

# The Colorado River Compact

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## THESIS

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*To My Parents*



## PREFACE

The present volume on the Colorado River Compact has been completed with the hope that it will stimulate further study of the compact clause of the Constitution of the United States, and of the questions which center around the improvement of this interstate stream. Pending legislation provides that construction is not to begin until the interstate agreement shall have been ratified by the legislatures of the seven interested states, or by at least six of those states. Ratification is insisted upon by various groups in certain states; other groups in other states vigorously oppose it. The key position which the Compact holds in any general scheme of development is therefore apparent.

Data presented in this book have been selected with the view of presenting both sides of all disputed points. The minutes of the meetings and proceedings of the Colorado River Commission which drafted the terms of the Colorado River Compact in 1922 have been examined with care. Other records have also been the subject of close scrutiny during four years of graduate study at Harvard University.

Throughout the preparation of this volume I have been favored with the counsel and advice of many whose suggestions and criticisms have proved invaluable. The following members of the Harvard faculty have given helpful suggestions from time to time: Thomas Nixon Carver, John Dickinson, W. Y. Elliot, James Ford, Felix Frankfurter, S. S. Glueck, Albert Bushnell Hart, William E. Hocking, Manley O. Hudson, Charles H. MacIlwain, Frederick Merk, William McDougall, William B. Munro, Roscoe Pound, Thomas Reed Powell, Frederick Jackson Turner, George Grafton Wilson, Henry A. Yeomans. But most of all I wish to acknowledge the kindly interest, continued encouragement, and helpful suggestions of Professor A. N. Holcombe, under whose immediate supervision and direction this thesis has been prepared. To my father, Mr. Frank A. Olson, special mention is due for his help in keeping me in touch with developments in the Southwest.

I wish also to thank Judge Stephen B. Davis, Acting Secretary of Commerce; Mr. O. C. Merrill, Executive Secretary of the Federal Power Commission, Mr. Paul S. Clapp, Assistant Secretary of Commerce, and Mr. Arthur W. Coombs of the Department of Commerce, for the courtesies extended to me while engaged in research work at Washington. Indeed, to mention at this point the names of all those in different parts of the country who have given me assistance from time to time, would be impracticable. The reader must be referred to the footnotes which appear throughout the book, for in them and in

the section entitled, "Who's Who in Colorado River Development," this information appears.

It has not been my purpose to uphold the views of any one group interested in the development of the Colorado River. On the other hand, I have attempted to appraise all evidence in a scientific and scholarly manner. Those who read the book must judge of the degree to which this end has been realized. The volume is published in the hope that it may prove useful, and with the request that its defects be called to the attention of the author.

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PART I

TEXT

# CHAPTER I

## INTRODUCTION

November 24, 1922, the date of the signing of the Colorado River Compact at Santa Fe, New Mexico, marked one step in the process of conference and negotiation concerning the development of this stream.<sup>1</sup> Having affixed their signatures to the document, the representatives of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming returned to their respective legislatures to secure the ratification of the interstate agreement which they had formulated.<sup>2</sup> However, ratification was not forthcoming in all of the seven legislatures. Arizona has consistently withheld her ratification, and California, though ratifying at the 1923 session of the California legislature, rescinded that ratification in 1925 but took definite action on the question of the six-state pact by enacting the Finney reservations withholding California's participation in the pact until Congress authorizes the construction of a storage dam at Boulder Canyon.<sup>3</sup> The other states—Colorado, Nevada, New Mexico, Utah and Wyoming—ratified the seven-state agreement in their legislative sessions of 1923.

This thesis embodies the results of a study of the Colorado River Compact, the circumstances surrounding that interstate treaty being considered from several points of view. The topographical basis and history of the movement for cooperation between the states of the Southwest in the question of Colorado River development are treated in the introductory chapter; the

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<sup>1</sup>Legislation providing for a Colorado River Commission was enacted as follows: Wyoming, Feb. 22, 1921, Laws of Wyoming, 1921, 166-167; Arizona, March 5, 1921, Laws of Arizona, 53-55; New Mexico, March 11, 1921, Laws of New Mexico, 1921, 217-220; Utah, March 14, 1921, Laws of Utah, 1919-1921, 184; Nevada, March 21, 1921, Laws of Nevada, 1920-1921, 190-191; Colorado, April 2, 1921, Laws of Colorado, 1921, 811-815; California, May 12, 1921, Statutes of California, 1921, 85-86; United States of America, Act to permit Compact . . . . August 19, 1921, 42 U. S. Statutes, 171.

See Appendix II, Exhibit A, *Text of Compact*.

See Appendix I, Exhibit A, *Fac-simile of President Harding's Appointment of Herbert Hoover to Represent the United States in Colorado River Negotiations*; Exhibit B, *Photograph of Colorado River Commission*.

See Appendix IV, Exhibits A and B, *Maps of Colorado River Basin*; Exhibit C, *Map of Colorado River Delta Region*; Exhibit D, *Profile of Colorado River and Grand River Showing Location of Projects for which Applications are on File with the Federal Power Commission*.

<sup>2</sup>See Appendix I, Exhibit C, *Photograph of Commissioners upon Signing Compact*.

<sup>3</sup>When it seemed certain that Arizona would not ratify the Compact, an attempt was made to make the agreement effective among the six other states. This phase of the history of the Colorado River Compact will be explained in detail in the chapter dealing with political issues.

provisions of the Compact are subjected to analysis in Chapter II; Chapter III deals with the engineering background of the Compact; Chapter IV, the economic background; Chapter V, constitutional questions; Chapter VI, political issues; and the concluding chapter contains suggestions for further steps in Colorado River development.

Heretofore the contact of men with the Colorado River has consisted of the endeavors of individuals and small groups rather than the projects of organized communities. Traders and explorers made their perilous journeys through canyons and mountain fastnesses with death phantoms stalking at their side. Should danger befall them, not so much as a report of their last advance might reach the outside world. This is not the case today. With the disappearance of the frontier line and the taking up of most of the land which can be made to yield a return by the efforts of the individual farmer,<sup>4</sup> ~~many eyes~~ turn toward the roaring giant of the Rockies.<sup>5</sup> Within its depths flow waters destined to transform the waste areas of the Pacific Southwest into fertile fields, and upon its foaming crest rides unharnessed energy to drive the wheels of industry of an infant manufacturing region certain to grow into stalwart manhood. But this raging stream, unless controlled, may strike with deadly fury, shifting its course so that whole communities built in valleys studded with thriving cities will be utterly destroyed. This is the constant threat of the Colorado.

For years the Colorado has been carving canyons and gorges through the ribs of the Rockies.<sup>6</sup> The rock and gravel and earth once lying securely hidden within mountain walls, has now been freighted toward the Gulf of California aboard the flood waters of the Colorado. Vast portions of this mass of silt have been deposited all along the lower reaches of the river. It is estimated

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<sup>4</sup>Turner, Frederick Jackson, *Contribution of the West to American Democracy*, Atlantic Monthly, January, 1903.

<sup>5</sup>See Appendix I, Exhibit D, *Official Photographs of the Colorado River*, U. S. Army Air Service.

<sup>6</sup>Data which are presented herewith have been taken from the following sources: United States Geological Survey, Department of the Interior, *Surface Water Supply of the United States, 1913, Part IX, Colorado River Basin, Water-Supply Paper 359*, pp. 1-260, Washington, Government Printing Office, 1916; United States Geological Survey, Department of the Interior, *Colorado River and Its Utilization, Water-Supply Paper 395* (commonly called the LaRue Report), pp. 1-231, Washington, Government Printing Office, 1916; Senate Document No. 142, Sixty-Seventh Congress, Second Session, *Problems of Imperial Valley and Vicinity* (commonly called the Fall-Davis Report), pp. 1-326, Washington, Government Printing Office, 1922; Weymouth, Frank E., Chief Engineer, United States Reclamation Service, *Synopsis of Results of Investigation, Hearings*, H. R. 2903, Part IV, p. 712 ff., March 20, 1924; Kelly, William, Colonel, U.S.A., Chief Engineer, Federal Power Commission, *Description of Physical Features of the Colorado River, Hearings*, H. R. 2903, Part VI, pp. 1231-1237, April 15, 1924.

that each year enough silt is carried by the waters of the Colorado to cover a six hundred and forty acre farm to the depth of one hundred thirty-seven feet.<sup>7</sup> The result is that the stream would change its course if it were not kept in its channel by artificial dikes. But there is a limit to the height to which these dikes can be built. At many places along the river, the bed of the stream is higher than the surrounding country. More and more silt is constantly being deposited. The bed of the stream is being built higher and higher above the level of the area traversed by the river. This means that the height of the levees must be constantly increased. To do so indefinitely is a physical impossibility.

It is well known that the Gulf of California formerly extended northwestward to a point a few miles above the town of Indio, about one hundred and forty-four miles from the present head of the gulf. In a report by the Director of the Reclamation Service on problems of Imperial Valley and vicinity with respect to irrigation from the Colorado River, it is pointed out that the Colorado River emptying into the gulf a short distance south of the present international boundary, carried its heavy load of silt into the gulf for centuries, gradually building up a great delta cone entirely across the gulf and cutting off its northern end, which remains as a great depression from which most of the water has been evaporated.<sup>8</sup> In this depression is the Salton Sea of three hundred square miles, with its surface about two hundred fifty feet below sea level. To the south of the Salton Sea lies the Imperial Valley.

As a source of early melons, fruits and vegetables, the Imperial Valley has become famous. Thriving communities center around El Centro, Imperial, Brawley, Niland, Calipatria, Holtville, Calexico, Heber, Seeley, Dixeland, Westmoreland, and Alamo. On a ridge higher than these cities flows the Colorado on its way to the Gulf of California. To the north of these cities, and at a lower elevation, lies the Salton Sea. In 1905 the river

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<sup>7</sup>Senate Document No. 142, Sixty-Seventh Congress, Second Session, *Problems of Imperial Valley and Vicinity* (commonly called the Fall-Davis Report), pp. 3-4, Washington, Government Printing Office, 1922.

<sup>8</sup>" . . . In the stretch from nine to forty miles below Yuma, the river now meanders with about the same characteristics as it does above Yuma. Just below the Pescadero Cut-off, the river spreads on its present delta cone. The area covered by the spread is relatively small and the accretions are correspondingly rapid. As the cone builds up, the delta condition probably will extend up stream so that the banks will eventually overflow at high water for some distance above the Pescadero Cut-off no matter how much the maximum flood is reduced."—Kelly, William, Colonel, U.S.A., Chief Engineer, Federal Power Commission, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, pp. 795-836, 805, 806, August, 1924.

scoured out a channel through the Imperial Valley and turned its entire volume into the Salton Basin, eroding a deep gorge and raising the level of Salton Sea. It submerged the salt works and forced the removal of the main line of the Southern Pacific Railroad. At great difficulty and expense, after several unsuccessful attempts, the river was returned in February, 1907, to its old channel leading to the Gulf of California.

What has happened in the past may happen again, unless steps are taken to change existing conditions. The cities of Imperial Valley and their surrounding communities are constantly threatened by the river, if floods should cause it to leave its channel. The Director of the Reclamation Service has given us the following explanation of the process which is taking place. "The river flowing over its delta cone steadily deposits silt in its channel and by overflow on its immediate banks, so that it gradually builds up its channel and its banks and forms a ridge growing higher and higher until the stream becomes so unstable that it breaks its banks in the high-water period and follows some other course. In this manner the stream has in past centuries swung back and forth over its delta, until this exists as a broad, flat ridge between the gulf and the Salton Sea, about thirty feet above sea level, and on the summit of this has formed a small lake, called Volcano Lake, into which the river flows at present, the water then finding its way to the southward into the gulf. The direct distance from Andrade on the Colorado River, where it reaches Mexico, to the head of the gulf is about seventy-five miles, and the distance to the margin of Salton Sea is but little more. As the latter is about two hundred fifty feet lower than the gulf, the strong tendency to flow in that direction needs no demonstration. This, coupled with the inevitable necessity for such an alluvial stream to leave its channel at intervals, constitutes the menace of the lands lying about Salton Sea, called the Imperial Valley. As there is no escape of water from Salton Sea except by evaporation, the river flowing into this sea, would, unless diverted, gradually fill it to sea level or above and submerge the cultivated land and the towns of Imperial Valley, nearly all of which are below sea level. Any flood waters that overflow the bank to the north must therefore without fail be restrained and not allowed to flow northward into Salton Sea. This is now prevented by a large levee, north of Volcano Lake, extending eastward and connecting with high land near Andrade. This levee is in Mexico and its maintenance is complicated thereby."<sup>9</sup>

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<sup>9</sup>*Development of the Imperial Valley*, House Committee Print, 67th Congress, 2nd Session, pp. 7, 8. Washington, Government Printing Office, 1922.

But the menace of the river is not limited to the deposition of silt in vast quantities in the lower reaches of the stream, making high dikes essential. The danger is augmented by the unequal flow of the river. During the winter months the Colorado is well-behaved. It flows quietly, if not sluggishly, on its way. But when the summer sun commences to melt the mountain snows, the river becomes a raging torrent. Throughout the summer months it is a runaway, an outlaw, a death-dealing demon, striking terror in the hearts of those who patrol the levees taxed to capacity by the rising flood waters fed by the eternal snows.

Since 1903 monthly records of the run-off of the Colorado River has been kept at important gauging stations. For a period of eighteen years, the compiled data shows that during the single month of June, 24.7 per cent of the entire year's volume of water is carried by this stream. The average amount is 4,300,000 acre-feet for each and every month of June during the twenty-year period. An acre-foot of water is the amount necessary to cover an acre of land to the depth of one foot. The average amount of water carried by the Colorado in the month of June of each year is enough to cover a 640-acre farm to a depth of 6,718.75 feet, or more than a mile deep. December is the month of least flow, only three per cent of the total flow passing through the river during that month. The number of acre-feet is 509,000. This is an amount of water sufficient to cover a 640-acre farm to a depth of but 795.31 feet. The June flow is accordingly sufficient to cover a 640-acre farm approximately 6,000 feet deeper than the December flow of the Colorado.<sup>10</sup>

Life in the area threatened by floods goes on behind a triple line of defense. Mr. G. E. P. Smith of the University of Arizona Agricultural Experiment Station, writing on the subject of the Colorado River and Arizona's interest in its development, says that the people of the Imperial Valley, for sixteen years, have been fighting a defensive battle against the Colorado, sometimes gaining, sometimes losing, but in the main losing. "They cannot hold out for many more years. At least once every year, in June, and sometimes at other seasons, the river threatens to change its course from the Gulf of California to the Imperial Valley, as it did in 1905. The only protection at present is the system of levees, called respectively the first, second, and third lines of defense. Frequently the floods break through the first and second lines and reach the third line. Each year the river,

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<sup>10</sup>Senate Document No. 142, Sixty-Seventh Congress, Problems of Imperial Valley and Vicinity, *Monthly Discharge of Colorado River at Yuma, Arizona, for Years 1902-1920*, pp. 220-222, Washington, Government Printing Office, 1922.

through silt deposition, builds up that part of the alluvial fan in front of the levees, in some years as much as four feet, and each year the levees must be raised an equal amount. Over one-quarter of a million dollars is expended each year by the farmers of the Imperial Valley in this work. The limit will be reached soon. Levees forty or fifty feet high cannot be maintained."<sup>11</sup>

Mr. Philip D. Swing, Representative in Congress from California, testified before the Federal Power Commission<sup>12</sup> as follows: "Imperial Valley is placed in the bowl of a saucer and the river running around looks into that saucer, and from where the Imperial Valley takes its water out of the river down to the pit of that saucer, distant seventy miles, is a fall of three hundred feet. From that same point down to the Gulf, distant sixty miles, is a fall of less than one hundred feet. The old law of gravitation has got that river with a downhill drag into Imperial Valley. The only certain thing about the river is its uncertainty. No one knows where or when it is going to strike."

Physical features divide the Colorado River area in the United States into two great basins separated by hundreds of miles of deep barren canyon cutting through high and rough plateaus. The upper basin embraces areas in the four states of Colorado, New Mexico, Utah and Wyoming. These four states furnish about eighty-five per cent of the flow of the river. They are the states in which the snows of winter are relatively heavier than in the lower basin states. Rainfall is also more abundant in the upper states. Millions of acres of land are irrigable in the upper basin, and possibilities exist for large developments of hydroelectric power. It is not strange, therefore, that the upper basin states are interested primarily in irrigation and power development. They have no such compelling reason as the Imperial Valley to be interested in flood control. Denver, also, asserts a claim to the water in this area.

The hundreds of miles of deep, barren canyon which connect the upper with the lower basin contain numerous power sites, but it is impracticable to divert water in large amount for irrigation purposes. Consequently, the communities in which power is needed are particularly interested in the canyon portion of the Colorado.

The Lower Basin comprises areas chiefly in the states of Arizona, California and Nevada. This portion of the Colorado River Basin supplies only about fifteen per cent of the water of the river, but has extensive possibilities for the use of water for

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<sup>11</sup>Arizona Agricultural Experiment Station, Bulletin 95, p. 536.

<sup>12</sup>*Hearings Before the Federal Power Commission*, Washington, Government Printing Office, 1924, No. 89908, p. 81.

domestic, agricultural and power purposes. Los Angeles and other Southern California cities and towns are among the claimants of water from this part of the Colorado.

Owners of land in Mexico also look to the Colorado as a source of water supply. According to the eighteenth annual report of the Reclamation Service, there are over 75,000 acres of land now irrigated below the international boundary line from the Colorado River, and there is said to be in round numbers a total of half a million acres of irrigable land in the Colorado delta in Mexico. These lands, if brought under full development, must receive their water supply from the Colorado River, whose low water flow is insufficient in occasional seasons for the lands now under irrigation in the Imperial Valley in California and Mexico.

The importance of the Colorado as a source of power may be appreciated when we remember that the difference in elevation between the source and mouth of the Colorado is approximately 8,000 feet. This is more than thirteen times greater than the 600-foot drop of the St. Lawrence, and yet that stream is an important source of electric power.

The Colorado River Basin comprises an area which approximates 262,500 square miles. This is 54,371 square miles greater than the area of France. The region includes about one-fourth of Wyoming, almost the western half of Colorado, the eastern half of Utah, one-sixth of New Mexico, the whole of Arizona, and small portions of Nevada, California and Old Mexico. Upon these western lands many now living in eastern areas will continue to seek a new opportunity. It is true that the lands now available are not of the same kind as those of Illinois, Iowa, Kansas, or Nebraska which received migrating hosts of former days, but they are the best that the United States still has to offer. The challenge today is not only one to the individual farmer. It is more than that. It is a challenge to community organization through governmental agencies, for no private individual is equal to the task of conquering the desert. No one citizen can tunnel through ranges of mountains. Cities must be supplied with water, irrigation districts must be organized, and a host of other projects likewise depend upon governmental action in one form or another. Whether for good or ill, the day has arrived in American community development when the self-sufficiency of the individual is coming to be replaced in large measure by dependence upon governmental agencies. At first sight, this seems to mean that there is less place today for strong individualism than in the past. But such is not the case. An individualism stronger than any we have yet seen is required of the men who will see the problems of the Colorado, and similar prob-

lems in their true setting. Corporations, private and public, which operate in accordance with plans of far-sighted executives, have great contributions to make. The Pacific Southwest is an economic unit; the Colorado River basin and the areas to be served by this stream are an economic unit. Only those leaders in public or private corporations who see the problem as a unit, may be followed with safety.

