ferry, Arizona. The goal of committees was to complete their assigned tasks and report back to the full commission on Monday morning, January 30th.



GOVERNOR JAMES SCRUGHAM
CA. 1943

EPISODE 3

JANUARY 30, 1922



A LACK OF CURIOSITY ABOUT THE COLORADO RIVER'S FLOW: 100 YEARS AGO IN COMPACT NEGOTIATIONS

From the start, a lack of scientific curiosity lay at the heart of the decisions made a century ago by the Colorado River Compact Commission

As the Colorado River Compact's negotiators got down to work a century ago, their lack of curiosity about how much water the river might be able to provide began to emerge.

Colorado's Delph Carpenter understood that he represented the interests of a headwaters state. Four major rivers, including the Colorado, originated in the high mountains and table mesas of his state. All its rivers flowed out. Colorado had all the physical water it needed; Carpenter needed to avoid legal claims by downstream states before future Coloradans could use their share of the water. From Carpenter's perspective there was a much simpler approach to protecting Colorado's interests than apportioning water among seven sovereign states based on irrigable acres, as was being initially discussed.

Q: How much water do we need? A: A lot.

After taking Sunday off, the Colorado River Commission met twice on Monday, January 30th. In the morning session, the water requirements committee reported back to the Commission. The fundamental flaw with the Hoover/Davis apportionment concept surfaced almost immediately. The committee presented two different sets of estimated irrigable acres for each state, one made by the Reclamation Service and the other made by the states. The states' estimated total was much larger, especially in the upper river states. With optimistic hydrology and using the Reclamation Service acreage data there might have been enough water to meet the needs of the seven states and Mexico (at this point in the negotiations, although Mexico was not invited to the meetings, its water needs were being considered as if it were a state), using the states acreage data, there was nowhere near enough water. While there were only minor differences on the data for existing acres under irrigation, the Reclamation Service estimate of potentially new irrigable acres in the four upper river states was 2,500,000 acres. The states' estimate was 4,805,000 acres, almost twice as much. Although the differences were

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much smaller, there were problems with the lower river data as well. The Reclamation Service had no new data for Nevada, a state that would never have much irrigation and subsequently end up with a very small piece of the river.

Despite the problems, five of the seven state commissioners, including New Mexico's Stephen B. Davis and Wyoming's Frank Emerson, tried to find a way forward to a compact based on irrigable acreage. Delph Carpenter and R.E. Caldwell of Utah would not budge. Hoover even asked Stephen B. Davis to meet with Carpenter to break the impasse. He failed; Carpenter had a fundamentally different approach in mind.

But how much water does the river actually have?

Lost in the debate over future water requirements was the report of the water availability committee. There is little discussion of the committee's report in the minutes of the 6th meeting. There is a simple statement that the amount of water is assumed to be 17.3 million acre-feet annually, the numeric average of the Yuma gauge from 1903 -1920 uncorrected for the reality that in 1903 there was far less upstream development than there was in 1920. This lack of curiosity over the water supply data would be a consistent theme for the remainder of the negotiations.

Carpenter's initial gambit, and Scrugham's compromise

At the 7th and final commission meeting in Washington, D.C. Carpenter presented his proposal for a compact. Carpenter proposed that the lower river states allow the upper river states to consume water without any interference whatsoever from the lower river states (note; this was before the basin was split into Upper and Lower Basins and these terms were used). His suggested language "the construction of any and all reservoirs and other works upon the lower river shall in no matter arrest or interfere with the subsequent development of the upper states." Carpenter's logic was that because of the climate and topography in the upper river, water use above the great canyons in Northern Arizona presented little or no risk to the lower river. Irrigators in the high country had a short growing season and most water diverted to their fields would end up back in the river as return flows. The lower river commissioners countered that without some reasonable limitation on uses on the upper river, they would be unable to finance their projects. In a constructive role he would play throughout the negotiations, Nevada's Colonel Scrugham suggested a compromise. He proposed that the lower river would not interfere with the upper river for a limited period, say 20 years. Carpenter rejected the compromise, unsure how long it would take for the upper river to develop additional water.

Although Carpenter's proposal was rejected by the lower river commissioners, his logic was prescient. During the debate over his compact proposal, Carpenter quickly realized that he'd fumbled the issue of out-of-basin exports. Recognizing that his logic didn't work for exports which were 100% consumptive, Carpenter signaled that he would accept a reasonable limit

on exports. In Silver Fox of the Rockies, historian Daniel Tyler suggested Carpenter would have been willing to accept a 500,000 – 600,000 acre-feet per year limitation. Today exports, or “transmountain diversions”, as we now call them, are approaching a million acre-feet per year with more being planned. In contrast, agricultural uses today in the Upper Basin are far less than even the cautious estimates by Arthur Powell Davis. The estimated consumptive use by Upper Basin agriculture in 1922 was 2.2 million acre-feet per year, today it’s about 2.8 million acre-feet, a very modest increase over a hundred years. Arguably, the Lower Basin would have more water today had they accepted Carpenter’s compact proposal.

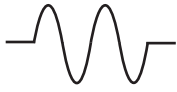
Unable to agree on two different compact proposals, the January 1922 round of compact negotiations ended on a dark note. In *Water and the West*, Norris Hundley titled his chapter on this phase of the negotiations as “Stalemate.” After more discussion and pep-talks by Hoover, Carpenter, and Utah’s Caldwell, the Commission agreed to hold field hearings beginning in March then get back together for another round of negotiations.



HORSESHOE BEND ON THE
COLORADO RIVER IN ARIZONA
1946

EPISODE 4

MARCH 15, 1922



GETTING ACQUAINTED WITH THE COLORADO RIVER BASIN: 100 YEARS AGO IN COMPACT NEGOTIATIONS

After a break, the 1922 Colorado River Compact negotiators went on the road, to acquaint themselves with the parts of the basin many had never visited.

The Colorado Commissions' 8th Meeting

After a six-week break from the disappointing series of negotiating meetings that ended on January 31st in Washington, D.C., the commissioners from the seven U.S. Colorado River Basin states and the federal government reconvened for the group's 8th meeting on March 15th, in Phoenix, Arizona at the Federal Building. The commission's goal for the Phoenix meeting was not to return to the stalled negotiations. Instead, at Hoover's recommendation, the commissioners and their advisors planned to visit the Colorado River Basin to learn about the basin, hold a series of public meetings, and tour the proposed Boulder Canyon Dam site and the Imperial Valley.

Learning about the Basin

One might think that all the commissioners were experts on the Colorado River Basin, but the reality was that only one of the commissioners, Arizona's Norviel, lived and worked in the basin. The remainder were highly skilled professionals, but their knowledge of the Colorado River Basin was primarily limited to the states they represented. The Colorado River Basin of the early 1920s was a vast expanse of primarily rural Native American and settler communities. There were few improved roads. Transportation was primarily by railroad, and even that was limited to a few east-west corridors. Communication was by telegraph and mail. While residential electric and telephone services were being rapidly installed in the larger urban centers adjacent to the basin, like Denver and Salt Lake City, and a few of the larger communities within the basin, like Phoenix, it would be decades before these basic services were commonly available for most of the basin.

Mining and agriculture were the primary drivers of the basin's economy. Of the two, agriculture was much more stable. Arthur Powell Davis' Reclamation Service was already a major

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development force. The Service brought with it the federal government's financial and technical resources necessary to build large scale projects that the local communities could not hope to build with their own resources. These projects, like the Yuma and Salt River Projects in Arizona and the Uncompahgre and Grand Valley Projects in Western Colorado, provided reliable water supplies to irrigate hundreds of thousands of acres of mostly desert lands. The projects also brought new problems to the basin. Their success led to a desire by communities and promoters throughout the basin for Reclamation to build more. Further, the existing and proposed projects were large enough to have a major impact on the flow of the river. Without a compact among basin states, legal and political conflicts over which projects got the river's waters and federal dollars were guaranteed.

First Stop: Phoenix

The commissioners' first stop was Phoenix. Today it is the 5th largest city in the United States with a population of 1.61 million – 4.5 million if you include the greater Phoenix metro area of Maricopa County. In 1920 Phoenix's population was just 48,000 – 90,000 in Maricopa County as a whole. In 1922, Phoenix's Valley of the Sun was dominated by irrigated agriculture. Today, while many are surprised at the scope of the region's remaining agriculture, irrigated acreage has long been in decline, with much of that farming replaced by a sprawling metropolis.

The commission held four public hearing sessions and a business meeting where it discussed logistics and a letter from the Federal Power Commission requesting guidance on how to proceed with an application by a private individual to build a power dam at Diamond Creek in what is now the Grand Canyon. That proposed power plant – the Girand Project – highlighted the frictions within the basin. The project, which had been pending before the Power Commission for several years, had broad support from Arizona's mining community and political leaders but was opposed by the other states and Davis. The upper river states were opposed because it could create a legal call on the river impacting upstream development. Davis and California were opposed because it could interfere with the development of the Boulder Canyon Project. The commission failed to reach a consensus on a response.

The commission held four lively public in Phoenix meetings over three days. Among the presenters were two strong-willed individuals who would have a major impact on the river's future: irrigation promoter George Maxwell and Los Angeles Water and Power boss William Mulholland.

Maxwell's Arizona Vision

Maxwell was promoting what was referred to as the Arizona Highline Canal, a project that would divert large amounts of water (perhaps 8 million acre-feet per year) from the river in the Western Grand Canyon, then convey it through 450 miles of pumping plants, tunnels, and canals to Central Arizona where it would irrigate 2.5 million acres of new lands. Maxwell sparred with Davis and the commission members, most of whom considered his project

unfeasible. Maxwell feared that the commission would agree to a compact that would leave Arizona with too little water. Further, he opposed the construction of a large storage reservoir at Boulder Canyon. Instead, he supported a large reservoir in Glen Canyon coupled with a power/diversion dam near Diamond Creek and a flood control reservoir at Bullhead (now Davis Dam). Although Maxwell had little success in influencing the compact negotiators, his dream to move water from the mainstem to Central Arizona ultimately became today's Central Arizona Project.

Mulholland's California Head Fake

Mulholland, architect of the 220-mile-long Los Angeles Aqueduct, which moves water from the eastern Sierras to Los Angeles, chose to meet with the commission in Arizona rather than in his native Los Angeles. In a message aimed at the Arizonans as much as the commissioners, he testified that his city was not interested in water from the river. Rather, it needed the hydroelectric power of a Boulder Canyon project and was more than willing to pay for it. It may have been a head fake. In 1924, under Mulholland's leadership, Los Angeles formalized its plans to build a new aqueduct from the Colorado River and in 1927 he helped form the Metropolitan Water District of Southern California, the entity that built and operates the Colorado River Aqueduct. In 1931 Metropolitan and Los Angeles became the two largest purchasers of Hoover Dam power.

On to Las Vegas and Boulder Canyon

On Friday afternoon, March 17th, the Colorado River Commission members, and their advisors packed their bags for an overnight trip to the small community of Las Vegas, Nevada to tour the Boulder Canyon Project site. Today the Las Vegas area has a population of 2.3 million. In 1922, with a population of only 2,300, it was so small that Nevada's Commissioner Scrugham didn't believe it was necessary for the commission to hold a public hearing.

On Saturday, March 18th, the commission toured the Boulder and Black Canyon dam sites, then set off on another overnight journey to see the Imperial Valley.



PERSON OVERLOOKING THE
COLORADO RIVER
CA. 1903

EPISODE 5

APRIL 1, 1922



CARPENTER'S LAST STAND FOR COMPLETE STATE SOVEREIGNTY: 100 YEARS AGO IN COMPACT NEGOTIATIONS

On Saturday, April 1st, 1922, at 9:00 AM in Denver's iconic Brown Palace Hotel, Chairman Herbert Hoover opened the 9th meeting of the Colorado River Commission. The official meeting lasted only 30 minutes. The commission took only one action of consequence. It asked its members to submit to Executive Secretary Clarence Stetson "suggested forms of compact for the disposition and apportionment of the waters of the Colorado River and its tributaries." The commission would then consider these draft compacts at future meetings.

At 9:30 AM, the meeting ended, and the commissioners headed to the day's main event, a public hearing at the Colorado State Capitol. The Denver hearing was the next to the last of a long series of public hearings and inspection tours that had begun back on March 15th in Phoenix. After Phoenix, the Commission visited the Boulder Canyon project site near Las

Vegas and agricultural development in the Imperial Valley. It held three hearings in Los Angeles on March 21st and 22nd, then headed to the upper river where it held hearings in Salt Lake City and Grand Junction and inspected the federal Grand Valley Project.

Governors Join the Ruckus

The April 1 hearing was a big deal. Four of the basin state governors would join them; three from the upper river – Charles Maybe from Utah, Merritt Mecham from New Mexico, and Oliver Shoup from Colorado – and one from the lower river, Nevada's Emmet Doyle.