Something must be done to alleviate the danger from floods which threaten the Imperial Valley; something must be done to supply water for domestic and agricultural purposes to the portions of the Colorado basin; something must be done to supply power demanded by industry.<sup>13</sup> And whatever is done must be done with an eye which can see the points of view of all interests involved. The Colorado River, a national asset of peculiarly regional importance, should not be plundered by private greed or public incompetence. It stands as the surviving representative of those forces of nature in whose mastery the American spirit has grown strong. It, too, may be made to serve the purposes of men when a sufficiently large number of individuals apply themselves industriously to bring about the achievement of this task.<sup>14</sup>

Before any step could be taken toward cooperation between the states of the Southwest in Colorado River development,<sup>15</sup> a great deal of publicity was necessary concerning early explorations of the river and the physical features of the country through which it flows. "Attention was called to the wildly rushing river half a century ago at the time of Major Powell's famous expedition, but its possibilities from an economic and engineering standpoint were not seriously considered until about twenty years ago."<sup>16</sup> At that time Mr. E. C. LaRue of the United

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<sup>13</sup>It is held by some that there is no immediate need for Colorado River Development. For a consideration of the urgency of such development, see Appendix II, Exhibit G, *The Urgency of Colorado River Development*. It is believed that the evidence therein considered justifies the conclusion above stated.

<sup>14</sup>It is asserted that all the waters of the Colorado are susceptible of being stored for beneficial use by the construction of a number of dams. See summary of report of Mr. John T. Whistler, Engineer, United States Reclamation Service, Sixteenth Annual Report, United States Reclamation Service, p. 407, Government Printing Office, 1919.

<sup>15</sup>The fact that this cooperation has not been attained is only too obvious to every student of the question. But the history of the effort to work out a unified plan is the subject which we are now considering.

<sup>16</sup>Los Angeles Times, *Taming the Colorado River*, Jan. 1, 1926. "The greatest of all the explorations of the Colorado River was done by Major John Wesley Powell from 1868 to 1872. Powell succeeded in taking four boats down the Colorado River through the Grand Canyon. This is one of the most remarkable river explorations in history. Major Powell's official report to the United States Government, through the Smithsonian Institute, under which he worked, is a great American classic. I do not know whether the report can now be had,

States Geological Survey made a reconnaissance of the river and wrote a volume to which reference has already been made. In that work it was conclusively shown that the river could be advantageously harnessed. Louis C. Hill and other engineers made investigations about the same time and every report was favorable.<sup>17</sup>

For many years the most significant features about the Colorado River—and the one of most news value—was its tendency to overflow the lands adjacent to the delta section of the river. Two decades ago the word flashed from coast to coast that nature, with startling rapidity, was creating an immense lake in the dead heart of the Colorado Desert. This was the occasion of the 1905-1906 break, widely heralded in the press of the country.<sup>18</sup> Shortly thereafter, on January 12, 1907, President

or is put forth by any publishing house. Certainly it should be put forth at least in abridged form for the widest reading throughout the country. For high purpose, courageous endeavor, enduring of hardship and danger, and giving to the world first hand descriptions of the most remarkable river and its great canyons, including the Grand Canyon of the Colorado, a mile deep and a hundred miles long, Major Powell's book is of absorbing interest and instruction. His achievement will ever stand high in the annals of American exploration."—Porter, Horace, *The Genesis of the Colorado River Movement*, Minutes of the Santa Barbara Meeting, League of the Southwest, June 7, 1923, pp. 17-21.

<sup>17</sup>"Investigations of the Colorado River Basin were stated by the Reclamation Service in 1904 with the view of augmenting the water supply for irrigation in the Delta region. Extended investigation of the Upper Basin indicated a lack of the requisite storage at reasonable cost; therefore, studies of storage sites in the lower river were undertaken. After a preliminary study of the problem and a reconnaissance of the river below the mouth of the Virgin River work was concentrated, in 1919 and thereafter, on the better dam sites in Boulder and Black Canyon."—Weymouth, Frank E., Chief Engineer, United States Reclamation Service, 50 Proceedings of the American Society of Civil Engineers, No. 9, pp. 1484-1485, November, 1924.

See also Mr. Weymouth's statement concerning the authority granted to the Secretary of the Interior to investigate the Colorado River.—*Hearings*, H. R. 2903, Part IV, p. 711, March 20, 1924.

"For five years Congress has had under consideration bills for federal construction of the All-American Canal and of a storage reservoir on the Colorado (Kettner bill and Swing-Johnson bill). In 1920 and 1922 Congress directed investigation of the Colorado by the Reclamation Service. This work resulted in a full report by A. P. Davis, published in 1922 as Senate Document 142, and in a later report by F. E. Weymouth in 1924, as yet unpublished."—Schmitt, F. E., Assistant Editor, Engineering News-Record, *The Colorado River—A Brief Summary of Data*, 94 Engineering News-Record, No. 2, pp. 57, 62, Jan. 8, 1925. (Note: There is nothing in the Engineering News-Record just cited to show that Mr. Schmitt wrote the article in question. However, a conversation with Mr. Bissell of the Reclamation Service, who supplied the data to Mr. Schmitt, was the source of the information. This conversation took place in the offices of the Reclamation Service, Washington, D. C., in February of 1925.)

See Appendix II, Exhibit H, *The Genesis of the Colorado River Movement—Early History*, for a description of sixteenth, seventeenth, and eighteenth century explorations.

<sup>18</sup>See Appendix II, Exhibit I, *America's Dead Sea is Curbed Forever*, for a brief statement of the facts concerning the break.

Roosevelt urged a broad and comprehensive plan of development for the Colorado River. "The plan in general," he pointed out, "is to enter upon a broad, comprehensive scheme of development for all the irrigable land upon the Colorado River with needed storage at the head waters, so that none of the waters of this great river which can be put in beneficial use will be allowed to go to waste."<sup>19</sup>

This desire to make use of the water of the Colorado was another cause of increased activity looking toward cooperation in Colorado River development.<sup>20</sup> It was supplemented by the demand of different communities for electric light and power, particularly during recent years.<sup>21</sup> Still another factor in the early stage of the movement for cooperation was the interest in public ownership of natural resources.<sup>22</sup> This is also one of the most vital questions in present developments.<sup>23</sup> Still another reason for cooperation is the desire to prevent tedious litigation over questions of water rights.<sup>24</sup> To these five causes tending to stimulate cooperation in Colorado River development—the flood menace, the desire to put these waters to beneficial uses, the need of power, an active interest in public ownership, and the desire to prevent litigation—may be added a sixth, that of an attempt

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<sup>19</sup>Quoted in *Closing Statement by Proponents of H. R. 2903*.—Hearings, H. R. 2903, Part VIII, p. 1848, May 17, 1924.

<sup>20</sup>The Kinkaid Act of 1920, 41 United States Statutes, 600, is one of many acts designed to make use of Colorado River water for irrigation purposes. Mr. Weymouth, Chief Engineer, United States Reclamation Service, stated that one of the reasons for this act was the fact that "the water supply is all now used during the low-water period," and that "to have further development in the Imperial Valley, storage will be required."—*Hearings*, H. R. 2903, Part IV, p. 710, March 20, 1924.

<sup>21</sup>"When we consider the present demand for electric light and power, and when we remember that commercial electric lighting was unknown before about 1880, while the earliest examples of electric power transmission date back only to about 1891, we are confronted with the fact that the electric lighting industry is only a little over forty years old, and the electric power industry had its small beginnings only about thirty years ago."—Inch, S. R., General Manager, Utah Power and Light Company, Salt Lake City, *Colorado River Commission, Hearings*, State Capitol Building, Salt Lake City, Utah, March 27, 1922, p. 47.

<sup>22</sup>In the meetings of the Colorado River Conference sponsored by the League of the Southwest at Santa Barbara, June 7-9, 1923, Mr. Carl D. Thompson, Secretary of the Colorado River Public Ownership League of America, Chicago, addressed the delegates upon the subject, "The Colorado River Public Ownership Problem."—League of the Southwest, *Minutes of the Santa Barbara Meeting, June 9, 1923*, Santa Barbara, California, pp. 349-364.

<sup>23</sup>The chapter on Political Issues will give some indication of the controversies arising between private power companies and advocates of municipal ownership.

<sup>24</sup>This will be considered in some detail in the chapter dealing with Constitutional Questions.

to secure the gratification of the sense of achievement which comes as the result of accomplishing a difficult task.<sup>25</sup>

In any sketch of the history of the effort to work out a unified plan for the development of the Colorado River, a word should be said about the work of the National Reclamation Association. Although this is a "one-man organization,"<sup>26</sup> it has consistently advocated policies of conservation and presented facts which have had their effect in determining plans of action.<sup>27</sup> It was

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<sup>25</sup>"On July 24, 1847, when the pioneers, under the leadership of Brigham Young, entered this valley, a seemingly hopeless desert lay before and about them. There was no irrigation experience in America upon which they could draw in their labor of winning the desert to human use. The irrigation practiced by the Indians was not of a kind to serve the needs and ambitions of a group of empire-builders; and the limited irrigation projects of the Catholic fathers and the occasional ranchers were of an individual or private nature, therefore of little value in community building under the ditch. The Utah pioneers were obliged to build from the foundation."—Widtsoe, Dr. John A., Utah Agriculture College, Adviser for Utah in the negotiations of the Compact, Colorado River Commission, *Hearings*, State Capitol Building, Salt Lake City, Utah, March 28, 1922, pp. 139-140.

Reference may be made to works of fiction: Grey, Zane, *The Heritage of the Desert*, and Riders of the Purple Sage; Wright, Harold Bell, *The Winning of Barbara Worth*; Lynde, Francis, *City of Numbered Days*; Aiken, Ednah, *The River*; Austin, Mrs. Mary, *The Land of Journey's Ending*.

<sup>26</sup>"I am perfectly willing to make the statement, Mr. Raker, that it is a one-man organization to this extent, that what it advocates is pretty well left to me. "I am the executive director and act as secretary.

"We have no board of directors. We have an executive committee, but they have not acted for a long while because they are out at Los Angeles, and I have been away so much that we have fallen into the habit of not having meetings. . . . I do not think we have had a meeting of the members of the association for 20 years. . . . I want to state that the National Reclamation Association is made up of a group of men scattered all over the country, who have no interest in this matter, except in its general public aspects; and I will be very glad to present a list of members at any time, most of whom are in the East. Their interest in the matter is the development of trade. 'The expansion of internal trade and enlargement of home markets,' was our original slogan; and I think a good many of them would tell you, if you asked them why they are keeping on paying from \$20 to \$120 a year, that they thought Maxwell was doing a good work."—Maxwell, George H., *Hearings*, H. R. 2903, Part VI, pp. 1344-1345, April 17, 1924.

The number of Phoenix, Arizona, members of the National Reclamation Association who paid their contribution of \$20 for 1922 was 238.—*Ibid.*

<sup>27</sup>Mr. Maxwell was among the first to advocate the Highline Canal for Arizona, a scheme then regarded as entirely impracticable. At the present time this plan is being urged strenuously by the Arizona Highline Reclamation Association.—67 Congressional Record, No. 25, pp. 1792-1800, Sixty-Ninth Congress, First Session, Jan. 15, 1926.

Mr. Maxwell was also instrumental in promoting President Roosevelt's interest in reclamation.—Porter, Horace, *The Genesis of the Colorado River Compact*, League of the Southwest, Minutes of the Santa Barbara Meeting, June 7, 1923. Resolutions calling for the creation of a Colorado River Commission were submitted to the Resolutions Committee of the League of the Southwest at the meeting held in Denver, Colorado, August, 1920.—Colorado River Commission, *Statement of Mr. Delph E. Carpenter*, Minutes of First Meeting, Department of Commerce, Washington, D. C., Jan. 26, 1922, 10 a. m., p. 15.

It was also in the Denver meeting of the League of the Southwest that

organized as the National Irrigation Association in June of 1899 and changed its name to the National Reclamation Association after the passage of the United States Reclamation Act. Among its purposes are included the adoption of a permanent policy by the federal government in the administration of the public domain as a trust with grants to none but actual settlers, flood protection and use of flood waters for navigation and irrigation, the construction of storage reservoirs by the federal government, the preservation of forests and reforestation as a source of water, and the adoption of a system of harmonious irrigation laws in the various states.<sup>28</sup>

The League of the Southwest merits more than casual reference. In January of 1919 a conference between the representatives of the seven Colorado River states—Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming—was called by the governor of Utah for the purpose of discussing questions relating to the utilization of the water supplies of the Colorado River and its tributaries, and especially in connection with a law then proposed by Secretary Lane relating to soldiers' and sailors' settlement. This meeting of the seven states resolved itself into a permanent organization to be known as the League of the Southwest.<sup>29</sup>

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Mr. A. P. Davis made his first public statement that investigations of the Colorado had reached a point where he was confident that with sufficient care and conservation there would be sufficient water for the irrigation of all lands that could be favorably reached from the standpoint of economics within or adjacent to the Colorado Basin.—Colorado River Commission, *Statement of Mr. A. P. Davis*, Minutes of First Meeting, Department of Commerce, Washington, D. C., Jan. 26, 1922, 10 a. m., p. 28.

<sup>28</sup>Maxwell, George H., Executive Director, National Reclamation Association, *Hearings*, H. R. 2903, Part VI, pp. 1286-1287, April 17, 1924.

The National Reclamation Association's headquarters are in the Maryland Building, Washington, D. C.

<sup>29</sup>Carpenter, Delph E. *History of Proceedings by Colorado River States Leading to Interstate Compact Legislation—Colorado River*, memorandum and brief concerning legislation looking to Compact upon Colorado River, submitted at hearing before the Committee on the Judiciary, House of Representatives, Sixty-Seventh Congress, First Session, on H. R. 6821 (Granting the consent of Congress to certain Compacts and Agreements between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming), June 4, 1921, Washington, Government Printing Office, 1921.

In the preface to the proceedings of the convention of the League of the Southwest at the Trinity Auditorium, Los Angeles, California, April 1-3, 1920, the following paragraph appears, indicating that the League of the Southwest was a going concern as early as 1918.

"In 1918, at Tucson, Arizona, the League of the Southwest held a meeting to discuss means of providing relief for cattle which were perishing, by reason of the drought, by hundreds of thousands on the ranges of the Southwest. The vigorous action of the representatives of the convention brought results."—League of the Southwest, *Minutes of Proceedings of Convention at Trinity Auditorium, Los Angeles, California, April 1-3, 1920*, preface.

An excerpt from its constitution appears upon the stationery of the League of the Southwest stating that it is "a non-political alliance between the states of Arizona, California, Colorado, Nevada, New Mexico, Wyoming, Texas and Utah to foster closer social and commercial relations and to link the communities of the Southwest in a spirit of brotherhood<sup>30</sup> and the promotion of the civic, commercial and social interests of the territory." Another statement quoted is to the effect that the League of the Southwest holds that the development of the resources of the Colorado River basin fundamentally underlies all the future progress and prosperity of the Southwest. During the period of its greatest activity, from 1920 to 1924, the League of the Southwest held meetings at Los Angeles, Riverside and Santa Barbara, California, and Denver, Colorado.<sup>31</sup> The activities of this organization have subsided the past few years because of the work of state governments in promoting cooperation for Colorado River development,<sup>32</sup> but its preliminary work in fostering consideration of the subject must be given due credit. It was a valuable service to the cause.<sup>33</sup>

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<sup>30</sup>Mr. Hoover, Chairman of the Colorado River Commission, is authority for the statement that the primary object in the creation of the Commission was to secure a compact that would make resort to litigation both unnecessary and impossible.—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, Colorado, March 29, 1922, p. 1.

The legal issues will be discussed in detail in Chapter V, Constitutional Questions. Pending litigation will be mentioned in Chapter VI, Political Issues.

<sup>31</sup>The dates of the meetings or conventions were as follows: Los Angeles, April 1-3, 1920; Denver, August 25-27, 1920; Riverside, December 8-10, 1921; Santa Barbara, June 7-9, 1923.

Records of these meetings are in the keeping of Mr. Arnold Kruckman, Secretary and Treasurer, Wright-Callender Building, 403 South Hill Street, Los Angeles, California. Mr. Kruckman, in the summer of 1924, stated that the transcripts of proceedings of earlier meetings at San Diego, California, and Tucson, Arizona, were never completed.

For a more adequate indication of the work of the League of the Southwest, see Appendix II, Exhibit J, *Preface to Proceedings of the Convention of the League of the Southwest at the Trinity Auditorium, Los Angeles, California, April 1-3, 1920*.

For the roster of officers of the League of the Southwest, see Appendix II, Exhibit K, *Officers of the League of the Southwest*.

<sup>32</sup>Interview with Mr. Arnold Kruckman, Secretary-Treasurer, League of the Southwest, Los Angeles, August, 1924.

<sup>33</sup>Numerous other organizations have taken a part in the movement for cooperation in Colorado River matters. Indeed, it would be not too much to say that the major portion of all civic organizations in the area particularly interested in Colorado River development, have passed resolutions or otherwise affirmed their position with respect to the questions raised. Chambers of Commerce, Federations of Women's Clubs, Leagues of Municipalities and Organizations of Realtors have taken a leading part in the discussions. A partial list of organizations may be compiled from resolutions, telegrams, and other data recorded in *Hearings*, H. R. 2903, Part VIII, pp. 1882-1897, May 17, 1924.

Special consideration will be given to the activities of the Boulder Dam Association in the chapter on political issues.

In the introductory chapter it has been the writer's purpose to present material which will serve as a general background for the chapters which are to follow. With this in mind, the early pages of the chapter were devoted to a description of the geographical features of the area concerned. Then the history of the movement for cooperation between the states of the Southwest in working out a scheme of Colorado River development, was traced by showing the part played in this movement by a number of different factors—the flood menace, the desire to put Colorado River waters to beneficial use, the need of power, an active interest in public ownership, the desire to prevent litigation, and the desire to secure the gratification of a sense of achievement which comes as the result of accomplishing a difficult task.

## CHAPTER II

### ANALYSIS OF COMPACT

In the introductory chapter the statement was made that the menace of floods, the need of water and power, and the sense of achievement which results from the accomplishment of a difficult task, were among the factors leading to cooperation in Colorado River development. An understanding of the more specific question of the origin of the Compact as the tangible form of such cooperation, may be facilitated by a study of the records of the negotiations held prior to the drafting of the interstate agreement. There we may expect to find information concerning the different preliminary drafts of the seven-state treaty which were considered before the final draft emerged from the conference room. With these data before us we will be equipped to proceed with the analysis of the Compact as promulgated by the Commission.

At the Denver meeting of the League of the Southwest in August, 1920, a resolution was offered calling for the creation of a Colorado River Commission.<sup>1</sup> Within a year and four months from that time the first meeting of the Colorado River Commission had been held. The legislature of California was the last of the legislatures of the seven states to pass enabling legislation to provide for representation in a series of conferences to frame an agreement looking toward a comprehensive scheme of development of the Colorado River. However, such action was taken on May 12, 1921. The federal government gave its consent the following August.<sup>2</sup> In January of 1922 the representatives met in Washington and commenced their deliberations. These were continued as occasion required until the following Novem-

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<sup>1</sup>"MR. CARPENTER: . . . . In order that due credit may be given, it gives me pleasure to say that Mr. Gillette, former State Engineer of New Mexico, was the first to offer the resolution calling for the creation of this Commission, before the Resolutions Committee of the League of the Southwest at the meeting held at Denver in August, 1920. I assisted in the preparation of the resolution and it gives me pleasure to observe the degree of progress made."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, Thursday, 10 a. m., Jan. 26, 1922, p. 15.

"MR. HOOVER: I have the feeling that inasmuch as Mr. Carpenter has had a great deal to do with the foundation of this Commission, that we should hear from him first as to the basis on which he considers our work could most expeditiously proceed."—*Ibid.*

<sup>2</sup>The legislation to which reference is made was cited in Chapter I.

Article I, Section 10, paragraph 3 of the Constitution of the United States contains the compact clause under which these steps were taken.

ber when the terms of the Colorado River Compact were made public.<sup>3</sup>

The Compact was in the process of being formulated during the sixteen months to which reference has been made, Undoubtedly certain individuals had theretofore been considering the general phases of the questions involved, but I have discovered no evidence to indicate that definite proposals had been made.

Resolutions were adopted at the ninth meeting of the Commission to the effect that the various commissioners were to submit to the Secretary of the Commission, Mr. Stetson, "suggested forms of compact for the disposition and the apportionment of the waters of the Colorado River and its tributaries."<sup>4</sup> These suggested forms of compact were to be considered at subsequent meetings of the Commission. Commissioners of five of the states—Arizona, Colorado, New Mexico, Utah, and Wyoming—prepared such drafts or suggested forms of compact.<sup>5</sup> The representatives of California<sup>6</sup> and Nevada made no proposals. When the different drafts came before the Commission the alphabetical order of the state whose representative presented the draft, was the order in which they were considered.<sup>7</sup>

There is reason to believe that at least one of these proposed drafts was available for the careful study of members of the Commission before it came up for general consideration in the meetings of that body. This was the preliminary draft submitted by Mr. Delph E. Carpenter, Commissioner for Colorado. Mr. Carpenter's letter of August 25, 1922, to Chairman Hoover, marked "personal" begins with the statement that he is taking the liberty of enclosing for the "personal and confidential consideration" of Mr. Hoover, "a copy of a preliminary draft of a compact pro-

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<sup>3</sup>A number of hearings were held by the Commission at points in the Southwest for the purpose of giving all the members of the Commission the opportunity of hearing arguments which anyone might present. The hearings at Denver, Los Angeles, Salt Lake City and Phoenix were particularly noteworthy. Hearings were also held at Grand Junction, Colorado, and Cheyenne, Wyoming.

<sup>4</sup>Colorado River Commission, *Minutes of the Ninth Meeting*, Brown's Palace Hotel, Denver, Saturday, 9 a. m., April 1, 1922.

It may be added that this method of procedure followed the failure of the Commission to arrive at an agreement concerning the division of the waters of the Colorado among the seven states. The final agreement consisted of an apportionment between the "Upper Basin" and the "Lower Basin."

<sup>5</sup>Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 a. m., Nov. 11, 1922, pp. 4-27; *Ibid.*, *Minutes of the Twenty-Sixth Meeting*, Bishop's Lodge, Santa Fe, p. 17. (No records are at hand showing the date of this meeting.)

<sup>6</sup>*Ibid.*, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 a. m., Nov. 11, 1922, p. 12.

<sup>7</sup>*Ibid.*, p. 2.

viding for the permanent and equitable distribution of the waters of the Colorado River upon a 'fifty-fifty' basis" pursuant to Mr. Hoover's suggestion. "This is merely my first effort," continued Mr. Carpenter, "and I am submitting it to you and others for the purpose of obtaining personal suggestions and criticism."<sup>8</sup>

Mr. W. S. Norviel, State Water Commissioner of Arizona and Arizona's representative on the Colorado River Commission, forwarded his proposed draft to Mr. Stetson, Executive Secretary of the Commission, on June 14, 1922. He suggested that Mr. Stetson might submit it to "the Chief", Mr. Hoover, but that he, Norviel, reserved the right to change all or any portion of the draft up to the first day of August.<sup>9</sup>

It seems that Mr. Clarence C. Stetson, Executive Secretary of the Colorado River Commission, took an active part in drawing the terms of the agreement submitted by Mr. S. B. Davis, New Mexico's representative. A letter which was on file with other records of the Commission at Washington in February of 1925, written by Stetson to Davis and marked "personal and confidential" contains a reference to the "form of compact which we drafted." The letter was dated April 25, 1922. Judge Davis answered this communication on May 3, 1922, as follows: "I have checked over yours of the 25th regarding the form of contract which we prepared." The reply is also labelled "personal."<sup>10</sup>

In making the analysis of the Compact as promulgated by the Commission, reference will be made to arguments of the Commissioners for and against the various articles. In this manner the process of compromise and concession leading to the adoption of each article<sup>11</sup> will become apparent.

The mode of procedure generally used by the Commission in considering the different sections which were finally included in the Compact, consisted of five steps. First, there was the sub-

<sup>8</sup>Carpenter, Delph E. *Letter to Herbert Hoover*, August 25, 1922.

The letter is signed by Mr. Carpenter as Commissioner for Colorado and is written on stationery of the Legal Department, State of Colorado.

<sup>9</sup>" . . . I am enclosing herewith a copy of the Compact. . . . It contains a combination of what Judge Sloan and I had written out. . . . You may submit this to the Chief but I am reserving the right to change all or any portion of it up to the 1st of August."—Letter of W. S. Norviel, State Water Commissioner of Arizona, to Executive Secretary Stetson, June 14, 1922.

<sup>10</sup>I have found no records to indicate that the Utah and Wyoming suggestions were submitted to any of the Commissioners prior to their consideration in meetings of the Commission.

Reference should be made to terms of agreement suggested by Messrs. Nathan C. Grover and J. C. Hoyt of the United States Geological Survey.

Additional data relating to the origin of the Compact are presented in Appendix II, Exhibit N, *Origin of the Compact*.

<sup>11</sup>See Appendix II, Exhibit O, *Procedural Technique of the Colorado River Commission*.

mission of proposed compacts by several of the Commissioners. Those portions of the suggested agreements which dealt with the same subject matter were considered together in the Commissioner's general discussion. This constituted the second step. When it was clear that the members of the Commission understood the point of view favored by a majority of the body, the drafting Committee<sup>12</sup> expressed the ideas of the group in written form. This was the third step in the process. With the written draft before them, the members of the Commission again discussed the subject matter of each paragraph, making changes as seemed desirable—a fourth step. The fifth and final step was the adoption of each section upon the motion and vote of the members of the Commission.

The preamble of the Compact asserts the determination of the seven states to enter into a compact under the clause of the federal constitution permitting such action, cites the Act of Congress giving the requisite consent, and names the representatives of the respective states.<sup>13</sup> Eleven articles make up the body of the Compact. The subject matter considered in each is as follows: First, major purposes of the Compact; second, definition of terms; third, definitive apportionment of water; fourth, preferred uses of water; fifth, plans for cooperation; sixth, means of adjusting controversies arising under the Compact; seventh, effect of the Compact upon Indian tribes; eighth, effect of the Compact upon present perfected rights; ninth, effect of the Compact upon present legal remedies; tenth, method of terminating the Compact; eleventh, provision declaring when the Compact shall become binding upon the signatory states. Then follows an attestation clause and the signatures of the Commissioners and Chairman Hoover.

According to the terms of Article I of the Compact, there are seven major purposes to be served by the agreement.<sup>14</sup> The first

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<sup>12</sup>Davis, Carpenter, Sloan, McKisick, and Hamele.

For the minutes on this point, see Appendix II, Exhibit O, *Procedural Technique of the Colorado River Commission*.

<sup>13</sup>The States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, having resolved to enter into a compact under the Act of the Congress of the United States of America, approved August 19, 1921 (42 Statutes at Large, Page 171) and the Acts of the Legislatures of the said States, have through their Governors appointed as their Commissioners: W. S. Norviel, for the State of Arizona; W. F. McClure, for the State of California; Delph E. Carpenter, for the State of Colorado; J. G. Scrugham, for the State of Nevada; Stephen B. Davis, Jr., for the State of New Mexico; R. E. Caldwell, for the State of Utah; Frank C. Emerson, for the State of Wyoming, who, after negotiations participated in by Herbert Hoover appointed by the President as the representative of the United States of America, have agreed upon the following articles.

<sup>14</sup>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;

is to provide for the equitable division and apportionment of the use of the waters of the Colorado River System. The Upper and Lower Basins of the stream each have need of water from this source. If the development of the regions included within the Lower Basin should take place more rapidly than the growth of the states in the Upper Basin by reason of a greater movement of population into the Lower than into the Upper Basin states, more and more water would be needed by the Lower Basin states. It is a principle of law that an area which first has actually made use of water thereby acquires a better claim than subsequent users to the continued use of that water. The Upper Basin states, looking into the future, could see a time when most of the water of the Colorado might be used by the Lower Basin states unless an agreement were made for the equitable division and apportionment, as between the Upper and the Lower Basins, of the use of the waters of the Colorado River system. Arguments will be cited when the apportionment clause is considered in detail. The reasons for apportioning the water to the Upper and Lower Basins rather than to the separate states will also be considered in the same connection.

The second major purpose of the Compact was declared to be to establish the relative importance of different beneficial uses of water. Its use for the generation of electrical power is to be subservient to the use and consumption for agricultural and domestic purposes.

The third and fourth major purposes are to promote interstate comity and to remove causes of present and future controversies. As an effective means toward this end, provision is made for a commission to be established for the purpose of hearing controversies between states in which water rights are in question.

The fifth, sixth and seventh purposes are to secure the expeditious agricultural and industrial development of the Colorado river basin, to secure the storage of its waters, and to secure the protection of life and property from floods. These three major purposes, as well as the four which we have already noted, suggest that the underlying thought of the Compact is that the Colorado Basin is an economic unit and that the development of

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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.

the whole must proceed in accordance with a definite and scientific plan.

Article II contains eight paragraphs, (a) to (h), which define a number of the terms used in the Compact. One of these paragraphs defines the term "Colorado River System"; three others define the "Colorado River Basin", the "Upper Basin," and the "Lower Basin" in such a manner that the use of Colorado River water outside of the watershed is sanctioned; one locates the point of division between the Upper and Lower Basin; another defines the term "domestic use"; and two others indicate the meaning of the terms "States of the Upper Division" and "States of the Lower Division," respectively.

The first of the definitions is as follows: "The term 'Colorado River System' means that portion of the Colorado River and its tributaries within the United States of America."<sup>15</sup> Paragraphs (b), (f), and (g) also deal with the question of limits or boundaries of the area affected by the Compact. They bring the beneficial application of water of the Colorado River to regions outside the watershed, within the scope of the Compact. "The term 'Colorado River Basin' means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied."<sup>16</sup> The term 'Upper Basin' means those parts of the States of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry."<sup>17</sup> "The term 'Lower Basin' means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry."<sup>18</sup>

It is clear from the provisions of the definition of the term "Colorado River Basin", that any piece of land within the limits of the United States to which the waters of the Colorado River are beneficially applied, is within the Colorado River Basin. If there were no additional provisions the farmers of the arid plains

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<sup>15</sup>Article II, (a).

<sup>16</sup>Article II, (b).

<sup>17</sup>Article II, (f).

<sup>18</sup>Article II, (g).

East of the Colorado River watershed might tunnel through the mountains and divert the water of the Colorado upon their fields and thence into the tributaries of the Mississippi, if it were economically feasible, and thereby place themselves within the Colorado River Basin as defined by the Compact. But the definitions of the terms "Upper Basin" and "Lower Basin," respectively, place a limit upon such transmountain diversion. Only those areas outside of the watershed, but within the boundaries of the specified states, to which the water may be beneficially applied, are within the terms of the Compact.<sup>19</sup>

By paragraph (e) of Article II the term "Lee Ferry," which applies to the point of division between the Upper Basin and the Lower Basin, is defined as meaning "a point in the main stream of the Colorado River one mile below the mouth of the Paria River,"<sup>20</sup> The term "domestic use" is designated as including the

<sup>19</sup>The draft submitted by Mr. Norviel of Arizona contained the following provisions:

"Article I. *First*—For the purpose of this compact, the Colorado River Basin is to be regarded as embracing the entire watershed of the Colorado River within the United States and also the Imperial and Coachella Valleys, and is to be considered as one economic unit; . . . .

"Article I. *Thirteenth*—No water shall be diverted from the Colorado River Basin for use outside of the Basin as herein specified, except it is now agreed that within the State of Colorado there may be so diverted not to exceed . . . . acre feet per annum; and within the State of Utah there may be so diverted not to exceed . . . . acre feet per annum. Provided, however, it is agreed that this paragraph is not intended to and does not establish a legal right of intermountain diversion of water from the Colorado River Basin, nor a precedent therefor."—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 a. m., Nov. 11, 1922.

For a discussion of the manner in which courts have handled the question of diversion of water into a watershed other than that of the stream which is the source of the water, see Appendix II, Exhibit L, *The Legality of Transmountain Diversion*.

Mr. S. B. Davis' draft contained the following provision on the question of transmountain diversion:

"If any water hereby apportioned is diverted from the drainage area of the Colorado River so that the river is deprived of the natural return flow therefrom, then, for each acre-foot so diverted an additional deduction of one-third of one acre-foot for each acre-foot so diverted shall be deducted from the apportionment to such state. But no such deduction shall be made from the apportionment to California unless and until there is an insufficient amount of water to supply the needs of the Republic of Mexico and unless and until a right to the use of the waters of the Colorado River shall be legally established by said Republic or by appropriators of waters therein and unless and until an illegal interference therewith shall also be duly proven."

The question of transmountain diversion assumes particular importance in Colorado River issues because of the demands of communities outside of the Basin, notably Denver and Los Angeles. This will be considered further in the chapter on Political Issues.

For the text of the more important sections of a number of the proposed drafts, see Appendix II, Exhibit M, *Proposed Drafts*.

<sup>20</sup>The Paria River is in Arizona, a branch of the Colorado, near the Arizona-Utah line.

use of water for "household, stock, municipal, mining, milling, industrial, and other like purposes."<sup>21</sup> The generation of electrical power is specifically excluded from the meaning of the term.<sup>22</sup>

The States of Colorado, New Mexico, Utah, and Wyoming are included in the meaning of the term "States of the Upper Division". "The term 'States of the Lower Division' means the States of Arizona, California and Nevada."<sup>23</sup>

Definitive apportionment of the waters of the Colorado River is the purpose of Article III, which consists of seven paragraphs. By the terms of the first paragraph the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum from the Colorado River System is made to the Upper Basin and to the Lower Basin, respectively.<sup>24</sup> This apportionment, it is declared, shall be in perpetuity, and the 7,500,000 acre-feet which are apportioned to each Basin "shall include all water necessary for the supply of any rights which may now exist."<sup>25</sup>

By the second paragraph it is asserted that "in addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum."<sup>26</sup>

The fourth paragraph introduces the idea of a ten-year period as the basis of the apportionment. The language of that paragraph is as follows: "The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact."<sup>27</sup>

Provision is made in the third paragraph for any agreement which the United States might make with Mexico concerning Mexico's rights in the waters. "If, as a matter of international comity," the paragraph reads, "the United States of America shall hereafter recognize in the United States of Mexico any

<sup>21</sup>Article II, (h).

<sup>22</sup>*Ibid.*

<sup>23</sup>Article II, (c), (d).

<sup>24</sup>An acre-foot of water is the amount necessary to cover an acre of land to the depth of one foot, no provision being made for absorption into the soil or evaporation.

<sup>25</sup>"A second-foot flowing for twenty-four hours is equal to two acre-feet. A second foot is about an inch an acre per hour. So that in one month a second-foot flows 60 acre-feet; in one year it flows about 760 acre-feet."—Davis, A. P. *Hearings*, H. R. 2903, Part I, Feb. 9, 1924, p. 51.

<sup>26</sup>For the exact words of this and other Articles, see Appendix II, Exhibit A, *Text of Compact*.

<sup>26</sup>Article II, (b).

<sup>27</sup>Article III, (d).

right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Basin shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d)."<sup>28</sup>

The fifth paragraph declares that "the States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water which can not reasonably be applied to domestic and agricultural uses."<sup>29</sup>

Concluding the Article, paragraphs six and seven outline the manner in which further equitable apportionment may be made of Colorado River water subsequent to October 1st, 1963. However, there is a condition which must be fulfilled before such further equitable apportionment may take place. That condition is that either the Upper or the Lower Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b) of Article III. When that condition has been met, "any two signatory States, acting through their Governors, may give joint notice of such desire (for a further apportionment) to the Governors of the other signatory States and to the President of the United States of America, and it shall be the duty of the Governors of the signatory States and of the President of the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin the beneficial use of the unapportioned water of the Colorado River System, as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America."<sup>30</sup>

The different provisions of these paragraphs of Article III merit consideration from several points of view. In the first place, the fact that steps were taken to apportion the waters to different parts of the Colorado River area tends to lead one to assume that there is not enough water to meet all requirements. However,

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<sup>28</sup>Article III, (c).

<sup>29</sup>Article III, (e).

<sup>30</sup>Article III, (g).

Article III, (f), states the time and the condition as follows: "Further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b) and (c) may be made in the manner provided in paragraph (g) at any time after October 1st, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b)."

there are numerous statements in the records indicating that there is an abundance of water. The evidence on both sides must be weighed to determine the true situation. Secondly, the question of division of water to separate states versus the division of water to separate basins was an important issue in framing the article. In the third place, there was considerable discussion concerning whether or not the Upper Basin would develop more slowly than the Lower Basin. A fourth consideration deals with the question of how much water should be apportioned to each Basin, and the part to be furnished to Mexico. The question of storage is a fifth item to be considered. Finally, the question of whether or not the apportionment is a permanent apportionment or one which should exist only for a period of years, must be examined.

We have conflicting points of view on the question of whether or not there is sufficient water in the river to meet all needs. It is obvious that if it were certain that there is sufficient water for all concerned, there would seem to be no necessity for entering into the Compact. Among those who assert that there is sufficient water to meet all the needs of the people within the basin are Mr. A. P. Davis, Director and Chief Engineer of the Reclamation Service, Mr. Harry Chandler, owner of land in Mexico which is watered by the Colorado River, Mr. J. C. Allison, representative of owners of Mexican lands, Mr. Benjamin Fly, also a representative of landowners in Mexico, Mr. Hoover, Chairman of the Commission, and Representative Hayden. The point of view of these men is based quite largely upon Mr. A. P. Davis' belief that there is sufficient water to meet all demands.<sup>31</sup>

However, Mr. Norviel of Arizona raised the question of the adequacy of the water supply by remarking, "If there is water enough for all, then why all this division and this restriction upon the amount of water flow?"<sup>32</sup> Mr. Elwood Mead, Commissioner of the Bureau of Reclamation, Department of the Interior, is authority for the statement that there was an acute water shortage

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<sup>31</sup>"MR. A. P. DAVIS: . . . . A year ago last August, in the meeting of the League of the Southwest in Denver, for the first time in public I was able to state that the progress of investigations had reached a point where I felt confident that with proper and sufficient conservation which was thought advisable there would be sufficient water for the irrigation of all lands that could be favorably reached from the standpoint of economics within or adjacent to the Colorado Basin, not only by gravity but by reasonable pumping."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., Thursday, 10 a. m., Jan. 26, 1922, p. 28.

See, also, Appendix II, Exhibit Z, *Political Aspects of Mexican Claims to Colorado River Water*.

<sup>32</sup>Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 a. m., Nov. 11, 1922.

in 1922 in the Imperial Valley, which resulted in a "very serious loss to the Valley".<sup>33</sup> Colonel William Kelly, Chief Engineer of the Federal Power Commission, also takes the point of view that "there are more than enough irrigable lands to use all the water available."<sup>34</sup> Mark Rose, a representative of the Imperial Country Farm Bureau, states that for 76 days in the summer of 1924 the Imperial Canal took all the water which was available at the point of diversion. He pointed out that under the terms of the contract with Mexican interests, one-half of this supply might have been claimed for use in Mexico.<sup>35</sup> Mr. E. C. LaRue, as early as 1916, came to the conclusion that the flow of the Colorado River and its tributaries was not sufficient to irrigate all of the irrigable lands lying within the basin.<sup>36</sup> Still another student of this question who asserts that there is not sufficient water to meet all needs, is Mr. G. E. P. Smith of the University of Arizona. "It has long been apparent," wrote Mr. Smith, "that the water supply of the Colorado is inadequate for all the demands that will be made upon it, as is the case with many other streams in the West."<sup>37</sup> From these data we may conclude that there is not sufficient water in the Colorado River basin to meet all needs.<sup>38</sup>

It is evident from the minutes of the meetings which were held prior to the drafting of the Compact in its final form, that the purpose of the Commissioners was to divide the water of that stream among the seven states concerned. Soon after negotiations had commenced, however, it became apparent that insuperable difficulties would be encountered if this division were attempted.<sup>39</sup> When it was found impossible to make the alloca-

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<sup>33</sup>*Hearings*, Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress, Second Session, S. 727, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin, Part II, Jan. 23, 1925, p. 228, Washington, Government Printing Office, 1925.