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In proposing the tour and public hearings, Hoover hoped to build both knowledge and social capital. While each of the commissioners was an expert in the water needs of their own states, there had never before been an effort to bring people together to think at the basin scale. Hoover wanted the commission to see and better understand the water issues facing the basin. He also hoped that during the two weeks the commission and their advisors were together they could get to know one another and engage in the candid discussions that could break the current impasse. In particular, he wanted to soften up Colorado's Delph Carpenter, to get him to back off of his insistence that water projects on the lower river never interfere with development on the upper river. Hoover had asked New Mexico's Stephen B. Davis, a state supreme court justice, for help.

The tour was a big success. After visiting Boulder Canyon, the commission went south to the Imperial Valley. What they saw clearly impressed them. The Imperial Valley, which before irrigation promoter Charles Rockwood renamed it for marketing purposes was referred to as the Colorado Desert, is a vast expanse of potentially irrigable land, much of it at an elevation below the Colorado River channel just to the east of the valley. While some maps do not include the Imperial Valley as a part of the Colorado River Basin, those familiar with the geology of the basin consider that silly. Like the Grand Canyon, the Imperial Valley owes its existence to the river. The valley lies at the very northern end of the Salton Trough, a geologic feature called a "rift" created by plate tectonics extending from the tip of Baja California to Palm Springs. Over the eons, as the rift was subsiding the valley floor, the Colorado River was filling it in with sediment. The valley is a part of the river's delta.

The Foundations, and Challenges, of Imperial Valley Farming

Rockwood's California Development Company first delivered water from the river via a route through Mexico to the valley in June 1901. In 1911 the Imperial Irrigation District (IID) was formed to buy the irrigation works from the Union Pacific Railroad which had taken over Rockwood's bankrupt company and saved the valley from the floods of 1905-07 when the entire river diverted itself through the newly constructed canal into the Salton Sink – as it had countless times in the past. In 1922 when the commission arrived, there were over 20,000 settlers farming about 300,000 acres of land. The IID needed help from the Reclamation Service in two major ways; a supply canal that avoided Mexico, an "AllAmerican Canal", and an upstream reservoir to help control the floods that were still threatening the valley. The recently released Fall-Davis Report made a strong case for both.

On To Los Angeles

From the Imperial Valley the commission traveled to Los Angeles where it held three public hearings. The Los Angeles of 1922 was a rapidly growing city of over 600,000 in a county with a population of over a million. It had already exhausted its local water supply and was importing water via a 220-mile aqueduct from the east slopes of the Sierra Nevada. While local community leaders may have been coy about plans to import water from the river, they made it

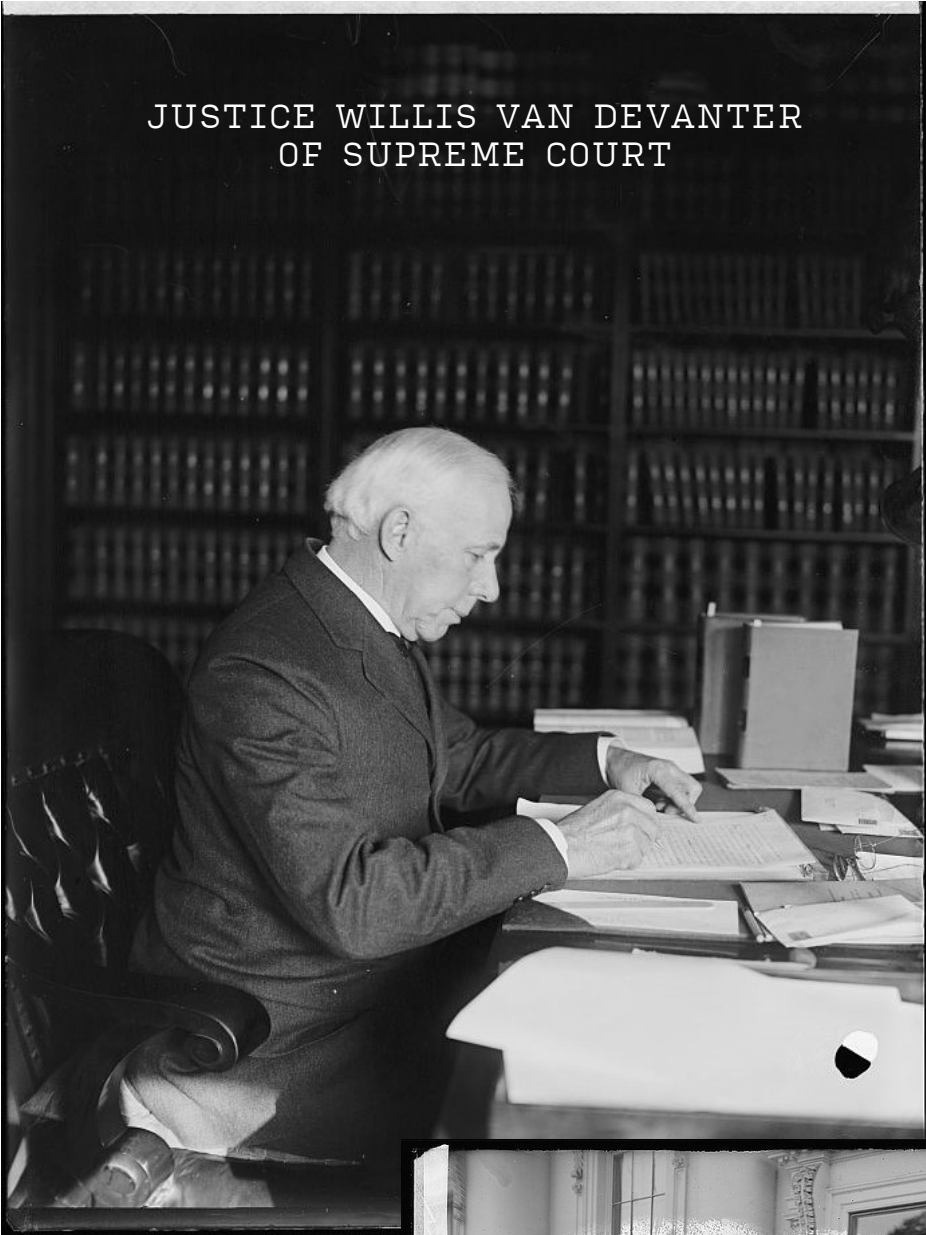
clear that they wanted and needed the hydroelectric power the Boulder Canyon Project would produce. In Los Angeles, Arthur Powell Davis first suggested that the Commission abandon the idea of apportioning water among the states. Davis suggested instead a split between an upper and lower basin. Davis's proposal would allow unrestricted development in the Upper Basin for 50 years. Projects built during this 50-year window would be senior to all Lower basin uses. After the 50-year window, new Upper Basin projects would be subject to the priorities of existing Lower Basin projects.

Carpenter and Sticking Points

The combination of the tour and Davis' proposal made an impression on Carpenter, but not the one Hoover and Davis were hoping for. Instead, what Carpenter saw in California caused him, and Utah's R. E. Caldwell, to double down on their demands that any compact be based on the principle of non-interference by Lower Basin projects on the Upper Basin, subject only to a possible limit on exports out of the basin. The issue of trans-basin diversions had been a hot topic during many of the public hearings. While perhaps open to a limit, all four of the commissioners from the upper river, as well California's McClure wanted to keep the option open for their states.

In a choreographed performance at the Colorado statehouse, New Mexico Governor Merritt Mechem told the Commission that New Mexico could not accept a limited period (50 years) for development, unless the limit was so far in the future that it was no limit at all. For all practical purposes, most of the Arthur Powell Davis Los Angeles proposal was now dead.

After the Denver hearing, the Commission had one last public hearing scheduled for Cheyenne the next day. After that, it might be a while before the Commission could meet again. Stephen B. Davis let Hoover know that any efforts to soften Carpenter might now be in the hands of the United States Supreme Court. What it decided in the pending Wyoming v. Colorado case over Colorado's tiny Laramie River would be big news for the mighty Colorado – stay tuned.



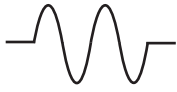
JUSTICE WILLIS VAN DEVANTER
OF SUPREME COURT

UNITED STATES
SUPREME COURT
OCTOBER 2,
1922



EPISODE 6

JUNE 9, 1922



THE SUPREME COURT BREAKS THE LOGJAM: 100 YEARS AGO IN COMPACT NEGOTIATIONS

With a single statement, the United States Supreme Court changed the direction and tone of the compact negotiations:

[T]he waters of an innavigable stream rising in one state and flowing into a state adjoining may not be disposed of by the upper state as she may choose, regardless of the harm that may ensue to the lower state and her citizens.

In a unanimous ruling, on June 5, 1922, the court issued its decision in *Wyoming v. Colorado*, ruling that Colorado could not develop waters of the Laramie River in a manner that ignored and injured downstream senior appropriators in Wyoming. The decision, and its clear implications for the development of the Colorado River, echoed around the West. “State Lines on Colorado River Are Wiped Out”, blared a front page headline in the Salt Lake Tribune, adding “Federal Officials Say California is Already Owner of Stream’s Summer Use.” This was the risk that states in the river’s upper basin had long feared – that the doctrine of prior appropriation, used by the states within their own borders, might be determined to apply across state lines. Nervously, they all eyed California.

The Laramie, the river at the center of the court’s ruling, has its headwaters in the Northern Front Range Mountains about 40 miles west of Ft. Collins. From there it flows 280 miles north into Wyoming, reaching the North Platte River near Ft. Laramie, WY. Wyoming farmers and ranchers began using the river for irrigation purpose in the 1880s and 1890s. Within Colorado there is little irrigable land along the river’s path, but its elevation just happens to be about 225 feet higher than the Cache La Poudre River where the two rivers are a little more than two miles apart.

Thus, in 1909 two Colorado water companies, including the North Poudre Irrigation District, a client of Colorado’s Delph Carpenter, began construction of an 11,500 foot tunnel that would divert 800 cfs (essentially the entire river in low flow years) from the Laramie River into the already fully developed Poudre. In 1911 the State of Wyoming filed suit against Colorado to

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protect its existing irrigators. Over the course of the eleven-year case, the Supreme Court held three oral hearings, the last in January 1921, only weeks before the Colorado River Commission first met.

Wyoming's basic argument was that Colorado's proposed project would cause great damage and injury to its citizens who were already using the river for irrigation. Colorado's basic argument was that it had a sovereign right to take and use any water within its boundaries without regard to the rights of states or individuals outside of Colorado. Both states used prior appropriation, but details of how the doctrine was administered were quite different. In Colorado water rights were adjudicated by the local district court. In Wyoming they were granted by a state Board of Control.

The opinion, written by Justice William Van Devanter, determined that since both states used prior appropriation, this doctrine would set the rule for the equitable interstate division of water on the Laramie River. The effect of the opinion was that to protect downstream senior appropriators in Wyoming, the Colorado project would be limited to an annual diversion of 15,500 acre-feet per year, about 20% of the original plan. The opinion was not a complete loss for Colorado. Wyoming had challenged the legality of the Colorado's project because it was a transbasin diversion. The court found that there was nothing illegal with projects that move water.

As soon as the opinion was released, Colorado River Compact Commission Secretary Clarence Stetson sent copies of the opinion to the commissioners along with a six-point summary. For Colorado's Carpenter, the loss was probably not a great surprise, but it was nonetheless a bitter defeat. He told his upper river colleagues that the decision left them badly exposed. For the compact negotiations, the court decision required Carpenter to change his basic strategy. Up to this point, he and Utah's Caldwell had held firm for a compact based on the concept that water projects in the Lower Basin would never interfere with water uses in the Upper Basin. The decision coupled with building public pressure for Congressional approval of a large storage reservoir to control floods, regulate the river, and produce much needed hydroelectric power meant that it was now time for Carpenter to propose a more practical alternative. He turned his attention to a concept proposed by Reclamation Service Director Arthur Powell Davis at the Los Angeles field hearing – a compact based on dividing the use of the river's waters between two basins.

Stetson's goal was to get the Commission back together in August. Hoover had asked New Mexico Governor Merritt Mechem for a recommendation on where they might meet in relative seclusion. Mechem found such a place, but finding a date that would work for Hoover and the other commissioners would push the meeting date out to November – stay tuned.

EPISODE 7

NOVEMBER 9, 1922



CONVERGING ON SANTA FE: 100 YEARS AGO IN COMPACT NEGOTIATIONS

Santa Fe, New Mexico, was off the beaten path in November 1922.

That was the point.

After a logjam and a seven-month break, the Colorado River Commission finally reconvened in Santa Fe, New Mexico at the Bishops Lodge on Nov. 9, 1922, to try to find common ground for a seven-state compact to divide the waters of the Colorado River. The Commission's chairman, Commerce Secretary Herbert Hoover, chose to meet there because he wanted a secluded location where the commissioners and their advisors could roll up their sleeves and hammer out a compact.

The enthusiasm for a deal, and the optimism for what might follow, was palpable as leaders across the West descended on New Mexico. The obstacles were great, both technical and institutional, New Mexico's Alamogordo Daily News reported in the days leading up to the gathering.

That all of the obstacles will be surmounted goes without saying, and doubtless in an incredible short time and during the lives of the most of the people now living a net work (sic) of lines and irrigation ditches will run out from the Colorado river that will give rise to new industries and create thousands of acres of new areas that will support large populations.

The lodge is a few miles north of the city over what was then a very rough road. Time was short. The 1921 law authorizing the negotiations only gave the Compact Commission a year to finish its task. Only 53 days remained and as far as Hoover could tell, the commission was nowhere near an agreement.

The 10th meeting did not get off to a smooth start. First, the commissioners from California, Nevada, and Wyoming had travel problems. All seven state commissioners would not get to Santa Fe until late on Friday. Next, Hoover had a second goal in picking the smallish Bishops Lodge. He wanted to limit the size and attendance at the meeting. In his view, the negotiations had too many camp followers, especially from California. Hearing that the lodge had booked as many as four to a room, he ordered Clarence Stetson, his aid and commission secretary, to direct the manager to reduce the guest list, limiting those staying at the lodge to two to a room. Although it upset those that were kicked out of the lodge, only a few departed Santa Fe. Instead, most decided to make the daily trek over the rough road and to Hoover's annoyance,

100 Years Ago: In the Negotiation of the Colorado River Compact

the state commissioners, especially California's McClure, were reluctant to tell their state colleagues they were not welcome.

Hoover's scheme to sequester the negotiations kept the press at bay. "The Associated Press dispatches from the conference have been meagre," the Nevada State Journal reported as the proceedings rolled forward.

Without all the commissioners present, there was little of substance that could be accomplished pm the first day. The five commissioners decided to limit the attendance at executive sessions to the commissioners plus one legal and engineering advisor for each and any governor that might be in attendance. They then adjourned.

While the commission may not have met in seven months, they had kept in communications with each other and Stetson. Colorado's Delph Carpenter, in many ways the Compact's most important parent, had been especially active. He was still reeling from his state's Supreme Court loss in the Laramie River case where the court decision applied the Doctrine of Prior Appropriation on an interstate basin. That loss in his view left the upper river states fully exposed to the big projects California already had in place or was actively planning. He and Utah's Caldwell both had already decided they would give up on their insistence that Lower Basin projects never interfere with future water use on the upper river. Both had a new idea to share with their fellow commissioners based on dividing the use of the river's waters between two basins and leaving the dividing the water among the states to each basin.

Now they just needed to wait until everyone arrived.

EPISODE 8

NOVEMBER 11. 1922



SEEDS OF A DEAL PLANTED, BUT WHICH WILL GROW? 100 YEARS AGO IN COMPACT NEGOTIATIONS

From the beginning, the negotiators gathered to settle the allocation of the Colorado River, wrestling with three crucial questions:

- How should the water be divided?
- How should the basin be governed going forward?
- How much water did they actually have to work with?

With the arrival of all of the commissioners and their key advisors, the Commission got back together on Saturday morning. The purpose of this meeting had been agreed to back in early April. Each commissioner would be given the opportunity to suggest the form of a compact. Nevada's James Scrugham suggested they go by state alphabetical order.

What followed represents a remarkable turning point in the history of the Colorado River Basin, with echoes still reverberating today.

The Seven States, in Alphabetical Order

Arizona's Winfield Norviel went first. Norviel suggested a compact based on the application of prior appropriation on a basin-wide basis – for a limited, but unspecified period. He suggested existing rights would not be impacted, shortages should be shared on an equitable basis, and that exports out of the basin would be prohibited except for a specified amount for Colorado and Utah. Importantly Norviel suggested a three-member commission appointed by the president that would investigate disputes and determine if water was being wasted for non-economic purposes. This echoed a proposal Norviel had made at the commission's first meeting back in January.

California's McClure passed but suggested one of his associates might make a proposal later. It was then the turn of Delph Carpenter, Colorado's representative.



PORTRAIT OF
ARTHUR POWEEL DAVIS

The Two-Basin Solution

Carpenter proposed that the beneficial consumptive use of the river be split between two basins – the moment when this monumental foundation of the river’s management, which had been first proposed by Reclamation’s Arthur Powell Davis, began to move from vague idea to concrete plan.

Carpenter referred to them as the Upper and Lower Regions, with the dividing line at Lee’s Ferry, Arizona. He proposed the split be based on the average annual flow of 17.4 million acre-feet per year from gage record at Yuma, Arizona, which is below the confluence of the Gila and Colorado Rivers. Using this gauge record would give each basin 8.7 million acrefeet per year. Carpenter believed that 14% of the river’s total flow, or 2.436 million, came from tributaries below Lee’s Ferry, therefore the upper states would have to provide 62.64 million acre-feet every ten years at Lee Ferry ($8.7 - 2.436 = 6.264$). Under Carpenter’s compact, each division (basin) would be responsible for 50% of a future treaty delivery obligation to Mexico. He proposed that power generation uses would be subservient to domestic and irrigation uses. Fundamental to his approach was that after a compact dividing the water between two regions was signed, the individual states in each region would get together and divide each region’s water among themselves.

Utah’s R.E Caldwell then presented his proposed compact. It was like Carpenter’s. It would divide the river into two basins at Lee’s Ferry. Prior Appropriation would generally control the river, except the Lower’ Basin’s “senior” rights at Lee’s Ferry would be limited to six million acre-feet per year (the ten-year obligation would be 60 million acre-feet, almost the same as Carpenter). Caldwell also suggested that the Upper Basin would need a reservoir of six million acre-feet above Lee’s Ferry to make his compact work.

After Caldwell presented his suggestion, Wyoming’s Emerson, Nevada’s Scrugham, and New Mexico’s Stephen B. Davis weighed in. Scrugham indicated that he would be OK with a compact between two basins. Emerson was on the fence; he could live with either option. Davis, however, still preferred the Commission apportion water among the seven states. California’s McClure then asked the Commission to listen to a suggestion made by advisor George Hoodenpyl, a water attorney from Long Beach, California. He suggested a compact based on dividing the use of the waters 50/50 at Lee’s Ferry, all present uses would be protected, and each basin would cede control of future development to the federal government. After clarifying that his suggestion was his and not California’s, he went on to explain that he believed the federal government was the one entity that could make decisions for the good of the region as a whole.

The commissioners then had a general discussion of what they had heard. Norviel and Carpenter dominated the discussion. Norviel believed that a 50/50 split at Lee’s Ferry would not provide enough water for the lower river. Carpenter indicated that he was now totally convinced a compact dividing water among seven states would be unworkable. He also indicated his strong opposition to the formation of a “super-agency.”

Locking in a Fateful Mistake – Reclamation’s Overestimate of the River’s Flow

Toward the end of the meeting, Reclamation’s Davis reviewed his agency’s data on water flows and water use in the basin. His main source was the Fall-Davis Report, which had been published in February. Davis told the commission that his estimate of the water available at Lee’s Ferry was 16.5 million acre-feet per year – crucially ignoring the work of the US Geological Survey’s E.C. LaRue, who (as we wrote in our book *Science Be Dammed*) since 1916 had been trying to warn the West’s leaders that the gage record was insufficient, ignoring known droughts in the 1800s.

LaRue had offered his services to Hoover, to attend and contribute to the Compact’s development. In a fateful decision that echoes through Colorado River history, LaRue’s offer was ignored.

Davis indicated that the losses between Lee’s Ferry and Laguna Dam were a little bit more than the inflows. The estimated flow at Laguna Dam was 16.4 million acre-feet per year, based on the Fall-Davis report. He estimated that present and future uses in the Upper Basin would total about 6.5 million acre-feet annually. In the Lower Basin, it was about 7.27.4 million acre-feet.

As the Commissioners ended their marathon meeting, they were still split over whether they should proceed with a two-basin or seven-state split. They decided to adjourn until 8 PM on Sunday evening.

EPISODE 9

NOVEMBER 12, 1922



SEEDS OF A DEAL PLANTED, BUT WHICH WILL GROW? 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Colorado River Compact Commission negotiators returned to their discussions for a short 8 p.m. Sunday evening meeting Nov. 12, 1922, they began trying to dive into the details of how to divide up the great river.

In trying to make the broad concept of dividing the river between a newly proposed “Upper Basin” and “Lower Basin”, they found devils in the details:

- Where should the measurement be taken that formed the basis for the split?
- How would a division cope with the inherent variability in the river’s annual flow?
- Would an “Upper Basin” reservoir be needed in addition to the one being contemplated in Boulder Canyon?

Carving the Colorado River Basin in Two

After Saturday’s long meeting where they heard various proposals for a compact, Sunday’s gathering was short. The focus immediately turned to the Delph Carpenter’s two-basin proposal and most of the questions came from Arizona’s Winfield Norviel. Norviel first asked the basis for Carpenter’s proposed 50/50 split based on the river’s flow at Yuma. Carpenter, while acknowledging that it was somewhat arbitrary, said he chose Yuma to make sure the tributaries below Lee’s Ferry were included in the division and that that an equal division of the use of the river was an “equitable” division. He noted that he used the Yuma gage flows to determine how much water the upper river would have to deliver at Lee’s Ferry to achieve a 50/50 division.

How Much Water Must Pass From “Upper” to “Lower”?

Norviel then turned his attention to Carpenter’s proposed 62.64 million acre-feet every ten years delivery at Lee’s Ferry. He voiced concerns that the ten-year provision would not provide the lower river enough certainty – noting that the upper division would have complete control over how much water was delivered in any one year. Carpenter responded that if Norviel was



COLORADO RIVER BASIN

concerned that they could deliver no water for seven straight years then delivering it all in three straight years, such a delivery was ‘not in the range of my thought.’ Carpenter went on to note that a reservoir at (or just above) Lee’s Ferry would naturally be a “stabilizing influence for the lower territory,” but such a reservoir “would essentially be a lower division reservoir.” At this point Nevada’s James Scrugham suggested “wouldn’t the possible objection be solved by including with the amount, a minimum flow in second feet?” Carpenter responded that he would have no objection “if you made it low enough.”

A Future Obligation to Mexico?

Concerning the proposal that each division deliver an equal 50% share of any future treaty delivery to Mexico, Norviel asks “is any estimate to be made of the loss by evaporation or percolation between Lee’s Ferry and the point of diversion to Mexico?” Carpenter responded no – “it was thought that the power benefits and other benefits that would run to the lower country would offset the loss.”

The discussion of losses prompted Herbert Hoover, the Commerce Secretary and Commission chairman, to ask Carpenter if his plan “conceives a sort of fifty-fifty division of the river as it was before white man began to divert it?” Carpenter, perhaps confused by the question, responded “it would probably result in that conclusion.”

Sorting Out the Numbers

Reclamation’s Arthur Powell Davis then took the opportunity to provide the commissioners with his Reclamation Service’s data on existing irrigation above Lee’s Ferry and in the Gila River drainage. According to Davis, about 1.53 million acres were being irrigated in the upper river and over 400,000 acres in the Gila, including the Salt River Project. Davis went on to conclude that at an average of 1.54 acre-feet of consumptive use, the total use above Lee’s Ferry was about 2.35 million acre-feet annually. He had no similar total for the Gila but noted that the average consumptive use per acre on the Gila was much higher than in the upper river.

Davis went on to point out that Carpenter’s estimate of 14% for the lower tributaries was too high because it included rivers that Davis thought would be in Carpenter’s upper division such as the Escalante, the Dirty Devil, and the Paria Rivers. He suggested Carpenter use 11%. Perhaps Davis was hoping that Carpenter would adjust then adjust his proposed tenyear delivery (the adjusted number would have been 67.86 million), but Carpenter remained silent.

Two-Basin Approach Left Unsettled

At the end of the meeting, Hoover asked for a vote on the concept of apportioning water between two basins. Six of the seven, all but Norviel, agreed to proceed with that approach. Norviel said that he wanted to take more time to think about it. They adjourned until tomorrow morning at 10 AM.



LEE'S FERRY TODAY
PHOTOGRAPH BY JOHN

EPISODE 10

NOVEMBER 13, 1922



WHERE TO DRAW THE LINE? 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Colorado River Compact Commission's negotiators returned to their task on the morning of Nov. 13, 1922, the shape of the compact was beginning to emerge into view, as Arizona agreed to the idea of dividing the basin in two. But the question of how to divide the water remained a difficult question.