<sup>34</sup>*The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, pp. 795-836, 796, August, 1924.

<sup>35</sup>*Hearings*, Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress, Second Session, S. 727, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin, Part I, Dec. 23, 1924, p. 177, Washington, Government Printing Office, 1925.

<sup>36</sup>*Hearings*, H. R. 2903, Part V, p. 973, March 26, 1924.

<sup>37</sup>50 Proceedings of the American Society of Civil Engineers, No. 9, p. 1493, November 1924.

<sup>38</sup>For further details on the question of whether or not the Colorado River contains enough water to meet all demands, see Appendix II, Exhibit P, *Adequacy of Colorado River Water Supply*.

<sup>39</sup>"It was the endeavor of the Commission at its first session to arrive at a basis whereby a definite apportionment of the use of water could be made to each of the seven States. After extended consideration this plan was found to be impractical by reason of the facts that accurate determination could not now be made as to the possibilities of development in the different States, and agreement could not be reached upon any relative figures. By reason of the fact that

tion upon this basis, it was agreed to make an apportionment of the waters of the Colorado between the Upper and Lower Basins. The fact that the Upper Basin is separated from the Lower Basin by a long stretch of mountainous country, through which the river flows in deep canyons, gave some basis for this method of division.<sup>40</sup> But it is quite evident that the main reason for the division was the impossibility of making an apportionment between the separate states.<sup>41</sup>

When the problem of dividing the water between the separate states proved to be insoluble and recourse had been had to the idea of dividing the water between the Basins there was still an appreciation among the members of the Commission of the difficulty of arriving at any just distribution of the waters of the stream. The Colorado Representative, Mr. Carpenter, remarked: "We must be a little broad in this matter. We can't partition this river with exactness."<sup>42</sup> Several of the preliminary drafts contain provisions for the allocation of a definite number of acre-feet of water to each of the interested states.<sup>43</sup> However, the Commission wished to make some headway and the plan of apportioning the water between the Upper and Lower Basins was seized upon as a method of saving the conference from a premature adjournment.<sup>44</sup>

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the great conflict arises between the interests in the Upper Basin and the Lower Basin, it was finally agreed that apportionment between the two should form the basis of the Compact so far as the division of water was concerned. The apportionment of water allowed to each division is more than sufficient for the ultimate use of water in each so far as same is determined by the present estimates of the United States Reclamation Service."—Emerson, Frank C., Commissioner of Wyoming, *Report to Wyoming Legislature*, p. 14, Jan. 18, 1923.

"MR. DAVIS: When the commission first met the thought was that there could be an apportionment of the waters of this river among each of the States individually, giving so much water to Colorado, so much to California, so much to Utah, etc."—*Hearings*, H. R. 2903, Part VIII, p. 1750, May 15, 1924.

<sup>40</sup>"Now, the reason for selecting that point was that it is a natural point on the earth's surface for the making of such a division. . . . The river there enters a continuous canyon and runs for several hundred miles in a canyon, where the water can be taken for power purposes, perhaps, but can not be diverted from the bed of the stream to any extent. It further happens, speaking roughly, that the interests of the States above that point were more or less identical, and the interests of the States below that point were more or less identical, as between themselves; so that it is a natural diversion point."—*Ibid.*

<sup>41</sup>Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, p. 40, Monday, 3 p. m., Nov. 13, 1922.

See Appendix II, Exhibit Q, *Allocation to States versus Allocation to Basins*.

<sup>42</sup>Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, p. 40, Monday, 3 p. m., Nov. 13, 1922.

See Appendix II, Exhibit Q, *Allocation to States versus Allocation to Basins*.

<sup>43</sup>See Appendix II, Exhibit M, *Proposed Drafts*.

<sup>44</sup>See Appendix II, Exhibit Q, *Allocation to States versus Allocation to Basins*.

A question which is material to the determination of the amount of water to be allotted to each Basin is that of the relative rapidity of development of the Upper and Lower Basins. Mr. Hoover has pointed out that in every stream there is a tendency for the lower portion of the stream to be susceptible of development prior to the time that the upper portion of the stream is developed. This is due to the fact that the lower reaches of the stream may generally be developed more economically.<sup>45</sup>

The representatives of the Upper Basin states emphatically assert this view. Arguing that the flood menace of the lower states is fully realized and sensed by all the members of the Commission, Mr. Carpenter declared that this realization would result in a forced development of the Lower Basin. On the other hand, the representatives of the upper states were of the opinion that there are no conditions which will lead to a forced development of the upper states because there is no impending disaster in that area, and that the states of the Upper Basin therefore will develop along natural lines.<sup>46</sup>

It is plain that if there is a sound basis for the belief that the Upper Basin states will develop less rapidly than the Lower Basin States, a fact of importance will be added to the negotiations for the division of the water, for the Wyoming-Colorado decision holds that the water users of those areas in which the water is first put to beneficial use have a dominant claim to the continued use of the water. Thus, if Arizona is now ready to develop large acreage by putting her land under irrigation, the Upper Basin states will not at a later date have the opportunity of creating rights to the water which they will then find in use.<sup>47</sup>

Any action leading to the apportionment of water of a stream to different areas having need of the water, raises the question

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<sup>45</sup>"The tendency, of course, in all irrigation development is to develop the lower reaches of the rivers first, largely because that is the most economical and usually possess the largest area of available land."—*Hearings*, H. R. 2903, Part I, p. 46, Feb. 13, 1924.

<sup>46</sup>"MR. CARPENTER: The flood menace of the South is fully realized and sensed by all of us. It appeals to us and we desire to formulate some plan to protect the people against disaster. This will result in a fast development below, a forced development, a forced growth—and this to prevent disaster.

"There is no impending disaster above. That country should develop along its natural lines. It is to the welfare of the river that it should not develop suddenly above, and it is to the welfare of the river that it should develop suddenly below."—Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 6-8, Monday, 3 p. m., Nov. 13, 1922.

See Appendix II, Exhibit R, *Rate of Development of Upper and Lower Basins*.

<sup>47</sup>"MR. MCCLURE: Why are you not willing to have priorities prevail and have an agreement to that effect?

"MR. RUMP: Because we don't want to have the time come that when we put new land under development, California and Arizona and New Mexico

of standards by which such division shall be made. Several possible criteria of division will be discussed in a subsequent chapter.<sup>48</sup> Should the amount of rain and snow falling in the different areas be the determining factor? This would leave states with the climate of Arizona without a substantial claim to the water of the Colorado. Should the number of irrigable acres within the borders of a state afford the basis of division? This would give Arizona a large claim. Should the relative productivity of the soil be taken into consideration? If so, to what extent should the comparative values of the crops produced in the different areas be regarded as a proper criterion of productivity?

Reserving our discussion of such issues for the chapter dealing with the economic background of the Compact, we now direct our attention to the process by which it was finally agreed that the states of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of the Compact.

The language of paragraph (a) of Article III is as follows: "There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin respectively the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist." This provision must be taken with paragraph (d) of the same Article which reads: "The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive

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should come here and say, 'You let that water go by; you are not to use it first and then pass it on.'

"MR. McCLURE: Just so, there is an abundance in the river (you say there is) for all the land, it doesn't make any difference to us whether it is second-hand or third-hand water, if there is enough for all, you cannot complain of that sort of a proposition.

"MR. RUMP: We don't want to place any restriction on our development.

"MR. McCLURE: Then you do want to place a restriction on the development of the lower lands.

"MR. RUMP: No, you can do whatever is best for the irrigation of your land your flood controls will supply. We have more water going out of the state than we can expect or you can expect to use.

"MR. McCLURE: I think that is right, but we ought to write it in the paper that way somehow or other, rather than have a restricted right."—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, pp. 51-52, March 29, 1922.

See Appendix II, Exhibit R, *Rate of Development of Upper and Lower Basins*.

<sup>48</sup>Chapter IV, *Economic Background*.

years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this Compact." The two sentences just quoted are perhaps the most important sentences of the Compact.

Several suggestions were made concerning the manner in which the water should be divided. The first in point of time seems to be that of Mr. John C. Hoyt of the Geological Survey. This was presented in the form of a statement to the Colorado River Commission at the Phoenix Hearings in March, 1922.<sup>49</sup> According to Mr. Hoyt's plan, 65 per cent of the flow of the river "shall reach the canyon section of the river and . . . no rights for power or irrigation shall be created in or below the canyon that will deprive the States of Colorado, Wyoming, and Utah of a right to consume 35 per cent of the present flow above the canyon." The allotment suggested by Mr. Hoyt would apply for fifty years, after which a new agreement is contemplated.<sup>50</sup>

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<sup>49</sup>Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, pp. 128-129, March 15-17, 1922.

<sup>50</sup>"It is believed that all interests will be fully protected by an agreement that at least 65 per cent of the flow shall reach the canyon section of the river and that no rights for power or irrigation shall be created in or below the canyon that will deprive the States of Colorado, Wyoming, and Utah of a right to consume 35 per cent of the present flow above the canyon. This allotment should apply for 50 years, after which a new agreement should be made.

"On this basis of division Colorado, which contributes 11,800,000 acre-feet to the flow of the river, would retain 4,130,000 acre-feet, which with an average consumption of 1½ acre-feet per acre, would irrigate 2,753,300 acres. It would release to the lower river 7,670,000 acre-feet. On the same basis Wyoming, which contributes 2,300,000 acre-feet, would retain 805,000 acre-feet, enough to irrigate 536,600 acres, and it would release to the lower river 1,495,000 acre-feet. Utah, which contributes 2,300,000 acre-feet, would retain 805,000 acre-feet, or enough to irrigate 536,600 acres, and would release to the lower river 1,495,000 acre-feet.

Various estimates have been made of the additional irrigable lands in Colorado, Wyoming, and Utah. These estimates generally come well within the additional acreage, for which water would be available under the plan of division, set forth above. Furthermore, it is interesting to note that the records of mean annual flow for 18 years at Yuma show a slightly larger average annual flow for the last nine years than for the first nine, indicating that the consumption which has taken place in the drainage basin during the period covered by the records has not, since the records started, been sufficient to show above the cycle variations and the errors of measurement. In making this statement it is of course recognized that irrigation consumes water.

"By this plan 10,660,000 acre-feet would be released above the Utah-Arizona line, or 9,100,000 acre-feet if Colorado and New Mexico are allowed to use the total flow of the San Juan,

"With an average consumption of 3 acre-feet per acre in the lower basin, the quantity of water allowed to pass through the canyon section will be sufficient to irrigate 3,033,000 acres. This area would include, however, the tracts now irrigated in Imperial Valley, as the diversion for that system is made below the gauging station at Yuma. In addition Arizona would have full use of the flow from Little Colorado, Williams, and Gila Rivers, aggregating 1,375,000 acre-feet less diversion from the Gila in New Mexico, or enough to irrigate 425,000 additional acres."—Hoyt, John C. Geological Survey, Department of the In-

It is clear that the division of the water of the Colorado, in the manner proposed by Mr. Hoyt, would be based only upon an approximation of the demands of the respective Basins. "I selected a figure that I considered would cover all possible demands," said Mr. Hoyt.<sup>51</sup> This manner of approach is perhaps the most satisfactory method available for dealing with a problem of this kind, but it leaves much to be desired. The element of certainty is almost entirely lacking.

Mr. Hoyt's method of handling the problem of division of Colorado River water was given serious consideration by the Colorado River Commission in its Santa Fe meetings.<sup>52</sup> It was not long, however, before this plan of division which would have provided 65 per cent of the water flowing through the canyon section of the river for the use of the Lower Basin and only 35 per cent for the use of Colorado, Utah and Wyoming, was abandoned.

Several factors contributed to the discard of the 65-35 plan of division of the water of the Colorado River. In the first place, drafts of proposed agreements provided that the division of water at Lee Ferry should be based upon the flow of the river computed for a period of years.<sup>53</sup> In the discussion which centered around this provision, the question of whether or not a minimum flow of the river at Lee Ferry should be guaranteed by the Upper Basin caused heated argument. Finally, the related question of storage led to prolonged debate. The net result was that the representatives of the states of the Upper Basin won their point at every turn. Instead of there being incorporated in the final form of the Compact a provision to the effect that Colorado, Wyoming, and Utah—in short, the Upper Basin—should have the use of 35 per cent of the flow of the river as against 65 per cent for the area drawing its water from the portion of the river below the canyon section, with a definite amount of water guaranteed by that Upper Basin as a minimum annual flow, the Compact as signed provided 75,000,000 acre-feet would be allowed to pass Lee Ferry during each ten-year period, no minimum annual flow was guaranteed, and no agreement was made to cooperate in procuring storage for the benefit of the Lower Basin in making

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terior, Washington, D. C., *Statement before Colorado River Commission*, Phoenix Hearings, Federal Court Rooms and High School Auditorium, Phoenix, pp. 128-129, March 15-17, 1922.

<sup>51</sup>Hoyt, John C. *Statement before Colorado River Commission*, Phoenix Hearings, Federal Court Rooms and High School Auditorium, Phoenix, p. 131, March 15-17, 1922.

<sup>52</sup>Colorado River Commission, *Minutes of the Fifteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 52-55, Tuesday, 10 a. m., Nov. 14, 1922.

<sup>53</sup>See Appendix II, Exhibit M, *Proposed Drafts*.

the water forced upon the Lower Basin during years of plenty, available for use in years of drought. As already stated, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum was apportioned to the Upper Basin.<sup>54</sup>

The flow of the Colorado River is not uniform each year.<sup>55</sup> This fact is undoubtedly the reason why the idea of apportioning its waters upon the basis of its flow during a number of years, was suggested to the Commission. Mr. Carpenter, Commissioner for Colorado, suggested that the fairest way to gauge a river was to use a twenty-year average. Commissioner Caldwell of Utah showed that this method would be "impracticable if applied to the Colorado because the average flow at a given point would be disturbed by the diversions which had taken place above that point."<sup>56</sup> Norviel of Arizona did not believe his state would be satisfied with a "longer period than three years to average the flow to be turned down the river."<sup>57</sup> The ten-year period was the one finally selected, each period to be reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of the Compact.<sup>58</sup>

A second factor leading to the discard of the apportionment of the water upon the 65-35 per cent basis, was the wearing down

<sup>54</sup>The language of paragraph (a), Article III, would indicate that the same is apportioned to the Lower Basin. However, these words are of no practical effect as far as the Lower Basin is concerned because of the provisions of paragraph (d) of Article III—75,000,000 acre-feet for any period of ten consecutive years.

<sup>55</sup>The run-off at Yuma, Arizona, for the years 1903-1920, inclusive, has been as follows, expressed in thousands of acre-feet: 11,300; 10,100; 19,700; 19,500; 25,500; 13,700; 26,000; 14,300; 17,800; 18,400; 11,800; 20,700; 14,600; 23,100; 20,600; 13,100; 10,700; 21,400.—Senate Document No. 142, Sixty-Seventh Congress, Second Session, *Problems of Imperial Valley and Vicinity*, p. 220, Washington, Government Printing office, 1922.

The annual flow of the Colorado at Lee Ferry approximates 16,500,000 acre-feet.—Davis, A. P., Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, p. 59, Monday, 3 p. m., Nov. 13, 1922.

<sup>56</sup>Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 29-30, Monday, 10 a. m., Nov. 13, 1922.

<sup>57</sup>Colorado River Commission, *Minutes of the Thirteenth Meeting*, Santa Fe, p. 18, Monday, 10 a. m., Nov. 13, 1922.

<sup>58</sup>"MR. NORVIEL: I might ask this question then: Is the ten-year period a continuing thing, or is it just for the first ten years?"

"MR. CARPENTER: Yes, it says any ten-year period. Suppose you were on the twelfth year. You take that year and include the nine preceding years. On the thirteenth year, you could take the nine preceding years.

"MR. NORVIEL: The periods overlap, do they?"

"MR. CARPENTER: Well, you can make them overlap, yes. It is what I would call more of a progressive ten years. Each year would have nine years behind it. Those taken with the one particular year in question would make the ten-year period."—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, p. 6, Sunday, 8 p. m., Nov. 12, 1922.

See Appendix II, Exhibit FF, *The Ten-Year Provision*.

of the resistance of the Arizona representative in the prolonged discussion on the question of a minimum annual flow to be guaranteed to the Lower Basin by the Upper Basin.<sup>59</sup>

Mr. Norviel took the position that if the basis of division between the two Basins was to be the average flow of the river for any period of ten consecutive years measured in continuing progressive series, it was absolutely essential that a certain number of acre-feet passing Lee Ferry be designated as a minimum flow which the Upper Basin would undertake to furnish the Lower Basin each and every year. Mr. Norviel argued that certain dry years might occur during which there would not be sufficient water to supply both the Upper and Lower Basins with the amounts apportioned to them by an interstate agreement. In such a year the Lower Basin could not demand even a portion of the available supply if the Upper Basin, during the preceding nine years of the ten-year period, had supplied quantities of water which, in their total volume, constituted the amount required by the interstate agreement to be furnished to the Lower Basin.

An illustration drawn from the field of banking was used to make clear this result of a clause providing that the measurement of the flow of water at the point of division between the two Basins should be based upon a ten-year period. The argument declared that during years of heavy rainfall the Upper Basin states, having no use for the surplus water then available, would gladly allow it to pass through the Canyon into the Lower Basin. But as it flowed through the Canyon it would be measured and credited to the Upper Basin states. Then when dry years came, the representatives of the Upper Basin states would point proudly to the record of the flow of water through the canyon during the preceding years and show that they had delivered more water to the Lower Basin than was required of them by the interstate agreement, and that the ten-year period had not expired. Having fulfilled their obligations by "banking" the water in years of plenty, it was asserted that they would argue that they might legally use all the water in the river during the years of drought and prevent any from passing through the canyon to the Lower Basin during such years of drought.

To this position the Lower Basin representatives made ready answer. Their argument was that although the amount of water specified had been delivered to the Lower Basin, it had been de-

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<sup>59</sup>Particular reference is made to the *Commissioner from Arizona* because the records show that Mr. Norviel took the leading part in urging that a guaranteed minimum annual flow was essential to protect the rights of the Lower Basin unless storage were provided prior to the coming into effect of the Compact.

livered at times when there was a surplus of water available. Provide us, they said, with the facilities for storage and we will accept the ten-year measurement period. But until storage is provided it does us no good to have 30,000,000 acre-feet of water sent to us one year and none during the next five or six years.<sup>60</sup> The idea of the Upper Basin states "banking" the water, and withdrawing credit for the water which has passed through the measuring stations in the canyon, has no practical application until a "bank", in the form of storage reservoirs, shall have been provided.

As a result of the insistence of Commissioner Norviel of Arizona, the principle of a guaranteed minimum annual flow was tentatively agreed upon at one stage of the negotiations of the Colorado River Compact.<sup>61</sup> However, the Compact as finally drafted contained no provision relating to a guaranteed minimum annual flow.<sup>62</sup> Neither did it contain any provision to the effect that the states of the Upper Basin would assist the states of the Lower Basin in procuring storage before the terms of the Compact should become effective.<sup>63</sup>

The discussion concerning the measurement of the flow of the Colorado River for a term of years as the basis of apportionment, the argument concerning a guaranteed annual minimum flow, and the controversy concerning the question of whether or not storage should be a condition precedent to a division of the water were factors which contributed to the discard of the proposal to divide the water upon a 65-35 per cent basis. The abandonment of this method of division was achieved by gradually wearing down the opposition presented by the Arizona representative, who had little or no support from the Commissioners of the other Lower Basin states. Having an understanding of the reasons why the 65-35 per cent method of division was rejected, we are now prepared to resume the main thread of this portion of the chapter and discuss the second proposal for the division of the water which was considered prior to the adoption of the article in the form in which it finally emerged from the conference room.

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<sup>60</sup>Norviel, W. S. Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, p. 46, Saturday, 10 a. m., Nov. 11, 1922.

<sup>61</sup>Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, p. 33, Monday, 3 p. m., Nov. 13, 1922.

<sup>62</sup>See Appendix II, Exhibit S, *Guaranteed Minimum Annual Flow*, for further data as shown by the minutes of the meetings.

<sup>63</sup>See Appendix II, Exhibit T, *Storage as a Condition Precedent to a Division of the Water*, for some of the minutes on this point.

The California legislature in 1925 conditioned its ratification of the six-state agreement upon the construction of dams for storage purposes.—Appendix II, Exhibit KK, *The Six-State Compact*.

The second proposal was that the water of the Colorado be divided between the Upper Basin and the Lower Basin in equal portions. The testimony of Mr. A. P. Davis, Director of the United States Reclamation Service, was used as the basis for determining the number of acre-feet which would represent one-half of the flow of the river at Lee Ferry. In the first part of the negotiations on this point that figure was set at 8,200,000 acre-feet, the total annual flow being 16,400,000 acre-feet. When this number had been determined upon, Mr. Hoover as Chairman of the Commission summarized the discussion and suggested that the upper states consider whether or not they would be willing to allow 82,000,000 acre-feet to flow through the canyon during each ten-year period. Coupled with this proposition was the further suggestion that the upper states guarantee to the lower states a minimum annual flow of 4,500,000 acre-feet.

These suggestions were opposed by representatives of the upper states. The number of acre-feet to be furnished in the ten-year period was regarded as too high, and Mr. Carpenter stated that if the upper states were crowded on the minimum flow by being compelled to guarantee a minimum annual flow, they would have to have a protecting clause on precipitation because precipitation was something which they could not control. Mr. Hoover replied, "You are seeking protection from a shortage on precipitation beyond that heretofore known."<sup>64</sup>

To the proposal that 82,000,000 acre-feet of water be allowed to pass through the canyon of the river during each ten-year period, the representatives of the upper states made a counter suggestion. They proposed that the figure be set at 65,000,000 acre-feet, but offered no guaranteed minimum annual flow. Norviel of Arizona still held out for the original terms—82,000,000 acre-feet during each ten-year period, and a guaranteed minimum annual flow at Lee Ferry of 4,500,000 acre-feet. Later, however, the Commissioner for Arizona modified his position with respect to a guaranteed minimum annual flow by offering to accept a plan which would provide that in the event that the Upper Division should in any year exceed its percentage and thus deprive the Lower Division of its share, compensation should be made for the deficiency during the next two succeeding years.

The result was a compromise. It was agreed that 75,000,000 acre-feet should be allowed to pass through the canyon during each ten-year period. No mention was made of a guaranteed minimum annual flow. Without doubt the representatives of the states of the Upper Basin had won an important victory.

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<sup>64</sup>Colorado River Commission, *Minutes of the Sixteenth Meeting*, Bishop's Lodge, Santa Fe, p. 29, Tuesday, 3 p. m., Nov. 14, 1922.

They had succeeded in decreasing the number of acre-feet to be delivered through the canyon to the lower states in each ten-year period, by 7,000,000 less than the number which Director A. P. Davis of the Reclamation Service said should be delivered to constitute an equal division between the respective Basins. Moreover, they had avoided any responsibility for the delivery of a guaranteed minimum annual flow.<sup>65</sup>

The phrase "exclusive beneficial consumptive use" and the word "apportioned" used in Article III, paragraph (a), defining the right of the Basins, gave great concern to the Commissioners. The first one of these terms, the phrase "exclusive beneficial consumptive use," was taken by some of the Commissioners to raise the legal problem of whether or not representatives of the separate states could apportion or divide the corpus of the water. The second was selected to express the idea of division of the water between the Upper Basin and the Lower Basin because several of the Commissioners believed that its connotation was somewhat different from the meaning suggested by other terms. It was thought that the word "apportioned" did not imply appropriation and therefore did not raise the question of whether or not the interstate agreement would have any effect upon the existing system of vesting of water rights by appropriation under state law in the several states of the Colorado River area.<sup>66</sup>

The legal problem of whether or not the representatives of the separate states may apportion the corpus of the water will be discussed in some detail in Chapter V, Constitutional Questions. It caused much argument at the time the Compact was drafted, and in the minutes of the meetings of the Commission we find remarks forewarning us of the Hamele-Bannister controversy, treated in a subsequent chapter dealing with constitutional issues involved in Colorado River development.<sup>67</sup>

The center of the problem is the question of whether or not the federal government or the government of each state is the source of the right to use the water of an interstate stream such as the Colorado River. Mr. Hamele, Chief Counsel of the Reclamation Service, takes the position that the federal government is

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<sup>65</sup>See Appendix II, Exhibit U, *The 75,000,000 Acre-Feet Provision*.

<sup>66</sup>"We have kept the word 'unappropriated' out of this whole paragraph," said Chairman Hoover when speaking of Article III. "It is all based on apportionment, not on appropriation."—Colorado River Commission, *Minutes of the Twenty-Second Meeting*, Bishop's Lodge, Santa Fe, p. 9, Wednesday, 10 a. m., Nov. 22, 1922.

There are indications leading one to believe that Mr. Hoover deleted these words.

<sup>67</sup>Chapter V, *Constitutional Questions*.

See, also, Appendix II, Exhibit MM, *Protection to Upper Basin States by Provisions in Federal Legislation*.

the source of the right to use such water; Messrs. Bannister and Carpenter of Colorado take the opposite view. The practical importance of the question lies in the fact that if the federal government is the source of the right, then the states, by entering into a definitive agreement concerning their respective rights to the waters of the Colorado River, would be taking unwarranted action. Such action could then be placed upon a firm legal basis only by a transfer of the rights of the federal government to the several states, a step which Chairman Hoover asserted would be very difficult to get Congress to take.<sup>68</sup>

The Commissioners sought to use language in the Compact which would avoid the issue. The phrase "beneficial consumptive use", was decided upon as the most nearly satisfactory expression. It was supplemented by a statement inserted in the official records of the proceedings to the effect that "the States of the Upper Division . . . wish to state affirmatively . . . that it is the understanding that the use of the language in Article III constitutes no waiver on their part or on the part of any one of them to any claim of ownership which they may have to the corpus of the waters or any recognition of any right or claim on the part of the United States to the corpus of any of the unappropriated water of the stream, it being the understanding of those states that the language used is a middle ground which in no way raises or affects the title of ownership."<sup>69</sup> This was subsequently adopted as the statement of all the Commissioners.<sup>70</sup>

Before the apportionment made in the Colorado River Compact to the Upper and Lower Basins was definitely determined upon, there occurred quite a lengthy discussion of the share in the use of the waters of that stream which might be granted to Mexico by international treaty. This question of the participation of Mexico in the use of any Colorado River water caused Mr. Hoover to assert that any question concerning the international condition of the river should be left out of consideration. The minutes of the meetings referred to the Chairman and state Commissioners for correction show that at least twenty pages of testimony and discussion dealing with the international phase of the problem were deleted from the records of the proceedings of the Commission. The Commissioners seemed to agree that the Colorado Commission itself could not handle this phase of the

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<sup>68</sup>Colorado River Commission, *Minutes of the Second Part, Meeting of Nov. 24, 1922*, Bishop's Lodge, Santa Fe, p. 12, Friday, 10 a. m.

<sup>69</sup>*Ibid.*, p. 15.

<sup>70</sup>See Appendix II, Exhibit W, *Exclusive Beneficial Consumptive Use*.

question, but nevertheless the issue proved difficult to suppress.<sup>71</sup>

The persistence of this problem of the international status of the river is due to the fact that until some definite determination shall have been reached concerning the rights of Mexico in the water of the stream, the rights of the Upper and Lower Basin will remain indefinite and subject to change. This has been admitted in Article III, paragraph (c), by the provision which declares that any right to the use of any waters of the Colorado River System which may be recognized in Mexico shall be supplied from the waters which are surplus over and above the aggregate of the quantities apportioned to the Upper Basin and to the Lower Basin, or, if such surplus proves insufficient for the purpose, the burden of the deficiency shall be borne equally by the Upper Basin and the Lower Basin.

From the provisions of the Compact mentioned in the preceding paragraph, it follows that if a relatively large amount of water is guaranteed to Mexico by an international treaty with the United States, it will mean that a burden will be placed upon the people of the Upper and Lower Basins in the United States, to supply the Mexican demands. Nor is Mexico hesitant in asserting her interests in the Colorado River. By a letter from the President of the Compañia de Terrenos el Nuevo Mundo, dated March 18, 1912, and addressed to Senor Don Manuel Calero, Minister de Relaciones, Mexico, D. F., request was made for the immediate granting of an appropriation of water to that company on the same estimate of five and one-half acre-feet per acre as the United States appropriation of water for projects on the north side of the international boundary. This request was made with the object and intent of immediately placing the water upon the land by pumping, in order to create an actual diversion of water which would be used by the Mexican government as a basis on which to demand that quantity of water on the ground of accomplished diversion and use. Furthermore the same letter stated that the company's object was to subdivide the land, and included an application for the right of both foreign and native colonization within the zone.

Mexico has had her spokesmen present at different conferences dealing with the question of water rights in the Colorado

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<sup>71</sup>"CHAIRMAN HOOVER: I want to make a suggestion to you, that is that we should cut out all discussion with reference to Mexico everywhere because we have presented arguments pro and con here that will yet be quoted against us. With that problem we don't want to embarrass anybody about it and if nobody dissents I will take occasion to cut out all discussions as far as these meetings are concerned."—Colorado River Commission, *Minutes of the Twenty-Second Meeting*, Bishop's Lodge, Santa Fe, pp. 1-2, Wednesday, 10 a. m., Nov 22, 1922.

River. The minutes of the League of the Southwest for the Santa Barbara meeting of Friday, June 8, 1923, show that Mexico's representative on that occasion was the Honorable Armando Santacruz, Jr., a member of the Board of International Waters.<sup>72</sup>

Another question which was of some importance in the negotiations leading up to the final drafting of the third article of the Compact is that of storage to be provided for the water. This is of importance as a condition affecting the final division of the water between the Upper and Lower Basin because a regulated river will provide more water to be divided than if the river is not regulated. Waters now going to waste in the flood period of the year will be conserved under a system of storage and be made available for use throughout the different sections of the river.

The question of storage, however, was not finally determined to the satisfaction of all the members of the Commission by the provisions of the Compact because the discussion of the issue raised questions of such a nature that the Commission did not consider itself competent to settle them. A compromise measure was worked out in paragraph (b), Article III, providing that in addition to the apportionment which was actually made between the Upper Basin and the Lower Basin, the Lower Basin should be given the right to increase its beneficial consumptive use of water by one million acre-feet per annum. This provision must be interpreted in connection with Article VIII of the Compact which declares that 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 present perfected 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."

The practical effect of these provisions is that the burden of constructing reservoirs to regulate the flow of the river and to provide water for use during dry seasons, is placed squarely upon

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<sup>72</sup>Morning session, p. 135.

Mr. L. Ward Bannister of Colorado stated in an interview of March 7, 1924, that it was not uncommon for Mexican delegates to be present at conferences dealing with Colorado River matters. Their attendance is in many cases entirely unofficial.

For additional data concerning the manner in which Mexico's claims affect the problem of division of the water of the Colorado between the Upper Basin and the Lower Basin in the United States, see Appendix II, Exhibit Y, *Relation of Mexican Claims to the Division of Water in the United States*.

Related material showing the nature of political issues arising by reason of Mexican claims, is presented in Appendix II, Exhibit Z, *Political Aspects of Mexican Claims to Colorado River Water*.

the Lower Basin. There is no corresponding obligation assumed by the Upper Basin. No responsibility of any kind is acknowledged by those states. "Whenever storage capacity of 5,000,000 acre-feet shall have been provided . . . within or for the benefit of the Lower Basin," whether as a result of the aid of the Upper Basin or in spite of the opposition of representatives and senators of the states of the Upper Basin, present perfected rights to the beneficial use of waters of the Colorado River System in the Lower Basin must be satisfied from the water stored in the reservoirs of the Lower Basin.

The water to fill any reservoir space provided in the Lower Basin is part of the quantity apportioned by Article III. Our study of that article makes it clear that an unduly large portion of the 75,000,000 acre-feet allotted to the Lower Basin during each ten-year period, may be forced upon the Lower Basin during any one of the ten years, there being no guaranteed minimum annual-flow clause in the Compact. The result is that the Compact would make it necessary for the Lower Basin to construct dams for storage purposes if they entered into the Compact. The states of the Lower Basin would be getting nothing which they do not already have. They might at least expect assurance that the states of the Upper Basin would undertake definite responsibilities in the building of storage facilities. On the other hand, the Upper Basin would secure rights to the use of 7,500,000 acre-feet of water each year, whether or not such waters were put to beneficial use.

With these facts in mind it is easy to understand why paragraph (b) of Article III was included in the Compact.<sup>73</sup> That paragraph provides that in addition to the 7,500,000 acre-feet of water per annum which are designated as the share of the Lower Basin by paragraph (a), "the Lower Basin is hereby given the right to increase its beneficial consumptive use of the waters of the Colorado River System by 1,000,000 acre-feet per annum."

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<sup>73</sup>Mr. Bannister erroneously asserts that this paragraph was inserted because the Commissioner from Arizona "was so persistently obstinate."

" . . . You may wonder why the three southern states have received in this compact a million more acre-feet of water than has been received by the northern states. I have wondered about it myself, but the explanation is that the Commissioner of Arizona was so persistently obstinate, and in the opinion of the upper states, so unreasonably obstinate, that he would not sign the compact unless he obtained an extra pound of flesh. Hence, the bonus of one million acre feet to the three states of the South.

"I do not think it at all likely that this compact will ever be re-negotiated in the slightest particular, but if it ever should be negotiated, the first thing which the upper states are going to demand, is the cancellation of that bonus demanded by Arizona as the price of her pen."—Bannister, L. Ward, *The Colorado River Compact and the Colorado-Wyoming Decision*, Records of the League of the Southwest, Santa Barbara Meeting, pp. 202, 208, June 7-9, 1923.

Such a provision makes an excellent appearance, but its value is no greater than that of the clause which purports to apportion 7,500,000 acre-feet each year to the Lower Basin. Both are of no effect. Neither can be relied upon because of the conflicting clause providing that 75,000,000 acre-feet are to be delivered during each ten-year period, and because of the lack of a guarantee by the Upper Basin to the Lower Basin of a certain minimum annual flow.<sup>74</sup>

Having made an apportionment of the water of the stream, the question was raised as to the term of years during which this apportionment would remain in effect. Should it continue for ten years, or for fifty years, or should it be continued for an indefinite period? The manner in which this question was settled was by compromise. It was determined that a new apportionment might be made by the states concerned forty years subsequent to the time that the Compact was entered into. In 1963, in other words, steps may be taken for the further apportionment of the waters of the Colorado River.<sup>75</sup>

The Commissioners agreed that the Compact which was drawn up to be submitted to the various states could be changed by the same authority by which it was drafted. Unanimous consent of the participating parties will be required for any alteration of the agreement.<sup>76</sup>

The detailed analysis of Article III of the Compact has now been completed. This portion of the Compact contains the heart of the proposed interstate agreement. The terms embodied in the seven paragraphs of this article constituted the work which wrecked the program of ratification in the state legislatures. The

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<sup>74</sup>For the minutes on these points see Appendix II, Exhibit AA, *The Question of Storage in the Negotiations of the Colorado River Commission*.

<sup>75</sup>Commissioners of the Upper Basin states were desirous of making the period of time a long one. The minutes show that Commissioner Norviel, Arizona, regarded their insistence upon this point during the eighteenth meeting as almost the last extremity. One is led to believe that the representatives of the states of the Upper Basin realized that they were driving a good bargain and desired to avoid the necessity of their states negotiating another interstate agreement within at least a half century. See Appendix II, Exhibit BB, *The Provision for Reapportionment in 1963*.

<sup>76</sup>"MR. CARPENTER: . . . Of course, any compact we might make now can be abrogated or changed at any time by the same power that makes it. In other words, if ten years from today our efforts should prove to be so unfortunate that parties should wish to rid themselves of the compact, the same parties that make it may destroy it, but of course, that action would have to be unanimous, and might be difficult."—Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, p. 7, Monday, 3 p. m., Nov. 13, 1922.

"The Compact is not like any ordinary legislation or a treaty between nations, both of which can be changed readily. The Compact, when once ratified, will be permanent forever."—Smith, G. E. P., *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, p. 145, University of Arizona, College of Agriculture, Agricultural Experiment Station, Feb. 10, 1925.

definitive nature of the article—its attempt to apportion rights in Colorado River water for a term of forty years—proved too ambitious an enterprise. Another method dealing with the subject matter concerned will be suggested in the concluding chapter on the ground that the definitive apportionment at a particular moment of time, of water rights in an interstate stream, is ill-adapted to the question at hand.

Analysis of the remaining parts of the Compact may be accomplished in briefer compass. The discussion which preceded their adoption did not bulk as large in the proceedings of the Commission, nor are they of the importance of Article III.

Article IV consists of three paragraphs. The general subject of the Article is that of preferred uses of the water of the stream. According to the terms of paragraph (a) the waters of the Colorado shall be used for domestic, agricultural, and power purposes. It is distinctly asserted that the use of the waters for the purposes of navigation shall be subservient to these other uses. Paragraph (b), Article IV, states that any of the waters of the Colorado impounded and used for the generation of electrical power shall be subservient to the use and consumption of such water for agricultural and domestic purposes. By the provisions of paragraph (c) the regulation and control by each state is preserved with respect to the regulation and control of the use and distribution of water within its borders.<sup>77</sup>

Article V of the Compact looks to the cooperation of different officials of the several states and of the federal government for the purpose of continuing the development of the Colorado River. The following officials are named: first, the chief official of each signatory state charged with the administration of water rights; second, the Director of the United States Reclamation Service; and third, the Director of the United States Geological Survey.

The duties of these officials are specified in paragraphs (a), (b), and (c) of Article V. Paragraph (a) provides that they shall "promote the systematic determination and coordination of the facts as to flow, appropriation, consumption, and use of water in the Colorado Basin, and the interchange of available information in such matters." Paragraph (b) provides that they are to secure the ascertainment and publication of the annual flow of the Colorado River at Lee Ferry. By paragraph (c) they are charged with the general function of performing such other duties as may

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<sup>77</sup>See Appendix II, Exhibit G<sup>1</sup>, *Hierarchy of Priorities*.

be assigned by mutual consent of the signatory states from time to time.<sup>78</sup>

Article VI is the article of the Compact which makes a step towards setting up administrative machinery for handling any disputes which may arise from time to time concerning questions related to Colorado River matters. By the provisions of this Article any one of the governors of the states concerned in any particular controversy, may request the governor or governors of other interested states to appoint commissioners with power to consider and adjust such claim or controversy. It is contemplated that such consideration and adjustment of the claim or controversy shall be subject to the ratification of the legislatures of the several states.<sup>79</sup>

There are five types of questions which are specifically enumerated by Article VI concerning which adjudication may be made by representatives of the states. The first group of questions consists of those claims or controversies which arise with respect to the waters of the Colorado River System not covered by the terms of the Compact. The second group consists of any claim or controversies arising over the meaning or performance of any of the terms of the Compact. The third group of questions relates to those dealing with the allocation of the burdens incident to the performance of any article of the Compact or the delivery of waters provided by the Compact. The fourth group relates to those questions involved in the construction or operation of works within the Colorado River Basin located in two or more states or constructed in one state for the benefit of another state. The last group mentioned in this article consists of those

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<sup>78</sup>The relation of this plan to the work of a proposed Colorado River Authority will be considered in the concluding chapter.