As the Colorado River Compact Commission's negotiators returned to their task on the morning of Nov. 13, 1922, the shape of the compact was beginning to emerge into view.

Colorado Compact Commission Chairman Herbert Hoover opened the meeting by returning to the unresolved question from the previous evening – “whether we could accept a general principle of a division between the upper and lower states of the primary basis of compact?” Arizona's Winfield Norviel responded in the affirmative: “We in Arizona are perfectly willing to accept in principle the division of the basin into two divisions.” He went on to make it very clear that in accepting a two-basin compact, Arizona was not accepting a “fifty-fifty partition of the waters,” adding that “I think the fifty-fifty proposition is infeasible and impossible as a matter of exactitude.”

Where to Draw the Line Between an “Upper” and “Lower” Basin

The discussion then turned to the point of division and the status of the Paria River. Carpenter explained that in his compact proposal, he had assumed the division would be the “old Lee's Ferry.” Norviel pointed out that Lee's Ferry is just upstream of the confluence with the Paria and because of the steep canyon terrain, there were no practical gaging locations below the confluence. After a bit more discussion about gaging, Utah's Caldwell concluded that from his perspective, the Paria River was an upper division tributary and that there was no problem with using two gages, one on the main Colorado River and a separate gage on the Paria (the situation we still have today). Hoover summarized the consensus as follows; the dividing point between the basins would be the proximate location of Lee's Ferry, but include the Paria River, and the details would be left to a drafting committee.

But How Much Water Should Pass the Chosen Point?

Hoover then turned the Commission's attention to the question of the upper river's delivery at Lee's Ferry. (Note that, at this point in the negotiations, the terms "Upper Basin" and "Lower Basin" were not being routinely used. They used several similar terms interchangeably – upper and lower divisions, upper and lower territories, and upper and lower river or states.)

Hoover put it this way – “the question is whether there be a positive delivery every year, or whether there should be only a delivery of a total over ten years or over three years or over five years or any other period.”

The discussion that followed was largely a two-way dialogue between Norviel and Carpenter, interrupted occasionally by Hoover to summarize or refocus the discussion, and by Arthur Powell Davis and R.E. Caldwell to add or clarify technical points. Carpenter detailed why he picked ten years. He thought it was the “sweet spot” – neither too short to be a problem for the upper river nor too long to be a problem for the lower river.

Carpenter explained that Norviel's concern that a ten-year average would allow the upper river to deliver nothing for a year or more was not realistic and that development in the upper river would naturally flatten the hydrograph, a point the engineers in the room generally agreed with. Arizona's Norviel remained skeptical, never agreeing to any period greater than three years. The combination of a ten-year flow plus an annual minimum remained an attractive option for the others, especially Nevada's James Scrugham and Wyoming's Frank C. Emerson. Carpenter agreed in concept but opposed a suggestion to set the minimum at five million acre-feet per year.

Hoover recessed the meeting, suggesting they take a long lunch, noting it was hard to sit for two-and one-half hours. The Commission adjourned until 3 PM.

That “Crackpot” Maxwell

The Commission reconvened at 3 PM. The meeting began with Secretary Stetson submitting a long letter to the record from George H. Maxwell, Executive Director of the National Reclamation Association (now the National Water Resources Association). Maxwell demanded that they delay negotiating a compact and instead turn their attention to the construction of flood control storage facilities to protect the Yuma and Imperial Valley projects. Maxwell, whom Hoover considered a “crackpot,” was one of the people he wanted to keep out of the negotiations. The Commission had adopted a policy of voting on who could join their meetings as advisors. After accepting the Maxwell letter for the record, they voted to admit L. Ward Bannister, a water attorney from Denver, as an advisor to Carpenter.

During the remainder of the afternoon, the Commission exchanged views on several topics, including the term of the compact, the status of the Gila River, and the concept of a minimum annual flow at Lee's Ferry. Carpenter stressed his view that any minimum flow should be tied to drought in the upper river and “should result in the penalty of drought being equally

distributed over the entire river system.” The meeting adjourned at 6 PM to be resumed on Tuesday morning at 10 AM.

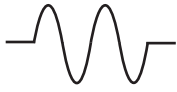


PHOTOS OF
PRESEIDENT
HERBERT
HOOVER



EPISODE 11

NOVEMBER 14, 1922



STORAGE, YES. BUT IN THE COMPACT? 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Colorado River Commission's members wrestled with the details of water allocation, they also struggled to decide whether building a dam – something that everyone hoped would happen – should be part of the Compact itself.

When the Colorado River Compact Commission's members returned to negotiations on the morning of Nov. 14, 1922, they were presented with three important questions – one which survived as language in the final compact and two which did not, but all three of which remain important to the river's management today.

As they convened that morning at Bishop's Lodge, outside Santa Fe, Commission Chairman Herbert Hoover laid out what he called “our three main propositions”

- a division of the use of the water between an upper and lower basin
- the term of a multi-year upstream-to-downstream flow commitment (flow at Lee's Ferry) and a minimum delivery for any one year
- the question of whether the compact should be made contingent on construction of large storage reservoirs on the river.

Storage, Yes. But in the Compact?

The desire for dams for storage and flood control had always been one of the main drivers for the creation of a compact. The question was whether the provisions of storage should be included in the compact itself

Speaking that morning, Hoover observed that if the compact was made contingent on storage, “one would have more courage to arrive at quantities if they are surrounded by safeguards.”

Hoover believed storage would be a safeguard and that further, with sufficient storage a minimum annual flow would not be necessary.

Hoover, using his engineering background, noted that storage falls into two phases: storage to “equate the flow seasonally in the terms of flood control”, and second, “to equate the water over a term of years.” In the short run, in other words, they wanted a dam that could cap-

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Hoover, using his engineering background, noted that storage falls into two phases:

storage to “equate the flow seasonally in the terms of flood control”, and second,” to equate the water over a term of years.” In the short run, in other words, they wanted a dam that could capture some of the high flood waters of spring to stretch the irrigation season later in the year. In the longer run, “over a term of years”, large storage could capture wet year flows for use in dry years.

Hoover believed the seasonal storage was probably somewhere between 5 or 6 million acre-feet and storage to equate over a term of years was probably 10 million acre-feet. He later suggested a total capacity of 18 million acre-feet in either basin.

The issue of how a compact would address storage had divided the Commission since its first meeting back in January. Carpenter, while not opposed to the construction of storage, in concept, was opposed to making a compact contingent on storage by including it as a requirement. He viewed the compact as a legal document defining rights and obligations of the parties. He viewed storage as an operational detail. His position split the upper river commissioners. Utah’s R.E. Caldwell and Wyoming’s Frank C. Emerson were both open to including storage in the compact. In fact, Caldwell made his compact proposal contingent upon six million acre-feet of storage above Lee’s Ferry.

Reminding the others of his position on storage, Carpenter noted “with a minimum flow, the whole question of storage is largely removed, is it not?”

For the remainder of the 15th meeting, the commission continued to discuss the three main propositions, occasionally drifting back to issues related to storage. The two main antagonists, Carpenter and Arizona’s Winfield Norviel, remained at odds on most issues. Importantly Norviel noted that the location of storage did matter. In a prescient comment, he argued that the basin where the reservoir was located would be charged for the evaporation.

The Commission adjourned at noon to reconvene at 3 PM.

16th Meeting

The 16th meeting began with a continued discussion of storage. While the commissioners continued their discussion, Arthur Powell Davis and Colorado Engineering Advisor R.I. Meeker were separately meeting to evaluate and report on the approximate flow at Lee’s Ferry. Davis and Meeker reported that their analysis of the river showed that on average the tributary inflows between Lee’s Ferry and Laguna Dam and the river’s natural losses in that stretch were nearly the same, therefore the flow at Lee’s Ferry was the same as the flow at Laguna Dam. The Fall Davis Report included a table of reconstructed flows at Laguna Dam showing the average flow over the period of 1899 to 1920 was 16.4 million acre-feet. Davis and Meeker went on to explain because system losses on the lower river were less during drier years (less overbank

flooding which reduced evaporation), the flow at Lee's Ferry could be up to 500,000 acre-feet more than the flow at Laguna, Likewise, during wetter years (and more overbank flooding) the flow would be 500,000 acre-feet less, but on average the flow over a period of years was the same.

The discussion turned to existing uses in the upper basin and on the Gila. Davis made it clear that Laguna Dam was upstream of the Gila River. Carpenter noted that for his compact proposal, he assumed that consumptive uses above Lee's Ferry and on the Gila were about the same. Davis responded that upper basin depletions were more, about 2.3 million acre-feet per year, but Gila were probably less than 1.5 million acre-feet annually.

Hoover used the Davis/Meeker report to suggest a compact proposal. He suggested the upper basin deliver 82 million acre-feet every ten with a minimum annual flow of 4.5 million acre-feet per year. His proposal was based on splitting the estimated Lee's Ferry flow (16.4 million acre-feet per year) on a fifty-fifty basis. Davis noted that 82 million acre-feet per year would be sufficient to meet the estimated lower basin mainstem uses plus provide a sufficient cushion to meet the upper basin's share of a future delivery to Mexico. NOTE – today the ten-year obligation of Upper Division States under Articles III(c) and (d) could be as high as 82.5 million acre-feet per year.

Hoover asked the upper basin commissioners to caucus and consider his proposal, then report back tomorrow. The meeting was adjourned until Wednesday, November 14th at 11 AM.



LEE'S FERRY
1870



ENTRANCE TO MARBLE CANYON, COLORADO
RIVER, JUST BELOW LEES FERRY, CA. 1900

EPISODE 12

NOVEMBER 15, 1922



HOW MUCH WATER TO SEND PAST LEE'S FERRY? 100 YEARS AGO IN COMPACT NEGOTIATIONS

Deciding to divide the Colorado River in two created the need for a rule governing how much water the states of the river's Upper Basin would need to send downstream to the Lower Basin

Colorado River Commission Chairman Herbert Hoover gathered the seven states' representatives at 11:00 a.m. Nov. 15, 1922, for the 17th meeting in their efforts to forge an agreement to share the Colorado River.

They had been holed up at Bishop's Lodge outside Santa Fe for five days, wrestling with how to divide the river. By that point in the negotiations they had settled on a general framework, dividing the river into an "upper" and "lower" basin, but were stuck on the question of how much water the upper states would be required to send each year to the lower states.

Hoover intentionally set a later starting time that day to give the upper river states plenty of time to caucus among themselves to consider his proposal from the previous day that the Upper Basin deliver 82 million acre-feet every ten years plus a 4 and ½ million acre foot minimum annual flow.

Quibbling Over the Size of the Upper Basin's Obligation

New Mexico's Stephen B. Davis answered on behalf on the four upper states. His bottom line was that delivering 82 million put too much of the drought risk on the Upper Basin. He countered with a proposal to "guarantee" a flow of 65 million acre-feet every ten years. Davis noted that if the lower river would accept the 65 million, the upper states would negotiate an annual minimum flow.

Davis was likely chosen to be their spokesman to show that the upper river commissioners were united on this issue and their offer was not just Delph Carpenter's, the Colorado representative who so far had monopolized the discussions. New Mexico's Davis went on to explain that the lowest ten-year flow at Lee's Ferry was 155 million acre-feet, thus 82 million was more than 50% of the lowest ten-year period, which Davis put at 77 million. He

100 Years Ago: In the Negotiation of the Colorado River Compact

acknowledged that 65 million was less than a 50-50 equal divide noting since they only had a short 20-year record, they had no idea how low future drought might go, thus even guaranteeing 65 million was risky.

Carpenter supplemented Davis by explained that moving the dividing point from Yuma to Lee's Ferry effectively gave the lower river "all the flow of the lower streams to the territory in which they arrive." He argued that a ten-year flow of 65 million at Lee's Ferry plus the Lower Basin's tributaries would be the equivalent of a fifty-fifty split. Nevada's Scrugham added "Mr. Chairman, I suggest that we abandon the discussion of that six million five hundred-thousand-acre feet per annum which would be out of the question for the lower states to accept. We are so far apart it does not seem that we will get anywhere if this figure is not changed." Stephen B. Davis responded, "This is not a division, we are not dividing the waters, we are guaranteeing water."

Arizona: Allocation Should Be Based on the Needs of Each Basin, Not an Even Split

Arizona's Winfield Norviel simply reiterated his position that an equitable division should be based on the needs of each basin, not an arbitrary fifty-fifty split. He went on to say that the lower basin would accept 82 million plus a 4.5 million minimum annual flow as the basis for a compact, adding that he would accept a four million acre-feet minimum if the upper river changed its ten-year flow to a five-year flow (presumably 41 million every five years). The discussion dragged on with little give on either side. Finally, Hoover stated, "The business of the chairman is to find a medial ground. So, I am wondering if the northern states will make it seven million five hundred thousand?" Hoover suggested a ten-year delivery at Lee's ferry of 75 million acre-feet with a 4 million acre foot annual minimum.