<sup>79</sup>The last paragraph of Article VI makes it possible for States already having commissioners or a commission engaged in the work of determining rights between one or more other States, to continue such determination.

"There are now in existence Interstate Commissions created by Colorado and New Mexico, by Colorado and Wyoming, and by Wyoming and Utah, which are endeavoring to settle amicably certain questions which have arisen out of conflicting claims of right to the use of the Main Colorado River and its tributaries in Colorado, Wyoming and Utah and to those of the Little Colorado River as between Colorado and New Mexico. The final paragraph of Article VI was incorporated in the compact for the purpose of sanctioning the continued functioning of these Commissions, and as a necessary corollary, giving to any interstate agreement which might be reached by the Commissions and approved by the legislatures of the interested States a permanent status in any scheme for the harmonious development of the river in its entirety.

"It is to be presumed that in the event any such agreement be reached by the Commissions of two or more interested States and thereafter approved by their legislatures, supplemental legislation, if any be necessary, will be promptly enacted for the purpose of giving effect to the agreement and for providing a means whereby matters of detail may be taken up and adjusted from time to

questions relating to the diversion of water in one state for the benefit of another state.<sup>80</sup>

The seventh article of the Compact consists of the simple declaration that nothing in the interstate treaty shall be construed as affecting the obligations of the United States to Indian Tribes. There seems to have been no particular reason for including this article in the Compact except to make clear that it was not the intention of the Commissioners in any way to affect the rights of Indians.<sup>81</sup>

Article VIII provides that present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by the terms of the Compact. Rights other than those perfected at the present time are to be satisfied from water apportioned to the Basin in which the rights are located. The article also deals with the question of storage, a subject which already has been considered. It is declared that 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, claims of present perfected 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.

By Article IX every action or proceeding, legal or equitable, for the protection of any right under the Compact or the enforcement of any of the provisions of the Compact which the states have under their present legal system is explicitly reserved to the states. From this article it is evident that although commissioners may be appointed under Article VI of the Compact to settle any particular question arising in the administration of Colorado River questions, the states will still have the opportunity of resorting to their own legal machinery for the adjudication of disputes.

The manner of termination of the Compact is provided by Article X. By the terms of this article the Compact may be

time as they arise."—McKisick, Deputy Attorney General of California, Legal Adviser to the California Commissioner, *Letter of February 8, 1923*.

<sup>80</sup>The administrative machinery provided by the Compact will be considered in greater detail in the last chapter of this thesis in connection with suggestions for a proposed Colorado River Authority.

<sup>81</sup>"MR. HOOVER: The Indian question is always prominent in every question of the West, (and you always find some congressman who is endowed with looking after the Indian, who will bob up and say, 'What is going to happen to the poor Indian?' We thought we would settle it while we were at it.)"—Colorado River Commission, *Minutes of the Twentieth Meeting*, Bishop's Lodge, Santa Fe, p. 40, Sunday, 3:45 p. m., Nov. 19, 1922.

There is reason to believe that Mr. Hoover, when correcting the minutes, deleted the portion included in the parenthesis.

terminated at any time by the unanimous agreement of the signatory states. It is definitely stated that in the event of such termination all rights established under the Compact shall continue unimpaired.

Article XI provides that the Compact shall become binding and obligatory when it shall have been approved by the legislatures of each of the signatory states and by the Congress of the United States. The manner in which the notice of approval of the legislatures shall be given to all parties concerned is also specified. It is declared that the governor of each signatory state shall give notice of the approval of the legislature of that state to the governors of the other signatory states and to the President of the United States. The President is requested to give notice to the governors of the signatory states of the approval of the Congress of the United States.<sup>82</sup>

The original copy of the interstate agreement is to be deposited in the archives of the Department of State of the United States and a duly certified copy forwarded to the governor of each of the signatory states. This is provided by the witness clause of the Compact. The last sentence of the Compact states that the agreement was entered into at Santa Fe, New Mexico, the 24th day of November, A. D. 1922. Signatures of the Commissioners and of Mr. Hoover then follow. Immediately preceding Mr. Hoover's signature is the word "approved."

The purpose kept in mind during the writing of the present chapter has been that of presenting an exposition of the agreement signed by representatives of the seven states. The circumstances surrounding the drafting of the more important articles have been probed and the arguments for and against the various provisions carefully examined. Preliminary drafts suggested to the Commission as the basis of interstate agreement were also considered.

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<sup>82</sup>In Chapter VI, Political Issues, the suggestion that the Compact shall become binding and obligatory, when it shall have been approved by the legislatures of six of the signatory states, will be considered.

## CHAPTER III

### ENGINEERING BACKGROUND

The Colorado River Compact does not contain specific terms relating to a definite project. It does not include a reference of any kind to the All-American Canal. Nor does it mention the Boulder Canyon Dam, a dam at Topoc, or any other proposed structure. It will be our purpose in proceeding with the discussion of the engineering background of the Compact, to limit ourselves to the question of engineering problems which relate to the improvement of the main stream of the Colorado River.<sup>1</sup>

The four purposes for which the development of the Colorado River is contemplated have been mentioned heretofore—flood control, power development, irrigation, municipal water supply. It is evident that the same type of structure will not serve all of these purposes. For instance, a large and high dam remaining practically empty in all but flood seasons is required for the purpose of securing flood control.<sup>2</sup> On the other hand, in order to secure power development a dam which will provide a uniform flow of water must be built. On the one hand storage capacity is required to prevent floods devastating the lower regions of the river, and on the other a uniform flow of water is required to turn the turbines and develop power.

The various purposes for which the Colorado River is to be developed are related to the problem of silt. It is estimated that 200,000,000 tons of silt are carried past Yuma annually.<sup>3</sup> There are different views with respect to where the dam or dams should

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<sup>1</sup>Reference to the following Exhibits may be made for data concerning various projects for conveying the water from the stream to the place of use: Appendix II, Exhibit CC, *The All-American Canal*; Appendix II, Exhibit JJ, *High-Line Canals for American Lands*; Appendix II, Exhibit NN, *The James B. Girard Project*; Appendix II, Exhibit PP, *Diversion from the Colorado to the Mississippi Watershed*.

<sup>2</sup>In order that any dams built for the purposes of flood control shall be of maximum value it is essential that they be built as far down the stream as possible. Kelly, Colonel William, Chief Engineer, Federal Power Commission, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, p. 797, August, 1924.

Mr. Frank Weymouth, formerly of the Reclamation Service, has pointed out that the floods from the Gila River are always flashy in character and that if a flood from that source should break the levees it would subside so that repairs could be effected before the permanent course of the river would be established through the break.—Weymouth, Frank E., *Hearings*, H. R. 2903, Part IV, p. 713, March 20, 1924.

<sup>3</sup>Weymouth, Frank E., Chief Engineer, Bureau of Reclamation, *Hearings*, H. R. 2903, Part IV, p. 712, March 20, 1924.

be placed in order that the silt may be satisfactorily controlled.<sup>4</sup> If the stream is allowed to deposit silt within the storage capacity of the dam it will not be long before the dam will be useless for the purposes of flood control. Similarly, a heavy burden of silt will cause any irrigation works to be of less value than if the silt were satisfactorily eliminated. Moreover, it is very evident that unless this problem of silt control can be met the water supply will be of little use for municipal purposes.<sup>5</sup>

The distance to which electrical energy may be economically transmitted is one of the factors entering into the determination of the location of dams in the Colorado River. The problem of getting the power to the places where it is needed in the centers of population must be kept in mind. It so happens that the cities and the more densely populated areas of the Colorado River Basin and adjacent territory are located at some distance from the best power sites on the River. Mr. West of the Southern Sierras Power Company believes that it is practicable to distribute electrical energy over a territory within a radius of 700 miles. The voltage required to accomplish this, or the voltage which could be most efficiently used, would be that of 220,000. Mr. West calls attention to the fact that this voltage has been thoroughly proven on the Pacific coast.<sup>6</sup>

There are two points of view expressed concerning the question of whether or not there are a sufficient number of data at

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<sup>4</sup>"MR. DAVIS: . . . We found it was far cheaper to supply the Imperial Valley and the valleys in the Lower Colorado with the necessary storage by reservoirs in the Upper and Green River Regions where there are favorable reservoir sites, whereas if you had to put your reservoirs in the Lower Basin you would have the silt problem to deal with, and the engineers proposed and contended that we should not undertake any storage in the Lower Basin on account of the silt and the great expense involved in getting down to bed rock. Privately I expostulated to those gentlemen with the same reasons I have now, but the point stands out so clearly that viewed in the narrow selfish way as it looked a few years ago it would be very much easier for the Lower Basin to provide itself with storage above; that seemed the proper course. The difficulty was that such a storage, carried out and controlled in a way that would be necessary for use, looking only to the interests of the Lower Basin, would interfere with the Upper Basin not only for irrigation but also for power development; it also would greatly deplete the possibilities of power throughout the Canyon Region, and that, as well as the possibility of that interfering with irrigation development, led me to the conclusion that no matter what it costs, provided it was feasible, we should develop storage in the Lower Basin, and pursuing that line it occurred to me that we would have difficulties to overcome which I found were non-existent. In the first place it was obviously not feasible to build great storage reservoirs in the Lower Basin for the reason that they cannot take care of the silt proposition and carry irrigation from the proceeds of irrigated land."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., pp. 37-38, Thursday, 10 a. m., Jan. 26, 1922.

<sup>5</sup>See Appendix II, Exhibit JJ, *High-Line Canals for American Lands*.  
1. *Projects for Serving California Lands*, c. William Mulholland.

<sup>6</sup>*Hearings*, H. R. 2903, Part IV, p. 614, March 19, 1924.

hand to determine what is the best location for dams in the Colorado River. Colonel Kelly of the Federal Power Commission takes the point of view that there is not enough information available at the present time to determine the best location for dams on that stream. He believes that there is a sufficient amount of information available to outline the ultimate scheme of development, but not to determine the actual development that should be undertaken at the present time.<sup>7</sup>

Representatives of Arizona are particularly emphatic in their assertion that there are not sufficient data at hand for intelligent action. Governor Hunt in his message to the Seventh Legislature, January 12, 1925, stated that the immediate need of Arizona was additional data of the engineering possibilities.<sup>8</sup> Mr. G. E. P. Smith, Irrigation Engineer of the University of Arizona, College of Agriculture, takes a similar point of view.<sup>9</sup> In 1925 the legislature of Arizona appropriated \$50,000 for a two-year period, to be used in determining the facts upon which to base intelligent action. Most of this sum was to be spent in a survey of the Colorado River, contingent upon the appropriation of a like amount by the Federal Government.<sup>10</sup> The High-Line Canal

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<sup>7</sup>Hearings, H. R. 2903, Part VI, p. 1280, April 16, 1924; *Ibid.*, Part V, p. 833, March 25, 1924.

Extensive surveys have been made, and more are planned:

"MR. LARUE: With the completion of the work in the Grand Canyon last summer the United States Geological Survey has mapped 1,800 miles of Colorado River and its principal tributaries. Two dam sites have been surveyed in Cataract Canyon in Utah, six in Glen Canyon in Southern Utah and Northern Arizona, 21 sites in Marble and Grand Canyons in Arizona, and one flood-control dam site in Mohave Canyon near Topock, Arizona."—*Hearings*, H. R. 2903, Part V, p. 968, March 26, 1924.

"WASHINGTON, Feb. 14.—The Senate Committee on Commerce today included an amendment in the river and harbor bill authorizing the War Department through the Board of Engineers on Rivers and Harbors to make a preliminary survey and report on the navigability of the Colorado River and the effect of proposed flood regulation and power development on this phase of the river's possibilities.

"Unless some unforeseen obstacle arises the bill as finally agreed to will contain this provision. If this survey is made, the entire river and harbor machinery of the War Department will be used to make a comprehensive report on all the phases of the Colorado River at the next session of Congress. This report will go to the House Committee on Rivers and Harbors and probably will result in some definite and permanent policy for the Colorado River."—*Plans Survey of Colorado, Senate Committee Puts Amendment in Rivers and Harbors Bill, Four Proposals Up*, Los Angeles Times, Feb. 15, 1925.

<sup>8</sup>Reprinted in *Hearings*, S. 727, Part II, p. 311, Jan. 23, 1925.

<sup>9</sup>*A Discussion of Certain Colorado River Problems*, Bulletin No. 100, University of Arizona, College of Agriculture, Agricultural Experiment Station, February 10, 1923.

<sup>10</sup>*Air Survey of Colorado Promised*, Los Angeles Times, April 3, 1925.

*Federal-State Contract for Survey of Lands Adjacent to Colorado River Signed*, Arizona Republican, July 8, 1925.

Association, an Arizona body, is of the opinion that this state has been neglected in the research of the Colorado River.<sup>11</sup>

Among those who assert that there are a sufficient number of data at hand to warrant immediate action are Messrs. Weymouth<sup>12</sup> and A. P. Davis,<sup>13</sup> formerly of the Reclamation Service but at present retained as consulting engineers by the City of Los Angeles.<sup>14</sup> As might be expected, their position is reasserted by Mayor George E. Cryer of Los Angeles.<sup>15</sup>

In the remainder of this chapter the plans of leading engineers will be considered, particularly those of Mr. A. P. Davis, Mr. Frank Weymouth, Colonel William Kelly, Mr. E. C. LaRue, Hon. Hubert Work, Mr. G. E. P. Smith, General Goethals, and Mr Walter G. Clark.<sup>16</sup>

<sup>11</sup>Testimony of Mr. Hovland, *Hearings*, H. R. 2903, Part V, pp. 856-857, March 25, 1924.

<sup>12</sup>*Hearings*, H. R. 2903, Part IV, p. 743, March 20, 1924.

<sup>13</sup>*Ibid.*, Part VII, p. 1403, April 13, 1924.

<sup>14</sup>See Appendix II, Exhibit HH, *Activities of the Boulder Dam Association and Other Public Ownership Groups in Colorado River Development, Los Angeles Retains Mr. A. P. Davis as Consulting Engineer; Defeat Looms for River Bill*, Los Angeles Times, Dec. 23, 1923.

<sup>15</sup>Pamphlet, *Colorado River Development, Boulder Canyon Dam and the All-American Canal, Statements by Congressman Addison T. Smith of Idaho and Mayor George E. Cryer of Los Angeles*, Issued by the Boulder Dam Association, 1925.

<sup>16</sup>"MR. HOOVER: . . . There is a sad lack of understanding of even the most fundamental engineering facts in the relation of the upper basin to the lower basin. There is a general tendency even on both sides to obstruct the importance of realistic facts, the relative weight of the different engineering problems involved, and the destruction that may follow from failure to make a pact."—Colorado River Commission, *Cheyenne Hearing*, Senate Chamber, State Capitol Building, Cheyenne, pp. 58-59, April 2, 1922.

"MR. LARUE: I would say in order to safeguard the Government's interest that general scheme should be approved by the Interior Department, the War Department, and the Federal Power Commission. Spread it over enough departments and you would probably get an unprejudiced report."—*Hearings*, H. R. 2903, Part V, p. 989, April 2, 1924.

"To bring about harmonized engineering opinion within the circle of the several government bodies concerned with the Colorado, the Secretary of the Interior last year formed a board including representation from the Geological Survey, the War Department, the Federal Power Commission, and the Bureau of Reclamation. This board was to report on the needs of the river and recommend how they might be met, but it failed to agree in the main. The representatives of the Bureau of Reclamation reported in favor of a large single-storage project combining flood control, silt elimination, irrigation equalization, and power (the Weymouth report of 1924 constituted their report). Colonel Kelly, for the Power Commission, and Herman Stabler, for the Geological Survey, presented separate reports, Colonel Kelly condemning the Boulder Canyon reservoir and proposing a small reservoir at a new site, near Needles, for flood control but not for equalization of flow. One of the points of disagreement was whether the cost of a dam serving other uses than power should be paid for wholly from power income."—Schmitt, F. E., Assistant Editor, *Engineering News-Record*, *The Colorado River—A Brief Summary of Data*, 94 *Engineering News-Record*, No. 2, pp. 57, 62-63, Jan. 8, 1925.

Mr. A. P. Davis, who was for many years Director of the Bureau of Reclamation, Department of the Interior, suggests that a dam should be built at Boulder Canyon to a height sufficient to raise the level of the water to the dam site at Bridge Canyon. In the words of Mr. Davis, "this dam would impound about 28,500,000 acre-feet of water, control floods more perfectly than any smaller reservoir, and develop power more cheaply than any smaller dam, in sufficient quantity to repay its cost with interest.

"Next, the Parker site should be improved to serve as a diversion dam for irrigation and municipal supply. With complete regulation at Boulder Canyon it will be a good power site.

"A dam at Bull's Head will back the water to the base of Boulder Dam and, with the regulation of that dam, will constitute a good power site. This leaves three alternatives for the development of the power head above Boulder Canyon, between Bridge Canyon and the National Park Boundary, as follows:

"1. If on that future day it is decided that more storage is necessary, the Boulder Dam can be raised 120 feet, its gross capacity increased to 48,000,000 acre-feet, less the accumulated silt, and the water backed to Diamond Creek, where a dam can be built at Bridge Canyon to back water to the National Park.

"2. If it is then definitely decided that no more storage will ever be needed a dam can be built at Bridge Canyon to back water to the Park Boundary.

"3. If the decision is that additional storage may be needed some day, the dam at Diamond Creek can be built, and the space between this and Boulder Reservoir can be left open for still further consideration, that is, whether to build Boulder Dam higher, or to build a dam 128 ft. high at Bridge Canyon."<sup>17</sup>

Mr. F. E. Weymouth, formerly Chief Engineer of the Reclamation Service, has suggested a plan which calls for three large dams in the lower basin. These dams would be at Boulder Canyon, Bridge Canyon and Glen Canyon. Several smaller dams are included in the plans.<sup>18</sup>

The heights of the major dams under the Weymouth plan are as follows: Boulder or Black, 552 feet; Bridge, 566; Glen, 386.

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<sup>17</sup>*Proper Plan of Development, 50 Proceedings of the American Society of Civil Engineers, No. 9, pp. 1476-1477, Nov. 1924.*

<sup>18</sup>In 1924 Mr. Weymouth was of the opinion that a single large reservoir at Boulder Canyon would answer all purposes.

"MR. WEYMOUTH: . . . The final results of these studies demonstrate conclusively that for power development as for flood control and irrigation storage the most feasible development on the lower river under existing conditions is the construction of a single large reservoir at Boulder Canyon."—*Hearings, H. R. 2903, Part IV, p. 715, March 20, 1924.*

The aggregate storage capacity is 43,000,000 acre-feet. The annual supply for diversion, a very important matter to both Arizona and California, is 9,000,000 acre-feet. Under the Weymouth plan the total installed horsepower would be 6,780,000, while the total cost of the entire development, including power plants, would be \$515,665,000. This is a cost per horsepower of \$83.<sup>19</sup>

Mr. Weymouth is of the opinion that there are eight possible dam sites at which power may be developed below Grand Canyon. They are as follows: Parker, Mohave Valley, Bull's Head, Boulder Canyon, Devil's Slide, Spencer Canyon, Bridge Canyon, and Diamond Creek.<sup>20</sup>

There are three parts of the plan of development suggested by Colonel Kelly, Chief Engineer of the Federal Power Commission. In the first place he suggests that a power and storage dam be built at Boulder or Black Canyon with a crest from 310 to 360 feet above present low water. Such a dam, he asserts, will provide the Lower Basin with immediate and effective flood control and will meet its irrigation needs for at least fifteen years to come. 225,000 kilowatts or more of primary power will also be generated by this plan.

The second part of his scheme calls for the building of a power dam at Diamond Creek with a crest about 250 feet above low water, to develop 187,500 kilowatts of primary power. He suggests that this dam at Diamond Creek should probably be constructed as the second or third part of the scheme but that the loss due to carrying charges, if it were built at once, would not be great and that there would be no loss at all if the completion of the Black Canyon Dam is not accomplished until after 1930.

The third feature of Colonel Kelly's plan is a storage dam at Glen Canyon with a crest about 400 feet above low water. This dam would be built primarily for storage, giving about 8,000,000 acre-feet. The structure would give additional flood protection, additional flow for irrigation when needed, and would increase the primary power of the Black Canyon and the Diamond Creek Dams by 375,000 kilowatts.<sup>21</sup>

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<sup>19</sup>Hearings, S. Res. 320, Part VI, pp. 794-820, passim, Dec. 22, 1925.

<sup>20</sup>Hearings, H. R. 2903, Part IV, p. 715, March 20, 1924.

See, also, Hearings, S. 727, Part I, p. 92, Dec. 22, 1924, and 50 *Proceedings of the American Society of Civil Engineers*, No. 9, pp. 1484, 1489-1491, November, 1924.

<sup>21</sup>Kelly, Colonel William, *Best Scheme of Development of Colorado River Below the Junction with the Green*, Report to the Federal Power Commission—Mimeographed copy received when in Washington, February, 1925.

See, also, Hearings, H. R. 2903, Part VI, pp. 1240-1241, 1245, 1277-1278, April 15-16, 1924, and *The Colorado River Problem*, 50 *Proceedings of the American Society of Civil Engineers*, No. 6, pp. 795-836, August, 1924.

Mr. O. C. Merrill, Executive Secretary of the Federal Power Commission, testified that a dam over 300 feet high would cause a loss of water through evaporation which should be avoided. He estimated that a dam 386 feet high as proposed would cause a loss of water in this manner sufficient for irrigation of from 50,000 to 100,000 acres, and asserted such loss likewise would represent a reduction in potential generation of hydro-electric energy equivalent to 250,000 horsepower. A further reason urged by Mr. Merrill for keeping the height of the dam at Boulder Canyon comparatively low was that a higher dam would mean danger to other projects.<sup>22</sup>

Mr. LaRue of the Geological Survey proposes to build a dam at Bridge Canyon 825 feet high from bed rock which will cost approximately \$164,000,000. To afford flood protection he would build a dam either at Glen or Mohave Canyons.<sup>23</sup> He is particularly opposed to a high dam at Boulder Canyon, saying that it would be the least efficient of forty-seven sites by reason of the excessive evaporation which would take place if a high dam were built at Boulder Canyon. Mr. LaRue's scheme to build a dam at Mohave or Topoc involves the moving of the town of Needles for a distance of two miles to the south and also moving the Santa Fe Railroad tracks. This would lengthen the present trackage by four or five miles.<sup>24</sup>

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<sup>22</sup>*Hearings*, S. Res. 320, Part V, pp. 503-528, passim, Dec. 8, 1925; *Ibid.*, Part VI, pp. 890-897, passim, Dec. 22, 1925.

<sup>23</sup>"6. There is urgent need for flood control, and this problem should be solved as quickly as possible. For more than a year the speaker has recommended that a thorough investigation be made of the Mohave flood-control reservoir site. As a result of his preliminary studies, he has reached the following conclusions regarding this site: (a) It is the lowest known site on the river where adequate storage capacity can be obtained for flood control. (b) It would surely form a unit of a comprehensive plan for the development of the whole river. (c) It would probably cost less than any other storage site of equal capacity on the river. (d) It would not destroy other valuable dam sites. The Boulder Dam, if built as planned, would destroy certain dam sites in the Lower Grand Canyon, and prevent the full development of the water resources of this section of the river. (e) For the same storage capacity, a dam in Mohave Canyon would have about one tenth the volume of masonry of a dam in Boulder Canyon. (f) The Mohave Canyon site is accessible, being only 2 1-2 miles from the railroad. (g) Considerable quantities of sand and gravel, suitable for concrete, are available close at hand, and the granite in the abutment walls will provide excellent material for crushed rock. (h) The depth to bed-rock is probably not great; the center pier of the Atchison, Topeka and Santa Fe Railway Bridge, 2 1-2 miles above the dam site, is resting on bed-rock 70 feet below the water surface. (i) With the flood problem solved by a dam at Mohave Canyon, there will be ample time for studying the river and no necessity for proceeding except in conformity with its orderly economic development."—50 *Proceedings of the American Society of Civil Engineers*, No. 9, pp. 1469-1470, November, 1924.

See, also, *Hearings*, H. R. 2903, Part V, pp. 968, 975, March 26, 1924.

<sup>24</sup>*Hearings*, S. Res. 320, Part V, pp. 532-596, passim, Dec. 9, 1925.

For a chart giving a comparison of the Weymouth and LaRue plans, reference may be made to *Hearings*, S. Res. 320, Part VI, p. 796, Dec. 22, 1925.

Secretary of the Interior Hubert Work suggests that a high Boulder Canyon dam be built with funds procured by the sale of government bonds. The sum of \$135,000,000 would be secured in this manner and expended for the purpose of building the dam, a central power plant, and an All-American canal. According to Mr. Work's plan the financing of the transmission lines from the central plant would be taken care of by the purchasers of electrical energy.<sup>25</sup>

Mr. G. E. P. Smith, Irrigation Engineer of the College of Agriculture, University of Arizona, favors the construction of a dam at the Dewey Reservoir site on Grand River for the purpose of flood control. In order to supply power he would build the Diamond Creek dam immediately. This project, he says, has

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<sup>25</sup>67 Congressional Record, No. 25, pp. 1790-1792, Sixty-Ninth Congress, First Session, Jan. 15, 1926.

"... The general prospect for early action on the river problem has not been materially advanced by Mr. Work's contribution.

"Although there are many reasons for such a conclusion, the outstanding one is that Secretary Work does not accept the fundamental feature of the Swing-Johnson bill, which assumes that the conditional ratification of the six-State Colorado River Compact by the California Legislature constitutes a valid ratification.

"Secretary Work, on the contrary, makes as a basis to any appropriation of funds or work on the river, unconditional ratification of the pact by at least six States. In order in a sense to force such ratification, he provides that no State not a party to the compact shall receive any allocation of water or power made available by a dam in the river.

"This provision, according to Senators who have studied the Secretary's conclusions, applies to California and Arizona alike . . .

"Asked today for his opinion of the Work proposal, Representative Leatherwood of Utah said:

"The report of the Secretary of the Interior is, in my judgment, a strong and comprehensive document, and if his suggestions are followed it will make a radical change in the Swing-Johnson bill. As a citizen of one of the upper basin States, I am not concerned with the kind or character of development that may go forward in the lower basin, provided the upper basin States are absolutely protected as to their right to a full use of the water allocated to them under the terms of the Colorado River Compact.

"I note in the Secretary's report that he states that section 8 of the Swing-Johnson bill appears to afford ample protection and assurance to the upper basin States. I am not prepared fully to agree with this assumption, and I suggest that section 8 of the Swing-Johnson bill be rewritten so as to include further protective provisions. The Secretary suggests that a provision be inserted at the close of the Swing-Johnson bill providing that no work shall be begun and no moneys expended on the works or structures until at least six States shall ratify the Colorado River compact. This provision is not broad enough; it should provide that no rights for power or other purposes shall be initiated or no construction begun until the six-State compact has been fully ratified. Rights might be initiated before the ratification of the compact which would not be governed by the terms of that instrument.

"I am glad all parties concerned now concede that the upper basin States must be protected, but it is important that we do not rest upon our victory so far, but see to it that the protective measures are so drawn that there can never be any question in the future about their interpretation or meaning."—*Work Plan Criticised, States in Upper Basin Object*, Los Angeles Times, Jan. 14, 1926.

a long list of advantages. Among these advantages are the shallow depth to bed rock, the comparatively short distance between canyon walls, the granite formation of the walls, accessibility from the railroad, convenient space near at hand for construction operations, and the nearness to markets for power.<sup>26</sup>

Mr. Walter G. Clark, a construction engineer of New York City in the employ of the G. Henry Stetson interests, is the most vigorous advocate of a rock-filled dam.<sup>27</sup> General Goethals also favors this method of handling the problem.<sup>28</sup> The rock-filled type of structure, it is said, will withstand earthquake shock much better than a concrete dam. However, Mr. Barre of the Southern California Edison Company favors a concrete dam.<sup>29</sup> This is also true of Colonel Kelly of the Federal Power Commission, who states that a rock-filled dam would not be economical.<sup>30</sup>

The diversity of opinion among engineers with respect to the question of the proper location of dams and other structures leads one to the conclusion that a Colorado River Authority would be a valuable agency in promoting Colorado River development. The manner in which such an interstate administrative body might contribute to the solution of engineering difficulties will be considered in the concluding chapter of this study.

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<sup>26</sup>50 *Proceedings of the American Society of Civil Engineers*, No. 9, pp. 1492, 1495, 1498, November, 1924.

<sup>27</sup>See Appendix II, Exhibit EEE, *Arguments for a Rock-Filled Dam*.  
See Appendix IV, Exhibit G, *Studies of Rock-Filled Dam*.

<sup>28</sup>*Hearings*, H. R. 2903, Part IV, pp. 747, 754, March 20, 1924.

<sup>29</sup>"MR. BARRE: In my opinion, the fatal defect of any rock-filled dam on the Colorado River is that the quantities of material are so great that you could not possibly provide spillway facilities during construction which would enable you to keep the water from going over the top while you were building it."—*Hearings*, H. R. 2903, Part V, p. 933, March 26, 1924.

<sup>30</sup>*Hearings*, H. R. 2903, Part VI, p. 1249, April 15, 1924.

See, also, *Hearings before the Committee on Irrigation of Arid Lands, House of Representatives, Sixty-Seventh Congress, Second Session*, H. R. 11449, Part III, p. 172, June, 1922, for a tentative plan by Mr. LaRue.



## CHAPTER IV

### ECONOMIC BACKGROUND

A memorandum issued by the Interior Department suggests that the possibilities of the Colorado River as a factor in the economic life of the nation are comparable with those of the Panama Canal, the St. Lawrence, or the territory of Alaska.<sup>1</sup> Similarly, Mr. Merrill, Executive Secretary of the Federal Power Commission, suggests that the Colorado River is the one item probably of greatest economic importance in the Southwestern part of the United States.<sup>2</sup>

Whether or not this particular section of the United States shall be completely developed is a question which undoubtedly will be determined in about the same manner that similar questions for the development of new lands have been determined in the past history of the nation. We can expect to find representatives of the manufacturing area of the East opposing the development of the new lands in the West for the reason that those new lands will make it possible for laborers to leave their work in the East. On the other hand, those people in manufacturing areas whose markets will be increased by the development of new sections of the country will for that reason tend to be favorable to such development.

There are two points of view with respect to whether or not the Colorado River area should be developed by the improvement of the Colorado River. Among those who believe that this section of the United States should not delay in making use of its natural resources, we find Dr. W. H. Walker of the Board of Directors of the American Farm Bureau Federation. Dr. Walker takes the position that there is no surplus of food products and that the produce from the Colorado River region will find ready markets.<sup>3</sup> This point of view was shared by the late President Harding. It is evident from an uncompleted address which he intended to deliver at San Diego, that he believed that any overproduction which then existed, was but a temporary situation. President Harding pointed out that our population makes a marked increase each decade and that an expansion in our agri-

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<sup>1</sup>*Memorandum for the Press*, Department of the Interior, p. 4, March 17, 1924.

<sup>2</sup>*Hearings*, H. R. 2903, Part V, p. 1063, April 2, 1924.

See, also, statement by Colonel Kelly, Chief Engineer, Federal Power Commission, to the effect that the Colorado River constitutes the only big remaining source of power in the Southwestern section of this country.—*Hearings*, H. R. 2903, Part VI, p. 1229, April 15, 1924.

<sup>3</sup>*Hearings*, H. R. 2903, Part IV, p. 786, March 21, 1924.

culture is a vital necessity for us even within so short a time in the future as ten years.<sup>4</sup>

Among those who take the position that the Colorado River area ought not to be developed intensively is the late Secretary of Agriculture Wallace. "Speaking generally," he said, "I think this is no time to undertake any considerable reclamation of farm lands."<sup>5</sup> He qualified his statement, however, by saying that there are many sections where foodstuffs have to be shipped at very high costs for the benefit of the community and that in such cases it might be a wise thing to bring under cultivation land which is adapted for such use without too much expense. Mr. Means, a civil engineer, of San Francisco, declares that there are now between 100,000 and 150,000 acres of land in the Imperial Valley prepared for irrigation but now lying idle largely on account of economic conditions.<sup>6</sup>

In the present discussion the desirability of improving the Colorado River area will be assumed. There may indeed be different ideas in various parts of the United States as to whether or not the expenditure of funds for the development of this stream is justified. But no one who knows the West is of that opinion, and every person living within the area is definitely convinced that the river should be developed. The Colorado River problem existing at the present time is due to the belief that this remaining natural resource is worthy of intensive development.

In order to determine whether or not we should develop this river we must look more closely at the purposes for which development may be made. They may be stated as including flood control, irrigation, power, and municipal water supply.

If one were to attempt to rate these different purposes in accordance with a scheme indicating their importance, difficulties would at once be encountered.<sup>7</sup> Water in one section may be more valuable at one time for irrigation than for power development, but there may come a time in that area when water for power

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<sup>4</sup>Hearings, H. R. 2903, Part VIII, p. 1885, May 17, 1924.

<sup>5</sup>Hearings, H. R. 2903, Part V, p. 1043, March 29, 1924.

<sup>6</sup>Ibid., Part IV, p. 686, March 19, 1924.

The Los Angeles Chamber of Commerce in a letter to the Associated Chambers of Commerce of Imperial Valley, El Centro, California, states that it is the opinion of that body "that the farmers throughout the United States, whose products until recently have been selling at a fraction of the cost of production, are at present opposed to the development of new agricultural areas."—Hearings, H. R. 2903, Part VIII, p. 1886, May 17, 1924.

See, also, Appendix II, Exhibit EE, *Opposition Between Cities and Country Areas*.

<sup>7</sup>This was attempted in the Colorado River Compact. See Chapter II, *Analysis of Compact*. See, also, Appendix II, G<sup>1</sup>, *Hierarchy of Priorities*, and Appendix II, Exhibit F, *Power Development Should be Secondary to Other Uses*.

development may become more valuable than water for irrigation. The water of the river must be considered as used for the general purpose of production. It constitutes one of the factors in production, and whenever there is a scarcity it will be worth more and command a higher price than when there is an ample supply of water and one of the other factors in production is scarce.<sup>8</sup>

That the problem of Colorado River development is largely an economic problem is appreciated by the people of the Southwest. On June 16, 1925, delegates to the Southwest Economic Conference met at the Chamber of Commerce in Los Angeles for the purpose of organizing a permanent body to study the economic questions involved in plans for Colorado River improvement.<sup>9</sup>

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<sup>8</sup>"MR. MAY: . . . The problem in New Mexico is the reverse, for instance, of that in Colorado. In Colorado there is an immense flow of water with not sufficient irrigable land for its use. In New Mexico there are immense bodies of land far exceeding in extent the available water supply, although that is large."—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 169, April 1, 1922.

"Permanent settlement of the Colorado Basin will be largely dependent on irrigation. It is probable that in the immediate future power will have a greater value than irrigation, but as power can be obtained from other sources than the river, it should not be allowed to curtail the ultimate irrigation development."—Kelly, Colonel William, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, p. 796, August, 1924.

"MR. MAXWELL: . . . It is not a question whether agriculture or power takes precedence. The fundamental legal principle is: Which is the use of greatest human benefit? And it may be that power is that use."—*Hearings*, H. R. 2903, Part VI, p. 1314, April 17, 1924.

Professor Carver suggests that in determining the purposes for which the water should be used, the object to be kept in mind is that any scheme adopted should tend to promote the economic utilization of man.—Lecture of October 2, 1924.

<sup>9</sup>"The following are present at the conference, their home city being Los Angeles, unless otherwise specified:

"Casey Abbott, Phoenix; L. W. Alexander, Yuma; H. P. Anewale, A. G. Arnoll, David Aspland, Goldfield, Nev.

"James H. Batten, Claremont; Charles P. Bayer, E. M. Beattie, Wilmington; Will Beckley, Las Vegas, Nev.; P. L. Bell, Guaymas, Sonora, Mexico; Amos A. Betts, Phoenix; Charles M. Boggess, Inglewood; James P. Boyle, Douglas, Ariz., C. T. Boyd, H. R. Brashear, W. L. Brent, Earle W. Brewster, Phoenix; William W. Butler, Cedar City, Utah.

"G. H. Cecil, Lucius K. Chase, J. Hunter Clark, John E. Conzelman, South Pasadena; Charles A. Cooke, Cecil W. Creel, Reno; F. P. Cruice.

"J. Dabney Day, Sylvia DeKuhn, Prescott, Ariz.; D. L. DeVane, Yuma; Barry Dibble, Redlands, George A. Duncan, Nelson, Nev.

"J. W. Edwards, Yuma; M. Elsasser, S. C. Evans, Riverside.

"E. J. Fenchurch, Tucson.

"G. S. Harper, Yuma; Leigh Hunt, Las Vegas.

"W. F. Jensen, Salt Lake City; F. Louis Johnson, Wilmington; Rowland Johnston, Phoenix; C. Colcock Jones.

"Kenneth Kennedy, R. P. Kyle, Phoenix.

"William Lacy.

Perhaps the ideal way of approaching the economic questions involved in the improvement of this stream would be to regard the Colorado River area from a national point of view. It could be assumed that the people of the United States have various fields for cultivation and that the question of whether or not they will cultivate a certain field is to be determined on the ground of the production which may be expected from such cultivation. If the United States thus regarded the Colorado River area from the point of view of a careful husbandman, we would have the ideal basis for the improvement of the stream.

The people of the United States, however, cannot be expected to regard the problem from the point of view of a prudent husbandman. Perhaps the most that can reasonably be anticipated is that certain officials charged with the responsibility of developing a policy for the improvement of this area will be aware of the issues essential to a just conclusion. The majority of the people outside of the area will think very little about the nature of the problem and those people who live within the area will allow themselves to reach conclusions determined by what they believe are their own interests.<sup>10</sup> They will seek to know how a certain method of development will affect the value of their particular tracts of land. They will take a short view. Their chief concern will be that their own land shall be served with water and power

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"Guy E. Marion, J. Ogden Marsh, Dr. Roy W. Martin, Las Vegas; H. S. McCluskey, Phoenix; T. W. McDevitt, Felix J. McGinnis, W. H. McGinnis, Jr. San Francisco; William L. McKee, B. J. McKinney, Casa Grande, Ariz., M. H. Merrill, W. R. Mitchell, Burdett Moody, Watt L. Moreland, Burbank; Frank C. Mortimer, D. W. Murphy.

"Preston Nibley, Salt Lake City.

"J. M. Paige, Pomona; T. A. Panter, C. A. Peterson, D. W. Pontius, M. B. Pratt, Sacramento.