Before they broke for further caucusing, Wyoming's Emerson asked about addressing the needs of Mexico. Norviel responded – "I don't think we need to take that into consideration." To which Carpenter countered "By eliminating the Gila and the Little Colorado and other streams, the factor of risk lies in the allocation of the Mexican Burden. We are willing to bear our share of the Mexican burden, but the sacrifice should be mutual." Norviel added one more compact option. He suggested the river be spilt on an equal basis at Lee's Ferry on an annual basis based a reconstructed (AKA "natural" or "virgin" flow) river. Caldwell immediately responded that determining the river's reconstructed flow annually would be "very difficult, impossible, apractically."

Hoover quickly adjourned the meeting so each basin could caucus. He knew that he had some challenging shuttle diplomacy ahead before they would meet again tomorrow morning.

Authors' Note – One hundred years ago the commissioners were concerned with guaranteeing a flow based on incomplete data. We imagine that if the negotiation were being held today, the conversations would be very similar, but the risks would be due to climate change.

EPISODE 13

NOVEMBER 16, 1922

THE CENTRAL QUESTION IS SETTLED: 100 YEARS AGO IN COMPACT NEGOTIATIONS

It was Nov. 16, 1922, when the Colorado River Compact negotiators settled on the most important part of their agreement – how much water the Upper Basin would have to send downstream for use in the Lower Basin. But they did it with a false promise that echoes today – the idea that there was a surplus in the river.

On Nov. 16, 1922, the representatives of the seven Colorado River Basin states and federal lead negotiator Herbert Hoover settled what is, from today's perspective, the most important element, of the Colorado River Compact.

Holed up a century ago at Bishop's Lodge outside Santa Fe, New Mexico, they had come to agreement on dividing the river into "upper" and "lower" basins, with some water for each, a feature taken for granted in river management in the 21st century but new to their thinking a century ago. But they were at a stalemate on how much water the upper states would be obligated to send to the lower states.

Before adjourning the previous day's meeting, Hoover had put a compromise proposal on the table – the Upper Basin would deliver 75 million acre-feet every consecutive ten years with a four million acre-feet minimum annual delivery. This was ten million more than the Upper basin's 65 million acre-feet offer and seven million less than the 82 million acre-feet that the Lower Basin said they would accept.

During the 18th meeting the commissioners from both basins accepted Hoover's offer and went far beyond that, agreeing to a set of broad principles that could be included in the compact.

The Fantasy of a Surplus

They also made one major change of direction. Through the end of the 17th meeting, the Commission had been focused on dividing the entire river. Carpenter had first suggested a 50/50 split at the Yuma gage (near the border with Mexico). In the most recent meetings, their

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Hoover put it this way – "In our discussions yesterday we got away from the point of view of a fifty-fifty division of the water. We set up an entirely new hypothesis. That we make, in effect, a preliminary division pending the revision of this compact. The seven and a half million acre-feet of flow rights are credited to the South, and seven and a half will be credited to the North, and at some future day a revision of the remaining water will be made or determined."

The technical basis for a three-way split was as follows: The estimated water supply available from the river below Yuma was believed more than 20 million acre-feet annually. Arthur Powell Davis estimated that existing and future consumptive uses in the Upper Basin would total 6.5 million acre-feet annually. In the Lower Basin his estimate was 7.45 million acre-feet, 5.1 on the mainstem and 2.35 on the tributaries.

Allocating 7.5 million for each basin would cover their needs and leave a surplus of 5-6 million acre-feet to be doled out in the future. The language the Commission discussed showed that their intent was not to divide water, but rather to limit appropriations within each

basin – “during the term of this compact appropriations may be made in either division with equality of right as between them up to a total of 7,500,000 acre-feet per annum for each division.”

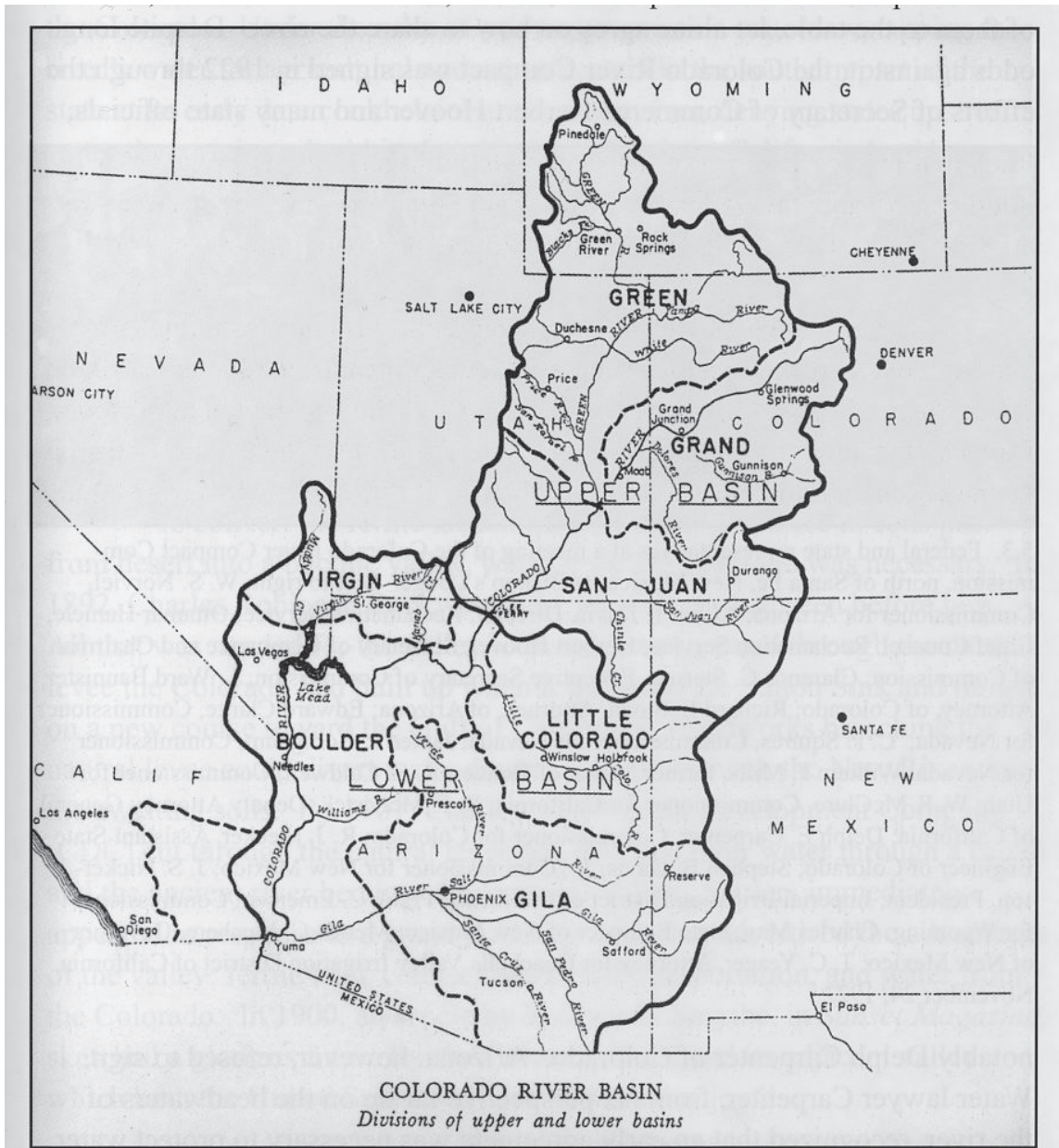
Expanding “The Basin”

The Commission discussed ten basic principles including defining the Colorado River Basin as the hydrologic drainage basin plus places within a basin states, but outside the drainage area where water could be legally used. This made it clear that under a compact transbasin (transmountain) projects would be legal. This was crucial to negotiators for Utah, Colorado, and California. The Commission also agreed on the priority of uses. Domestic (broad definition) and agricultural uses would be superior to power generation and all superior to navigation purposes. It also agreed that the burden of a future treaty obligation would be equally shared between each basin.

The commissioners couldn't agree on detailed language for all the principles, but still the 18th meeting ended on a euphoric note. They all agreed that it was time to for Chairman Hoover to appoint a drafting committee. Hoover appointed Carpenter, Stephen B. Davis, Arizona Legal Advisor Richard Sloan, California Legal Advisor R.T. McKisick, and Reclamation Service Chief Counsel Attomar Hamele. Carpenter Asked that Hoover be an ex-officio member of the committee and Hoover accepted.

The drafting committee met on the afternoon of November 16th and most of the day on both November 17th and 18th.

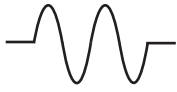
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5.2. The Colorado River Basin showing the upper and lower basins.

EPISODE 14

NOVEMBER 18, 1922



“I WISH TO WARN CALIFORNIA...”: 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Compact Commissioners took a day off from the negotiations, the outside world was beginning to learn about the shape of the deal. And as word filtered out, Arizona’s governor elect offered a warning.

The world outside of Bishop’s Lodge in New Mexico got its first glimpse of the nascent Colorado River Compact in the days following the Nov. 16, 1922, meeting as Commerce Secretary Herbert Hoover briefed reporters on the barest details of what was transpiring behind closed doors.

For the first time, folks back home in the seven Colorado River Basin states saw the emergence of the idea of an “upper division” – Utah, Colorado, Wyoming, and New Mexico – and a “lower division” – Arizona, Nevada, and California.

“Definite allotment of an equal amount of the waters of the river was agreed upon between the two divisions,” wire stories out of Santa Fe reported, “and provision was made for the summoning of a second commission some years hence for the equitable division of the unallotted water, in light of the then increasing knowledge and increasing need.”

“Preference in rights for the use of water is to be established to agriculture,” reporters were told, “and none of the existing rights in the basin are disturbed.”

Enthusiasm in Imperial

For the Imperial Valley, vulnerable to flooding in the river’s southern reaches, the news was good. “The commission agreed upon the extreme agency for immediate erection of control work to protect the Imperial Valley from floods,” the wire dispatches continued. The reaction in Imperial Valley was immediate. “Protection of Valley is Assured”, the Imperial Valley Press headlined.

In Arizona, a Lack of Enthusiasm

But in addition to enthusiasm, there were warnings of the struggles to come. “I wish to warn California right now,” Arizona Governor-elected George W.P. Hunt said in a telegram to the Arizona Republic, “and you can make it as strong as horse-radish that has just been ground, that while I am governor I am going to stick up for Arizona’s rights.” Arizona, Hunt said, should be entitled to half of the Colorado River’s flow. “The center of the river is a state line,” Hunt said. “The center of the river is where the rights of one state cease and those of the other begin.” The seeds of decades of conflict between Arizona and the other states of the basin were being sown, even as the Compact’s final drafting was not complete.

EPISODE 15

NOVEMBER 19, 1922



ARIZONA, MEXICO, AND THE AFTERTHOUGHT OF TRIBAL WATER RIGHTS: 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Colorado River Compact negotiators returned to their talks Nov. 19, 1922, they wrestled with three crucial questions that linger today: accounting for water in Arizona's tributaries, water for Native American communities, and water for Mexico.

After a two-day break to allow the drafters to do their work, the Colorado River Compact negotiators came back together a century ago, on Nov. 19, 1922, to wrestle with three unresolved questions:

- water for Arizona – specifically its use of tributaries within Arizona
- water Mexico
- water for the basin's Native American nations

When they returned for their Sunday morning meeting, it is apparent from the surviving Compact Commission minutes that on Saturday they either met in executive session or Hoover had met with the individual basin caucuses. Three days previously, the commissioners had agreed to 75 million acre-feet every ten years delivery at Lee's Ferry, the provision that would make up the Compact's Article III (d). The issue now facing the commission was how much consumptive use would be apportioned to each basin in this round and did these apportionments include uses on Arizona's tributaries.

Arizona's Dilemma

Hoover began by reading the then-current draft version of Article III (a)

The water of the Colorado River System may be appropriated throughout the Colorado River Basin without restriction until appropriations in either the Upper Basin or the Lower Basin shall reach 7,500,000 acre-feet per annum, including present initiated rights. In that event a notice providing for a new apportionment may be issued under Article IV. If at the time of said

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notice the aggregate of such appropriations in either Basin shall exceed those in the other there is hereby vested in that Basin having the lesser amount a continuing and preferential right to make further appropriations until the total in each of the Basins shall be equal. The unappropriated surplus of waters then remaining above 15,000,000 acre-feet shall be equitably apportioned under Article IV.

Hoover added that Arizona legal advisor Richard Sloan wanted additional language providing in the event the states could not agree on a new apportionment of the surplus waters, either basin could go to court to seek a judicial equitable apportionment.

Hoover then turned to Arizona's Winfield Norviel and asked, "What do you think?"

Norviel responded, "Well, the thing don't mean much to me. I don't understand it at all."

Norviel wanted more details on the 7,500,000 acre-feet and in particular "if this 7,500,000 acre-feet is to include the streams below Lee's Ferry and things of that kind. Yesterday, we arrived at the point of excluding these. Mr. Carpenter made that statement that they were ours utterly to use as we saw fit."

Carpenter interrupted: "No I didn't, not for a minute." New Mexico's Stephen B. Davis stepped in to support Carpenter, noting that even if Carpenter had agreed, "the Northern States had not."

After restoring order, Hoover walked Norviel through his understanding of what they had agreed to, explaining that the proposed definition of the Colorado River System includes the "whole drainage basin of the Colorado River in the United States", so yes Hoover emphasized, "the Gila and all other lower rivers are included" in the 7,500,000 acre-feet.

Norviel's basic problem was that he did not believe the deal on the table gave the Lower Basin enough water. Arthur Powell Davis's estimate for the Lower Basin was 7.45 million acre-feet – 5.1 million for the mainstem and 2.35 million for the tributaries. That left only 50,000 acre-feet for a cushion – what if Davis was wrong, what about reservoir evaporation, and what about the Lower Basin's obligation to Mexico?

It's easy to see why Norviel might have been confused. The Upper Basin's offer to guarantee 65 million acre-feet every ten years at Lee Ferry did assume that the Lower Basin would have full use of its tributaries, as did Hoover's suggestion of 82 million. What Norviel failed to recognize was that those offers were made when the commission was trying to divide the entire river two ways. Under the three-way split – Upper Basin water, Lower Basin water, and a surplus to be dealt with later – the key was limiting each Basin to a specific level of appropriations (7.5 million acre-feet of consumptive use). If Davis was wrong, then a new commission would deal with it in the future from the surplus "unapportioned" pool.

It's also easy to see why Norviel was nervous. He now worked for a lame duck governor,

Thomas Campbell. His successor, George W. P. Hunt had defeated Campbell by running against Arizona's approval of a compact. Norviel knew that if Arizona was ever going to ratify a compact, he had to negotiate a compact with iron-clad protections for existing uses on the Gila River.

After a bit of further discussion, the Commission decided that they were at an impasse with Norviel on Article III (a) so, they decided to move onto other matters. They spent much of the rest of the morning discussing the dispute resolution provision, now Article VI. At the end of the morning meeting, they begin to address one of their most delicate issues, water for Mexico.

Water for Mexico

Hoover opened the 20th meeting at 3:45 PM that Sunday. They began where they left off before lunch, discussing how to address water to Mexico under a future treaty. There had always been the framework of a consensus on how to address Mexico. In his compact proposal, Carpenter had suggested that each basin equally share a future Mexican burden.

Now that they had tentatively decided to set aside a surplus pool, the Commission agreed that any water for Mexico should first come from that pool but in the event the surplus was insufficient then each basin would equally share the deficiency. There was confusion among some of the Upper Basin commissioners over whether the Upper Basin's 75 million acrefeet every ten years included water for Mexico. With Carpenter's help, Hoover cleared that up emphasizing that the Upper Basin's 50% share of any deficiency would be additive to the 75 million acre-feet.

What Hoover wanted the Commission to avoid was putting something in writing in the compact that would give Mexico a future negotiating advantage when the two countries sat down to negotiate a treaty. He even suggested deleting any mention of their discussion of Mexico from the minutes – which did not happen.

After addressing Mexico, the commissioners turned their attention to addressing the priority of different uses. Again, there was general agreement on how to proceed. Irrigation and domestic uses would be superior to power generation, and all would be superior to navigation, but getting the language right was not easy. Further, Hoover's legal advisor Ottomar Hamele expressed concerns that Congress would not agree with them on navigation. They would come back to that issue (and Hamele was right).

Tribal Water

Late in the 20th meeting Hoover raised the question the Colorado River Basin is struggling to come to grips with even today – the rights of the basin's Native American communities. The U.S. Supreme Court had ruled 14 years earlier, in the case of *Winters V. United States*, that Tribes were legally entitled to significant amounts of water. And there were a significant

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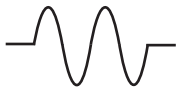
number of Tribal communities in the Colorado Basin. But Hoover's approach to the issue demonstrates the gap between the legal intentions of Winters and the political and cultural reality of the treatment of tribes.

In offering a proposed compact provision, Hoover referred to it as the "wild Indian Article", demeaning language echoing a tone of superiority that was prevalent a century ago and would continue to characterize how the European settler-based water management community would address the water needs of the basin's tribes for much of the century that followed. His language was simple: "Nothing in this compact shall be construed as effecting the rights of Indian Tribes." James Scrugham immediately asked. "Why include any provision in the compact?" Hoover responded "to protect the U.S. who have treaties with the Indians" adding "these treaty rights would probably exceed these rights anyway. We don't want the question raised." The vote on Hoover's proposed Article failed when Wyoming's Emerson says he wanted "to withhold his decision."

The Commission then adjourned until 10 AM the next morning. They had accomplished much during the two Sunday sessions, but the commissioners were not happy. They needed to find a way to address Norviel's concerns with the apportionment Article, the primary purpose of the compact.

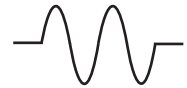
EPISODE 16

NOVEMBER 20, 1922



A PATH TO SOLVING THE ARIZONA PROBLEM? 100 YEARS AGO IN COMPACT NEGOTIATIONS

On Nov. 20, 1922, the historic injustice that Colorado River management imposed on Native American communities was locked into law with little discussion, while the commissioners quickly turned to Arizona's water needs and the need to protect the Imperial Valley from flooding



As Chairman Herbert Hoover gaveled the 21st meeting of the Colorado River Commission to order on the morning of Nov. 20, 1922, they faced two big issues: Arizona's concerns that the proposal on the table would not provide enough water for Lower Basin water users, and the question of whether to include construction of a dam as part of the Compact's language. Hoover understood that unless they could find acceptable solutions to both topics, ratification of the compact by all seven states was doubtful.

First, however, Hoover suggested they "take up one or two of these subsidiary articles and see if we can't clear them out of the way." After that he needed to focus the discussion back to the two major issues where there was still no agreement.

Tribal Water, and Remedies

The first order of business was to revisit the issue of how to address Indian water rights. Hoover suggested an alternative the original provision that failed had failed to get approval from Wyoming's Frank Emerson. Hoover's new article read "Nothing in this compact shall be construed as affecting the obligations of the United States to Indian tribes." The term "rights" had been removed. This satisfied Emerson, but he still questioned the need to include the provision in the compact. Hoover responded that the article's purpose was to remove a potential objection to the compact by Congress.

With the Indian article (now Article VII) passed, the Commission went on to the next subject, an article drafted by Stephen B. Davis on remedies. After some wordsmithing the article passed (now Article IX) – "Nothing herein contained shall be construed to prevent or limit any state

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from initiating and maintaining any action or proceeding legal or equitable for the protection of any right under this compact, or the enforcement of any of the provisions thereof.” This short discussion was the closest the Commission ever got to discussing what today is commonly referred to as a “compact call.”

Protecting Imperial

After a bit more discussion of subsidiary articles, California’s W. F. McClure, its commissioner and state engineer, asked Hoover if he could raise an issue he considered “very vital.” Of the seven state commissioners, McClure had until now, been the quietest, rarely participating in the active dialogue. Now he needed their attention. He went on to say that his constituents in California understood the need for a legal document allocating water between the divisions, but there was a similar need for the basin states to support the construction of a storage reservoir to protect the Imperial Valley from flooding. McClure reiterated his request that the compact not become effective until the construction of “a dam to be built in Boulder Canyon.” For the Californians, especially the large contingent from the Imperial Valley, storage was their core issue. The upper river states had now twice blocked the Congressional authorization of storage because there was no compact protecting their rights. Now they feared the Upper Basin states would get their compact but leave California hanging with no assurance that they would support the Boulder Canyon Project. It was a difficult problem. The individual commissioners or for that matter, their governors, or their local legislators had little control over what Congress might do.

Colorado’s Delph Carpenter was unmoved. He again expressed his conceptual support for the construction of storage to protect the Imperial Valley but refused to accept a provision that would make the compact contingent upon the construction of storage. This time he had the full support of his three upper river colleagues. Carpenter offered a resolution from the Commission as an alternative. From the first meeting of the Commission ten months ago, Hoover had been an advocate for including storage in the compact, but Colorado’s Carpenter had been just as consistent in his opposition to it. Now, as they were close to completing their task of writing a compact, it was time to end the verbal debate and find a practical way to deal with the issue that would allow the compact to be ratified by all seven state legislatures.

Hoover then planted the seeds for a potential path forward, pointing out that the Imperial Irrigation District had existing perfected water rights. Under the recent Laramie River case, they might be entitled to what he called a minimum flow. He added “they feel that this pact will destroy any rights which they have for the maintenance of minimum flows.” The implication was that the compact would protect water users in the upper river that now had rights junior to the Imperial Valley with or without storage, but only storage would protect the Imperial Valley. The solution to this problem might be a general agreement on a legal principle that the compact could not impact or impair rights that existed before the compact until storage was built. In Hoover’s view this would generate significant pressure on the Upper Basin to support the Boulder Canyon Project. During the discussion Hoover warned the others that “unless these people are given some protection, they will suspend confirmation of this compact.”

The matter was left unresolved, but the door was left open after Hoover's suggested that New Mexico's Stephen B. Davis draft language, which McClure agreed to.

Arizona's Lingering Questions

The Commission then turned to Arizona's Winfield Norviel's concerns with Article III, the apportionment provision. He was now more convinced that 7.5 million acre-feet was not enough for the Lower Basin. Hoover reminded the commissioners that they had concluded they did not have sufficient data to make "an equitable division of the waters" thus, "there should be made by us a preliminary division to be followed by a revision at some subsequent date." Norviel responded that based on the information they did have from the table prepared by Reclamation's Arthur Powell Davis, the annual needs of the Upper Basin were 6.5 million and for the Lower Basin 7.68 million, which included the Gila and Little Colorado Rivers. Therefore, the split should be 44.5% for Upper Basin and 55.5% for the Lower Basin.

Note for the reader: The Minutes do not include the table that Norviel was referring to. Elsewhere in the minutes Davis estimated that the Lower Basin's uses would total 7.45 million acre-feet per year including the Lower Basin tributaries. He also estimated that evaporative losses on a Boulder Canyon Project (Lake Mead) would be 240,000 acre-feet per year, a total of 7.69 million. The problem is that his 240,000 acre-feet estimate is far too low. Evaporation off a full Lake Mead is closer to a million acre-feet per year. Figures from the Fall-Davis Report which Davis often used as the technical resource for the negotiations, show the total Lower Basin evaporation could have been up to 1.5 million acre-feet per year on the Boulder Canyon, Bullhead (now Davis Dam), and Parker Dam- all three reservoirs (or their predecessors) were included in the technical section of the report. Whether Davis was simply mistaken or intentionally low-balled the estimate is a matter of speculation, but the implications remain with us today. Not considering the evaporation data that was available has contributed to the overuse of water in the Lower Basin.

Attributing the proposal to Nevada's James Scrugham, Hoover described four options the Commission should consider:

- Stay with a permanent 7.5 million acre-feet appropriation limit for each basin which includes present and future uses, if this is not enough for the Lower Basin, a future commission can deal with it during the next apportionment round. Norviel was already on the record as opposed to this one.
- Limit each Basin to 8.5 million acre-feet, and during the next round, the basin with the lesser development would be given a preferential right to develop up to 8.5 million. The next round would only apportion the remainder over 17 million acre-feet.
- Limit each Basin to 8.5 million acre-feet, during the next round if a basin had not reached 8.5 million acre-feet, the amount not being used over 7.5 million would be available to either basin.

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- Limit each basin to 7.5 million acre-feet but allow the Lower Basin to increase its use by one million acre-feet per year for a total of 8.5 million. The amount available for apportionment in the next round would be the water available over 16 million (plus any water provided to Mexico).
- Hoover suggested that the Lower Basin caucus first and decide which alternative they preferred then take that to the Upper Basin. He also appointed a small drafting committee to put each option into compact language.
- Hoover adjourned the meeting but did not set a time and date for the next regular meeting. He knew for at least the next day he would be very busy working with each caucus. Plus, he would need to meet with some very upset Californians.

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EPISODE 17

NOVEMBER 22, 1922



AGREEING APPORTIONING THE RIVER: 100 YEARS AGO IN COMPACT NEGOTIATIONS

With a break in the talks, we began to see the view from afar, as Herbert Hoover began the job of selling the Compact to a waiting nation, and Arizona continued to worry about its share.

When the Colorado River Compact Commission adjourned two days previously, on Nov. 20, 1922, two major Colorado River Compact issues had been left unresolved; the amount of water that would be apportioned to the Lower Basin and how the compact would address the need for storage to protect the Imperial Valley from flooding and stabilize river flows. The commission had also identified potential solutions to both.

The View from Afar

The view from outside the tense, cloistered negotiations being held at Bishop's Lodge outside Santa Fe remained optimistic. In a widely publicized telegram to President Warren G. Harding, Commission Chairman Herbert Hoover (who was then Harding's Secretary of Commerce) described the unprecedented nature of the nearly completed task:

It is worthy of note that this is the first occasion when more than two states have come together under the direct provisions of the constitution established through this method the solution of interstate difficulties outside the courts.

But in a blunt case of dueling public telegrams, Arizona's Governor-elect, George W. Hunt, warned that getting seven state buy in remained an uphill slog. Arizona, he wrote, would not sign onto a compact until its rights to water, and infrastructure, to meet the state's ambitious irrigation plans were clarified.

Even as the negotiators closed in on a deal at Bishop's Lodge, Hunt's increasingly strident rhetoric made clear that what came after the negotiations would not be easy.

The Lower Basin's Extra Million Acre Feet Confirmed

The commissioners and their advisors had spent a busy Tuesday caucusing and having"

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individual discussions about closing the deal and agreeing to a compact. They made considerable progress.

Hoover opened the 22nd meeting with a discussion of Article III, the apportionment of the use of water between the two basins. Arizona's Winfield Norviel had tentatively agreed to compromise alternative #4 from the solution list that Nevada's James Scrugham had suggested. The Lower Basin would be given the rights to increase its uses by an additional one million acre-feet per year making its total apportionment 8.5 million acre-feet.

Hoover then took the commission through seven subparagraphs of Article III. In addition to a new Article III(b) providing the Lower Basin with the additional million acre-feet, the drafting committee had decided to change the language of Article III(a), instead of limiting appropriations, the compact would be apportioning beneficial consumptive use between the two basins. Hoover noted that because they couldn't agree on a common definition of the word, they had decided to avoid using the term "appropriation" in the compact. Wyoming's Frank Emerson had raised another concern, he wanted the compact written so that the common person could understand it.

Article III(a) apportions in perpetuity to each basin "for its exclusive use, 7,500,000 acre-feet per annum, which shall include all water necessary for the supply of any rights which may now exist." Norviel asked why the division is being made between the two basins, not the two divisions. Hoover responded, "the division we confine purely to a political division and the basin to a physical division." Hoover then read Article III(b), "The lower basin is given the right to increase its beneficial consumptive use by the further quantity of one million acre-feet per annum." The commissioners suggested several potential wording changes, but decided to agree to it for the moment, then come back to it for further wordsmithing.

Water for Mexico and the Expectation of "Surplus"

Moving on Hoover noted that the provision dealing with water for Mexico had been moved from a separate article (IV) to Article III(c), but the concept was the same. Water for Mexico would first come from the surplus. If the surplus was insufficient, then the deficiency would be equally borne between the two basins and the States of the Upper Division would deliver one half of deficiency at Lee Ferry in addition to that provided in paragraph III(d). Again, individual commissioners made suggestions for wording changes, but the commission agreed to the paragraph in concept.

Article III(d) remained basically unchanged from previous drafts; the States of the Upper Division would not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75 million acre feet every ten years nor below a flow of four million acre-feet annually.

At this point in drafting, the commission assumed that the water accounting year would run from July 1st to June 30th.

They then moved to Article III(e), which prohibited the States of the Upper Division from withholding and the States of the Lower Division from requiring the “delivery of water which cannot reasonably be applied to beneficial, agricultural, and domestic uses.” James Scrugham raised the question of how this applied to mining, milling, and such uses. Hoover suggested they deal with that in the definition of “domestic”

The remaining discussion focused on Articles III(f) and (g), the provisions setting out the details for the future apportionment of the surplus pool. While several commissioners were confused by the initial wording, the concept was that under III(f) a further apportionment could be made of the water unapportioned by paragraphs III (a), (b), and (c) after July 1st, 1968, and when either basin had reached the total beneficial consumptive use set out in III(a) and (b). Paragraph III(g) provided that any two states or one state and the president of the United States could give notice to the other states to trigger the next apportionment round. The next agreement would also be subject to ratification by the legislatures of each state and Congress.

There was general agreement except for the date when the new apportionment round could be triggered. Arizona's Norviel wanted a shorter period, no more than 30 years. The upper river commissioners wanted a longer period.

They would end up compromising on a 40year period. Authors note: today given the reality that the flow of the river is much smaller than what was assumed in 1922, these two articles are almost never discussed, but to the commissioners that negotiated the compact in 1922 they were essential to the political compromises necessary for unanimous agreement on the compact, illustrating how important the overestimate of the river's flow, discussed in our book *Science Be Dammed*, was to the negotiators' ability to come to agreement.

Whither Storage

With the caveat that more drafting was needed, Commission had reached agreement on Article III, a major accomplishment. The question of how deal with storage remained unsettled. Hoover planned to address this issue in the next meeting, their 23rd, scheduled for that afternoon. In the remaining morning session, Hoover turned to the issue of navigation and a provision proposed by his federal legal advisor, Attomar Hamele.

There was agreement in the room that the Colorado River was no longer navigable, and navigation should not interfere with other beneficial uses. But what if Congress did not agree? In fact, both Hoover and Hamele were predicting that many in Congress would not agree. Hoover's solution was to suggest that if Congress did not agree, the remaining provisions of the compact would remain, and the pact would not have to be renegotiated. James Scrugham suggests a committee to draft such language.

Hamele suggested a compact provision that protects the rights of the United States. He pointed out that project works built and funded by the United States were the largest source of

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irrigation water in the basin and many more were being planned and that these projects needed full protection. If he had stopped there, he may have succeeded, but he went on to tell the commissioners that the United States also had a claim to the unappropriated waters in the basin. To that, all eight commissioners objected. After a difficult discussion, Hoover concluded “an expression reserving the unappropriated waters destroys the entire basis and sense and purpose of this whole commission.” Nevada’s Sruham added that with such a provision none of the seven states would ratify the compact. The discussion ended.

After a long break, Hoover convened the 23rd meeting at 3:45 PM. He immediately turned to the new Article VIII which he hoped would address the Californians need for a storage provision. After the meeting Hoover and McClure had convened with the Californians most had left Santa Fe angry and disgusted. Hoover, recognizing his mistake, convinced J. S. Nickerson, President of the Board of the Imperial Irrigation District to stay and assist McClure.

After a discussion and wordsmithing of the drafting committee’s proposal, Hoover read the proposed article VIII; “Present perfected rights to the beneficial use of the waters of the Colorado River System shall constitute the first charge upon the water hereby apportioned to that division of the basin in which they are situated. All uses which may be perfected subsequent to the effective date of this compact shall be satisfied exclusively from the remaining water apportioned to that division of the basin in which they are situate and shall have no claim upon any part of the water apportioned to the other division of the basin. Whenever works of capacity sufficient to store 5,000,000 acre-feet of water have been constructed on the Colorado River within or for the benefit of the lower basin, any rights which the users of water in the lower basin may have against the users of water in the upper basin shall be satisfied thereafter from the waters so stored.” The drafting committee had also proposed adding the remedies language to the end of paragraph VIII (combining paragraphs VIII and IX).

The commissioners, except New Mexico’s Stephen B. Davis, were OK in concept, but thought the language was very confusing. The Commission would end up discussing numerous drafts before the article was finalized. Stephen B. Davis, although appointed by Hoover to help with the drafting, was now an unwilling participant. He told the others he strenuously objected to the third sentence of the paragraph. Davis, a New Mexico Supreme Court Justice, found the legal logic flawed. If the concept was that perfected rights that existed before the compact could not be impacted by the compact, how could that same compact limit them by requiring that they be satisfied by future stored water? Davis added that he would not, however, vote against the article and interfere with the unanimous approval of the compact. Carpenter preferred the storage trigger be 1,000,000 not 5,000,000 acre-feet but understood the lower river would not go that low.

A 4 Million Acre Foot Flow Minimum?

Recognizing that Article VIII needed more work, they went onto other matters including a broad discussion of article I, the purposes of the compact. Before they adjourned, Hoover raised the question of the four million acre-feet annual minimum annual flow under Article

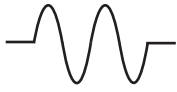
III(d). Now with Articles III(e) and VIII, was it still needed? Winfield Norviel responded that he was still in favor of it. Hoover then adjourned the meeting until Thursday at 9:30 AM, but requested the drafting committee continue their work in an evening session.



COLORADO RIVER, UPSTREAM FROM THE
BLACK CANYON

EPISODE 18

NOVEMBER 23, 1922



WORDSMITHING DETAILS AS TIME RUNS

SHORT: 100 YEARS AGO IN COMPACT NEGOTIATIONS

It was snowing like crazy at Bishop's Lodge outside Santa Fe as the Colorado River Commission Chairman Herbert Hoover called the 24th meeting to order at 9:45 AM on the morning of Nov. 23, 1922. The Commission had only about 30 hours left before its Friday afternoon target for signing the compact and the "punch list" was long. Conceptually, the commissioners agreed on all of the compact's major provisions, but drafting challenges remained.

It was snowing like crazy at Bishop's Lodge outside Santa Fe as the Colorado River Commission Chairman Herbert Hoover called the 24th meeting to order at 9:45 AM on the morning of Nov. 23, 1922. The Commission had only about 30 hours left before its Friday afternoon target for signing the compact and the "punch list" was long. Conceptually, the commissioners agreed on all of the compact's major provisions, but drafting challenges remained.

They began with a discussion of "domestic." For the purposes of Articles III (e) and IV, rather than include a long list of water uses like mining, milling, manufacturing, and so on, they decided to define a broad group of uses as "domestic." They could agree on what it didn't include – it didn't include agriculture, power generation, and navigation, so everything else would be domestic. But it wasn't that simple. What if a mine had its own hydroelectric power plant? Was that a mining or a power generation purpose? They ended up agreeing to "The term 'domestic use' shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power."

The discussion then turned to Article III(d). Overnight Winfield Norviel had changed his mind. He was now OK with dropping the four million acre-feet minimum annual Lee Ferry flow requirement. It was one of many compromises Norviel had made during the negotiations,

100 Years Ago: In the Negotiation of the Colorado River Compact

and it wouldn't be his last.

The Commission then had a long and difficult conversation about Article IV, the priority of uses. The article had three paragraphs

- IV(a) was a statement that the Colorado River was no longer navigable, but with language added that if Congress did not agree, the “the other provisions of this compact shall nevertheless remain binding.”
- IV(b) made it clear power generation was a legal use but made it subservient to agricultural and domestic uses.
- IV(c) stated that this article did not apply to the internal appropriation, use, and distribution of water within a state.

Utah's R.E. Caldwell was opposed to the provision protecting the compact if Congress didn't accept the navigation clause. Although he understood the reason Hoover suggested including the provision, his concern was including the language would be giving Congress the opportunity to step in and interfere with water projects within states. Ultimately, Caldwell agreed that, despite his objections, he would not vote against “the pact.”

Similarly, Colorado's Delph Carpenter wanted to expand paragraph IV. but ultimately agreed to only minor wording changes.

By the end of the 24th meeting, which lasted much of the day, their punch list has been whittled down to several minor wording changes and paragraph VIII. Hoover adjourned the meeting at 3 PM but asked the drafting committee to reconvene immediately. The 25th meeting would convene at the Chairman's call after the drafting committee had done its work. Hoover called the 25th meeting for 7:30 PM that evening. The Commission then went through a list of editing changes. Importantly, the Commission finally reached agreement on Article I, the purpose of the compact:

The major purposes of this compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water, to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods. To these ends the Colorado River Basin is divided into two Basins, and an apportionment of the use of part of the water of the Colorado River System is made to each of them with the provision that further equitable apportionments may be made.

EPISODE 19

NOVEMBER 24, 1922



THE COMPACT IS SIGNED: 100 YEARS AGO IN COMPACT NEGOTIATIONS

The final day of the Colorado River Compact negotiations seemed almost anticlimactic. A bit of wordsmithing, and the Commissioners headed down the road to New Mexico's Palace of the Governors to sign the Colorado River Compact.

Wordsmithing “Unperfected Rights”?

Unable to reach a final agreement on Article VIII on Thursday evening, the Commission met again on Friday morning, Nov. 24, 1922, at 10 AM. They began with a discussion of “unperfected rights.” The concept behind the article was that rights that were then using water would not be impacted by the compact but once storage of at least 5,000,000 acrefeet of capacity was available, perfected rights on the lower river, like the Imperial Irrigation District, would be solely satisfied by that storage and would no longer have the right to call for water being used by junior rights upstream of Lee Ferry. All unperfected rights, including what Hoover call “inchoate rights” – those that were being planned but were not yet using water – could only consume water apportioned to the basin in which they were situated.

There were many of these inchoate rights out there, including George Maxwell's Arizona Highline Canal which would eventually evolve into today's Central Arizona Project. There was also the Girand Project, a proposed large private power dam in what is now the western Grand Canyon, and Los Angeles was in the early stages of exploring an aqueduct from the Colorado River. The compact would be useless if these types of projects had potential claims on the water uses above Lee Ferry. The commission finally, but reluctantly, agreed to:

“Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact. Whenever storage capacity of 5,000,000 acre-feet shall have been provided on the main Colorado River within or for the benefit of the Lower Basin, then claims of such rights, if any, by appropriators or users of water in the Lower Basin against appropriators or users of water in the Upper Basin shall attach to and be satisfied from water that may be stored not in conflict with Article III. All other rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that Basin in



THE COLORADO RIVER AT END OF TRAIL, 4500 FT.
BELOW THE RIVER, GRAND CAÑON, ARIZONA

which they are situate.”

New Mexico’s Stephen B. Davis summed up the attitude of many of the commissioners when he declared “I will register my vote as a ‘yes’ on that article. I do it only because to my mind it is the least objectionable of the attempts that have been made to frame the idea expressed in it, and not because I approve it.” Before approving the compact, they made at least two more changes that morning. They agreed to drop the introductory sentence in Article III and they dropped the definition of “apportionment” in Article II. (Note: at some point they also changed the accounting year in III(d) from July 1 -June 30 to October 1- September 30, but there is no mention of it in the minutes.)

The Commission held one more meeting that afternoon, its 27th formal meeting. It was mainly for housekeeping matters. They refused a request by Arizona’s Norviel to either support or not oppose the Girand Project that was then pending before the Federal Power Commission. Instead, they agreed that Hoover should send a letter asking that any future power permits be made subject to the compact. They then passed a resolution supporting the construction of a large dam on the Colorado River by the U. S. Government. The two actions were related. Hoover, Arthur Powell Davis, and McClure all opposed the Girand Project because they believed it would interfere with the proposed Boulder Canyon Project.

Reflecting on What They Accomplished

Before ending the meeting, they took time to congratulate one another on what they had accomplished. On behalf of his fellow commissioners Delph Carpenter, who nearly three years ago had suggested a compact be negotiated, made the following remarks for the record.

We have about completed the task assigned to this commission, which is the first exemplification of interstate diplomacy in the history of the United States on so large a scale. Carpenter went on to thank Hoover:

Our Chairman is due the great measure of credit for making possible this successful conclusion.

Hoover thanked all those present noting.

It has been one of the problems of more extreme complexity than will ever be appreciated by the outside world; and in the sense of service, and in the sense of restraint and in the willingness to compromise, it also has striking character. Had it not been for the character of the men who have been here, there would have been no compact.

Hoover went on to add that the “days of romance of the West are gone, and the job of western man is one of construction.” Adding, “It is possible this will stand out as one of the landmarks of Western development.” The commissioners then made the trek through the snow into Santa Fe where they signed the compact at the Palace of Governors.

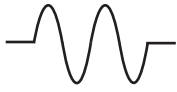
100 Years Ago: In the Negotiation of the Colorado River Compact



COLORADO RIVER TODAY

EPISODE 20

NOVEMBER 25, 1922



THE DEAL SIGNED, THE RHETORIC SOARS: 100 YEARS AGO IN COMPACT NEGOTIATIONS

As the Colorado River Compact's negotiators trekked home in the final week of November 1922 following the completion of their task, the rhetoric soared. Newspapers across the basin published the text of the Compact in full, and the leaders of the negotiation effort fanned out to praise the effort and lay the groundwork for the next steps.

Herbert Hoover, the Commerce Secretary, Commission chairman, and the diplomat who had steered the negotiations through the narrow space for compromise available, spared little in his enthusiasm, nor in his optimism of the next steps. From a Los Angeles radio address:

The foundation has been laid for a great American conquest. The harnessing of the giant Colorado river will follow the ratification of the pact by the seven states of the Colorado river basin. With such ratification, the next step will be the construction, without delay, of a control dam, under authorization of congress.

Then the southwest will come into its magnificent heritage of power and life giving water, and all the nation will be vastly benefitted.

Arthur Powell Davis, head of the Reclamation Service and technical leader of the Compact efforts, framed the agreement as an end to conflict over the river's water:

It will obviate the delay and acrimonious litigations which a year ago seemed imminent and has cleared the way for the provision of flood control and irrigation storage urgently needed and indispensable to further development in the Colorado river basin.

There would be "millions of homes" (Hoover's words), a vast expansion of irrigation, and flood protection for the Imperial and (Hoover was at pains to point out to the Arizonans) Yuma valleys.

The Sales Pitch – Plenty of Water for All

Reclamation's Davis laid out the central sales pitch:

The natural flow of the Colorado river averages nearly 20,000,000 acre feet per annum.

The Upper Basin's 7.5 million acre foot allocation was "more than double its present needs," enough to bring another 3 million acres under irrigation, "sufficient for all feasible projects, and some of doubtful feasibility."

Similarly, with the creation of storage, the Lower Basin would be able to greatly expand its irrigated acreage.

And with all that, Davis argued, the deal left a 4 million acre foot "surplus", enough to meet the needs of a future treaty with Mexico and to return in the future to reallocate the rest.

Next Steps

The next steps – ratification, legislation, construction – seemed naively simple.

"Confidence that all the state legislatures will approve the compact was expressed by various commissioners," the wire services reported out of Santa Fe.

As if ratification might be treated as a formality, attention turned immediately to Congress, where officials eyed the pending Smith-McNary bill as a vehicle to launch the Colorado River projects.

Both would take far more time – six years for Congressional action, more than two decades for state ratification, with the start of construction sandwiched in between.

But the changes to the West to be wrought by the Compact's fewer than 2,000 words were now underway.

EPISODE 21

NOVEMBER 27, 1922



HEADING HOME: 100 YEARS AGO IN COMPACT NEGOTIATIONS

After signing the Colorado River Compact on Friday, Nov. 24, 1922, the commissioners and their advisors returned to their home states. The compact would not become effective until it had been ratified by the legislatures of each of the states and the United States Congress. It was now time to prepare reports, answer questions, and work for state approval.

The ratification process was difficult. It would take 78 months before Congress finally approved a six-state pact and 22 years before all seven states agreed to it.

Arizona: Norviel

Arizona's Winfield Norviel had the most difficult path ahead. Governor-elect George Hunt was opposed to the compact. Norviel knew that his job as the state's water commissioner would be ending soon after Hunt took office. It's a credit to Norviel that he simply didn't tell the other commissioners that, given Hunt's position, Arizona was not interested in agreeing to a compact, pack his bags and go home. Instead, he went back to Arizona and advocated for ratification. Hunt was reelected in 1924, again in 1926, lost in 1928, then won for the last time in 1930, always championing his opposition to the pact. Norviel died in 1935, nine years before Arizona ratified the compact.

Utah: Caldwell

Utah's R.E. Caldwell returned to Salt Lake City and wrote a detailed report recommending ratification of the compact. The Utah legislature quickly complied. Caldwell resigned as State Engineer on July 1st, 1924, to "attend to personal business." There is no evidence in the record that Caldwell stayed involved in Colorado River issues after his resignation. George Dern, who defeated Charles Mabey in 1924 for governor became Utah's point man on the Colorado River. Caldwell died in 1959. California: McClure California's W. F. McClure returned to Sacramento and wrote a short report. With the help of the Imperial Irrigation District, he obtained a clean ratification on February 3rd, 1923.

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In 1925, the California Legislature made its approval of the compact contingent upon Congressional approval of the Boulder Canyon Project. McClure never developed an effective working relationship with nor gained the full trust of the Imperial Irrigation District officials and the other Southern Californians with interests in Colorado River. He was a critic of the All-American Canal Project. McClure died in 1926. To represent the state on Colorado River matters California created the five-member Colorado River Commission in 1927 which became the Colorado River Board of California in 1937.

New Mexico: Davis

New Mexico's Stephen B. Davis wrote a short report recommending ratification and, like Utah, its legislature quickly ratified the compact. On the same day that it approved the Colorado River Compact, February 7th, 1923, it also ratified the La Plata River Compact. The compact which covers a small tributary of the San Juan River shared by New Mexico and Colorado was negotiated by Carpenter and Davis and signed on November 27th. During the negotiations, Davis, who had resigned from the New Mexico Supreme Court when he was named its Colorado River Compact Commissioner, gained Hoover's respect and confidence. In 1923 he became Solicitor of Hoover's Department of Commerce. He later practiced law in New York from 1928 until death in 1933.

Nevada: Scrugham

James Scrugham, who had been elected Governor in November 1922, returned to Carson City and wrote a short report. Nevada's legislature became the first state to ratify the compact on January 27th. He lost his bid for reelection in 1926. From 1932 – 1942 he was Nevada's sole member of the U. S. House of Representatives. He was elected to the U. S. Senate in 1942, serving until his death in 1945.

Wyoming: Emerson

Wyoming's Frank Emerson wrote a detailed report. The Wyoming legislature ratified the compact on February 9th, 1923. Emerson also became a governor, elected both in 1926 and 1930. As governor, he was actively involved in Colorado River matters, pressing Congress for approval of the compact and authorization of the Boulder Canyon Project. Emerson died while in office in 1931.

Colorado: Carpenter

Colorado's Delph Carpenter returned to Greeley, Colorado where he also wrote a very detailed report, but ratification by his state was not easy. In March he had to write a supplemental report and call on Hoover to help him address several questions. Colorado ratified the compact on April 3rd, 1923. After Hunt was reelected Governor of Arizona in 1924, Carpenter became

convinced that Arizona would not ratify the compact, so he became the quarterback of the six-state approval process that was implemented in 1928 when Congress passed the Boulder canyon Project Act. Carpenter, heralded as the father of interstate water compacts, was afflicted with Parkinson's disease. He became bed-ridden in 1933 and died in 1951.

Chairman Hoover

Commission Chairman Herbert Hoover worked with the other commissioners to obtain ratification by their states. In 1928, he was elected as the 31st President of the United States. As president, on June 25th, 1929, he issued a proclamation declaring the Boulder Canyon Project Act effective. The act provided Congressional approval of the compact and authorized the construction of Boulder Dam, now Hoover Dam, and the All-American Canal. The legislation included a six-month window for California to limit its uses to 4.4 million acre-feet per year of Article III(a) water (plus ½ of the unappropriated surplus), for Utah to approve a six-state compact, and for the basin states to make one more attempt to make an agreement with Arizona. They failed. Hoover lost the 1932 election to Franklin Roosevelt in 1932. He died in 1964.

Reclamation's Davis

The Commission's primary technical advisor was Arthur Powell Davis, Director of the Reclamation Service. Davis returned to Washington D.C. where he helped Hoover address Congressional questions about the pact. More of a hands-on engineer and visionary than an administrator, Davis saw the compact as key to approval of the Boulder Canyon Project, which would reenergize his struggling agency.

The struggles ran deep. Two decades after the Reclamation Act laid out a vision for irrigating the West, projects were floundering, with farmers largely unable to repay the ten year interest free "loans" from the federal government that were the projects' financing mechanism. The original ten year payback scheme had already been extended to twenty, but many irrigation projects were nevertheless abandoned because the irrigators could not pay.

On June 19th, 1923, the day after the Reclamation Service became the Bureau of Reclamation, Davis was dismissed by Interior Secretary Hubert Work. A year later Elwood Mead was hired as Commissioner. Under Mead, the Bureau of Reclamation would become a major agency building the world's tallest dam, Hoover Dam, and the world's largest hydroelectric project, Grand Coulee. Davis then became a consultant for California agencies. He died in 1933. In 1941, Interior Secretary Harold Ickes proclaimed that the dam being planned on Colorado River below Hoover dam at Bullshead (also known as Bullhead) would be named after Davis.

The Others

Two technical advisors, Colorado's R. I. Meeker and Utah's Dr. John Widstoe participated in both the 1922 and 1948 Compact negotiations. For the 1948 Upper Basin pact, Meeker was an advisor to Arizona.

As far as the authors can tell, no women were listed in the attendees to the Colorado River Compact negotiations. It is likely that Commission Secretary Clarence Stetson had clerical help. If so, they were never acknowledged.

There is no evidence that any Tribal members attended, or were even consulted, about the fate of the river in whose basins they had been living for time immemorial.