"J. H. Ramboz, F. A. Reid, Phoenix; William DeRopp, Glendale.

"R. D. Sangster, Leslie R. Saunders, J. T. Saunders, E. F. Scattergood, J. A. Smiley, Orange; C. R. Smurr, Charles F. Solomon, Tucson; Charles S. Sprague, Goldfield, Nev.; Charles P. Squires, Las Vegas; A. M. Stanley, Santa Ana; S. W. Stanley, Tustin.

"Robert E. Tally, Jerome, Ariz.; Everett P. Teasdale, Long Beach; E. C. Thomas, Augustus Tilden, J. T. Thittlesey, Berkeley.

"Cleveland Van Dyke, Miami, Ariz.; L. D. Van Dyke, Miami; Loren Vaughn, Phoenix.

"H. B. Watkins, Phoenix."—*Economists Ask Conference on Colorado River Use, Conference Urges Governors Seek Agreement on Distribution*, Los Angeles Times, June 17, 1925.

<sup>10</sup>"This compact deals with one of those questions . . . which Prof. Felix Frankfurter and James M. Landis of the Harvard Law School said a year ago must be 'an ever present concern in the daily lives of the people in one region' in this big country, 'while hardly touching the imagination, let alone the lives of millions of people in other parts of the country'."—*Another Inter-State Compact*, Editorial, Boston Herald, Feb. 25, 1926. The compact to which reference is made is that known as the South Platte River Compact negotiated between Colorado and Nebraska in 1923.

from the river regardless of whether or not there are other lands which might be more economically served. In the concluding chapter of this thesis a plan will be suggested under which it will be possible for those people living in the Colorado River area to take a long view of the question so far as that is humanly possible.<sup>11</sup>

When we survey the conditions existing in the Colorado River area, we are struck by the fact that in certain quarters it is asserted that the greater portion of land to be served from this stream is land which lies in the Lower Basin states.<sup>12</sup> On the other hand, the larger precipitation falls upon the states comprising the Upper Basin. This fact, coupled with the fact that at least seven states are directly interested in the development of the stream, gives opportunity for opposing arguments concerning the principles which ought to be recognized in determining the manner of apportioning the water. It is difficult, therefore, to regard the Colorado River Basin as the single field of a prudent nation which attempts to apply wise policies in determining whether or not that field shall be intensively tilled. We must face the facts and realize that men whose property and homes are centered within the borders of a particular state are attempting to serve their own interests.

By reason of these conditions, governmental agencies are faced with the responsibility and opportunity of providing the machinery which may be necessary to guarantee that a chosen group of men shall be charged with the duty of administering the entire area from the point of view of a prudent husbandman. But it must be realized that such machinery will be worthless unless a cooperative spirit is fostered at the same time that provision is made for the mechanics of cooperation.<sup>13</sup>

In order that the economic development of this section of the nation may be assured, it is perhaps true that a change should be made in the existing system of creating rights to water. The system which has been in effect, since the West was largely a land of vast acreage and relatively few people, has been that of prior appropriation.<sup>14</sup> Under this system the man who first came

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<sup>11</sup>See Chapter VII, *Conclusion. C. The Relation of a Proposed Colorado River Authority to Economic Problems.*

<sup>12</sup>This statement correctly describes the existing condition only if it be found that the Arizona high-line project is feasible.

See Appendix II, Exhibit HHH, *The Extent of Irrigable Areas in the Colorado River Basin.*

<sup>13</sup>See Chapter VII, *Conclusion, E. The Relation of a Proposed Colorado River Authority to Political Issues.*

<sup>14</sup>For a discussion of legal questions involved in Colorado River development suggested in this and following paragraphs, see Chapter V, *Constitutional Questions.*

to a mountain stream and diverted a portion of the stream through his sluices for the purpose of washing the precious metals from the rock and gravel, thereby secured a right to the continued use of that stream for mining purposes. Anyone locating upon a claim below or above the prior appropriator would hold subject to the prior right. This system continued when agriculture came to be of importance in this section of the country. The prior appropriator has the better right. Subsequent appropriators are subordinate in their claims.

In addition to the prior appropriation doctrine, the doctrine of riparian ownership was developed to some extent, but not to the extent to which it had been embodied in the law of the humid states east of the Rocky Mountains. California is the only one of the seven states interested in the Compact which recognizes the doctrine of riparian ownership. And even in that state, this doctrine of riparian ownership shares the field with the doctrine of prior appropriation.<sup>15</sup>

It is submitted that the doctrine of prior appropriation was sufficient to meet the needs of early appropriators when water was abundant and there were but few people to use the available supply. Individual rights could then be readily secured by the application of the prior appropriation doctrine because there were ample resources to meet the needs of those who came later than the first appropriator. The interests of the national government in getting the lands settled were also served by this scheme of prior appropriation.

But the situation at the present time is not the same. A sufficiency of water and unused land are no longer available for the use of a limited population. Conditions have been reversed. The interests which must now be served include the national interest in the conservation of natural resources, and the interests of individuals in security in the exercise of their rights. The national interest in the conservation of natural resources is perhaps the more important of the two.

This being the case it is not surprising that an attempt has been made to change the prior appropriation system. Indeed, one of the best illustrations of that attempt is the whole series of negotiations leading to the Colorado River Compact. The fact that such an agreement was considered desirable is in itself an indication of the inadequacy of the prior appropriation system of determining water rights.<sup>16</sup>

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<sup>15</sup>See Chapter V, *Constitutional Questions, B. The Respective Spheres of Authority of the State and Federal Governments in the Control of the Use of Water in the Colorado River, 1. The Wyoming v. Colorado Decision.*

<sup>16</sup>The same may be said of the South Platte River Compact between Colo-

There are several theories applicable to the problem of determining relative rights to the water of an interstate stream.<sup>17</sup> One means of dealing with the question would be to provide for the distribution of the water to the several states according to the area of the respective states without regard to the productivity of such areas.<sup>18</sup> Another means of determining the rights to water in an interstate stream would be to base the division upon the amount of water contributed to the stream by each of the interested states.<sup>19</sup> According to this scheme the state of heavy precipitation would secure a large proportion of water. A third method of determining the manner of distribution would be to allow the voters of the entire basin to exercise their suffrage right and provide for the division of the water upon the basis of the desire of the largest number of people. Political power would determine the question.<sup>20</sup> A fourth method of determining the division of water would be to give preference to that area which can make the most economical use of the water. This might be designated as equitable division.<sup>21</sup> Still a fifth method of apportioning the water between several states interested in a partic-

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rado and Nebraska, cited in a preceding paragraph of this chapter.—*Another Inter-State Compact*, Editorial, Boston Herald, Feb. 25, 1926.

<sup>17</sup>Prof. T. N. Carver, *Lecture of April 8, 1925*.

Mr. Bannister has discussed this subject as follows:

"The principles conceivably applicable to water uses on interstate streams are as follows:

"1. That states such as California or Arizona through which the entire volume of the stream flows by nature should have a right to use of all of the water so flowing to the exclusion of the rights of upper states.

"2. That upper states should have the right to use of all of the water which they contribute to the total volume of the stream.

"3. That the water should be divided among the states in accordance with priorities regardless of state lines.

"4. That the water should be divided among the states in accordance with the principle of 'equitable division'.

"The first and second principles referred to are based upon the supposed advantages given by Nature but are in evident conflict and should be disregarded. The third principle—that of priority regardless of states—is dependent largely upon the accident of development influenced by transportation facilities, colonization schemes, etc. and is not founded on any desire to see the different states treated in accordance with any principle of economic fairness or as being among a sisterhood of states. The fourth principle, that of 'equitable division' is the only one which considers membership in a sisterhood of states or which recognizes the economic claims of each. This is the principle declared by *Kansas vs. Colorado*."—*Possible Principles Applicable to Interstate Streams*, Colorado River Commission, Denver Hearing, State Senate Chamber, Denver, pp. 136-137, March 31, 1922.

<sup>18</sup>See Appendix II, Exhibit HHH, *The Extent of Irrigable Areas in the Colorado River Basin*.

<sup>19</sup>See Appendix II, Exhibit JJJ, *Contributions to the Flow of the Colorado River*.

<sup>20</sup>See Chapter VI, *Political Issues*.

<sup>21</sup>See Appendix II, Exhibit LLL, *The Economic Basis of an Equitable Division to Promote Maximum Productivity*.

ular stream would be to allow those first making use of the water to acquire the predominate right. The familiar words, "first come, first served" are descriptive of this situation. This is the method which is in effect in the Western states at the present time. It might be designated as the "scramble" method.<sup>22</sup>

Each of these theories or principles of division has been urged by people of different portions of the Colorado River area; each of the several groups within the Basin advocates that principle of division the application of which would give its constituency the greatest use of the stream.

On numerous occasions representatives from Arizona have stated that because Arizona has more land within the Colorado River Basin than any other state, the larger portion of the water should be used in Arizona. Data are produced showing that the number of acres of Arizona land far exceeds the number of acres of any other state within the Colorado Basin. To this the representatives of Colorado reply that although their land is not as extensive as that of Arizona, nevertheless Colorado should have the larger portion of the water because the precipitation is greatest in the state of Colorado. It is shown that very little water flows into the main stream of the Colorado from Arizona's tributaries and that if it were not for the water contributed by the snows and rains falling in Colorado the stream would be little more than an insignificant rivulet. Moreover, Colorado's representatives and others of the Upper Basin states assert that if the water is used in the Upper Basin states, the return flow would make it possible for Arizona to use the water, without diminution by reason of its use by the upper states.<sup>23</sup>

Centers of population such as Denver and Los Angeles put forth the argument that they are ready to finance projects which will make it possible for them to use the water. Representatives of these cities take the point of view that it is immaterial that they are outside of the Colorado River Basin. Having need of the water and being able to finance the necessary aqueducts and dams, they seek to make use of the water without delay.<sup>24</sup>

The principle of division of the water according to the most economical use to which it can be placed is urged by representatives of both the Upper Basin and the Lower Basin. In the record of the 1922 hearings of the Colorado River Commission, a large

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<sup>22</sup>See Chapter V, *Constitutional Questions, B. The Respective Spheres of Authority of the State and Federal Governments in the Control of the Use of Water in the Colorado River, 1. The Wyoming v. Colorado Decision.*

<sup>23</sup>See Appendix II, Exhibit ZZ, *The Question of Return Flow.*

<sup>24</sup>See Appendix II, Exhibit G, *The Urgency of Colorado River Development, 7. Need of Domestic Water Supply.*

number of data are included for the purpose of showing the relative productivity of the Upper Basin and the Lower Basin states. For example, it was pointed out that although citrus fruits are raised in Arizona, the value of such crops as potatoes produced in the states of the Upper Basin was greater than that of the crops of so-called luxuries—oranges and other fruits—grown in the states of the Lower Basin.<sup>25</sup>

In the concluding chapter of this thesis suggestions will be offered for the establishment of a Colorado River Authority. The manner in which this Colorado River Authority will aid in the solution of economic problems will then be pointed out in detail. It may be mentioned here, however, that the first purpose of such an interstate agency should be to convince the people of the Colorado River area that it is not of paramount importance that their particular area be given preference. A broader point of view must be taken by the people whose interests center in the Colorado region. The difficulties of fostering this attitude of mind are fully appreciated, and perhaps little headway will be made. However, until there is a Colorado River Authority speaking for the entire region such difficulties may prove to be insuperable.<sup>26</sup>

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<sup>25</sup>See Appendix II, Exhibit LLL, *The Economic Basis of an Equitable Division to Promote Maximum Productivity*.

<sup>26</sup>See Chapter VII, *Conclusion, C. The Relation of a Proposed Colorado River Authority to Economic Problems*.



## CHAPTER V

### CONSTITUTIONAL QUESTIONS

A discussion of the constitutional issues involved in the application of the Colorado River Compact is an essential part of any study of the proposed interstate treaty. Just as the engineering background is the physical basis for the development of that stream, so the constitutional background supplies the legal basis of its improvement.

The opening paragraphs of this chapter contain material of a general nature pertaining to interstate compacts. This is followed by a consideration of the respective spheres of authority of the state and federal governments in the control of the use of water in the Colorado River. Then eight grounds of federal activity and two of state activity are examined. The final portion of the chapter contains material relating to the question of the effect of the Compact upon the spheres of authority of the federal and state governments in Colorado River development, its effect upon the system of cooperation between the federal and state governments, its effect upon property rights in appropriated and unappropriated water, and its effect upon preferred uses of water in the Colorado River area.

It is only within recent years that interstate compacts have been advocated. At the Chicago meeting of the National Conference of Commissioners on Uniform State Laws, 1916, a resolution was adopted providing that "a special committee be appointed to consider the question of either preparing an enabling bill or bills to be presented to the Congress of the United States which shall permit a more general use of agreements between the several States of the United States, by the consent of Congress under Article 1, Section 10, of the Constitution of the United States, or of uniform state legislation to be proposed, which may be based upon or relate to agreements or compacts between the states with or without the consent of Congress, in order to render more effective some matters of uniform state legislation, and for such other purposes as, in the opinion of the Conference, may be deemed advisable."<sup>1</sup> Mr. George D. Ayers of Spokane, Washington, became chairman of the committee appointed in accordance with this resolution and a report was prepared for

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<sup>1</sup>Ayers, George D. *Report of the Committee on Compacts and Agreements between the States to be presented to the National Conference of Commissioners on Uniform State Laws, Saratoga Springs, New York, August 29-31, 1917.* The Address of Mr. Ayers, who wrote for the Committee, is Ziegler Building, Spokane, Washington. The report covers nineteen typewritten pages.

the 1917 National Conference of Commissioners on Uniform State Laws.

The report called attention to the fact that in Article I, Section 10, of the Constitution of the United States, among other statements there occurs the following language: "No state shall enter into any treaty, alliance or confederation . . . No State shall, without the consent of Congress . . . enter into any agreement or compact with another State, or with a foreign power, . . ." It was also pointed out that the direct and necessary implication of these clauses is that any state may make the compacts or agreements referred to in the clause by consent of Congress provided that it is not a treaty or does not create a new confederation or alliance.<sup>2</sup> Then a list of twelve possible agreements or compacts was presented for the purpose of illustrating the possible field of operation "of a hitherto almost unused provision of the Constitution of the United States."<sup>3</sup>

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<sup>2</sup>"The direct and necessary implication of this last quoted clause is that any state may make the compacts or agreements referred to in the clause by consent of Congress. This conclusion also follows from the facts: (1) that the several states as sovereigns, apart from constitutional prohibition, would have had power to make agreements or compacts with each other, and (2) that the effect of the constitutional provision was merely a restriction of such powers within the limits expressed or implied by the terms of the restriction, namely, that the consent of Congress shall be required to make such agreements or compacts valid.

"Also Article X of the Amendments to the Constitution of the United States makes it clear that the power in the states to make agreements or compacts, not having been delegated to the United States by the Constitution nor prohibited by it to the states, is reserved to the states, with the single restriction that the consent of Congress is necessary for the validation thereof.

"It seems clear, therefore, that the states may under the Constitution of the United States make any kind of an agreement or compact open to sovereign states, provided:

1. That it be done by consent of Congress, and
2. That it is not a treaty or does not create a new confederation or alliance."

*Report*, pp. 1, 2.

<sup>3</sup>In addition to the compacts and agreements suggested in the report, Mr. Ayers in a letter of May 3, 1923, writes that since the report was made, the matter of Blue Sky legislation had come rather forcibly to his attention and that it seemed to him that such legislation is distinctively something that ought to be the subject of agreements between the states.

A list of interstate compacts and agreements now in effect is included in an appendix to the article on *The Compact Clause of the Constitution—A Study in Interstate Adjustments*, by Felix Frankfurter and James M. Landis, 34 *Yale Law Journal* 685, May, 1925. Charles Warren, Assistant Attorney General of the United States from 1914 to 1918 and author of *The Supreme Court in United States History* (Boston, 1922), also includes a list of interstate compacts and agreements in Appendix E of his book, *The Supreme Court and Sovereign States* (Princeton University Press, 1924).

Mr. Edward C. Wynne, Harvard University, has prepared a report (unpublished at the present writing) on *Inter-State Compacts or Agreements*, bearing date of May 17, 1925. Mr. Wynne cites three instances of "compacts consented to by Congress not included in Mr. Warren's list." They are: Joint Resolution of March 4, 1921, giving the consent of the Congress of the United States to the States of North Dakota, South Dakota, Minnesota, Wisconsin, Iowa, Nebraska

The question of the difference between permitted agreements and compacts on the one hand, and prohibited treaties, alliances and confederations on the other, and the further question of whether or not there is any distinction of practical importance, under the Constitution of the United States, between agreements and compacts, was also considered by the committee. Their conclusion was that, "whatever the distinction between the meaning of these two words, 'agreement' and 'compact', it is not sufficiently important to affect the questions under discussion. The word 'agreement' seems to be the more general term. The word 'compact' seems to refer to more formal transactions than necessarily are connoted by the word 'agreement'. The Committee is content to leave the definitions as stated by the Supreme Court of the United States in the case of *Virginia v. Tennessee* (148 U. S. 503; 13 S. Ct. 727; 37 L. Ed. 537) in which that court said:

"Compacts or agreements—and we do not perceive any difference in the meaning, except that the word "compact" is generally used with reference to more formal and serious engagements than is usually implied in the word "agreement"—cover all stipulations affecting the conduct of claims of the parties.'

"This language is, of itself, very broad and, if taken as true in its length and breadth, would permit the states to make by consent of Congress any kind of agreement not elsewhere forbidden expressly or by direct implication by the Constitution itself. For instance, no states can make any agreement, even by consent of Congress, which shall grant letters of marque and reprisal, coin money, emit bills of credit, make anything but gold or silver a tender in payment of debts, pass any bill of attainder, ex post facto law, or law impairing the obligation of contracts, or grant any title of nobility (U. S. Const., Art. I, Sec. 10) or attempt by

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or any two or more of said States to agree upon the jurisdiction to be exercised by said States over boundary waters between two or more States; Joint Resolution of June 30, 1921, ratifying the establishment of the boundary line between the States of Pennsylvania and Delaware as established and confirmed, fixed and determined according to acts of the General Assembly of the State of Pennsylvania and the General Assembly of the State of Delaware. This report also contains a list of interstate compacts not consented to by Congress. As enumerated by Mr. Wynne, they are: *Virginia v. Tennessee*, 148 U. S., 503; *Williams v. Bruff*, 96 U. S., 176; *St. Louis & San Francisco Railway Co. v. James*, 161 U. S., 545; *Fisher v. State*, 1 So., 882; *Belding v. Hebard*, 103 Fed., 532, (accord, *Stevenson v. Fain*, 116 Fed., 147, *North Carolina v. Tennessee*, 235 U. S., 1; *Mackay v. New York, etc. R. R. Co.*, 72 Atl., 583; *Union Branch R. R. Co. v. East Tennessee, etc. Co.*, 14 Ga., 328; *Russell et al. v. American Association*, 201 S. W., 151; *Blaine v. Murphy*, 265 Fed., 324; *Thiedemann v. State Board of Dental Examiners*, 183 N. W., 228; *Groover v. Coffee*, 19 Fla., 61; *Dover v. Portsmouth Bridge*, 17 N. H., 200.)

agreement or compact to do various other things which clearly the Constitution forbids."<sup>4</sup>

It was suggested by the committee which prepared the report on compacts and agreements that any action taken under the compact clause of the Constitution might properly be designated as the exercise of power by the "indirect national arm" of the national government, as distinct from the exercise of power by the "direct national arm" of the national government. This follows, it was argued, from the nature of the governmental organization effected by the adoption of the Constitution. "What the adoption actually accomplished," the report reads, "was the organization of the whole 'people of the United States', both as a nation of the whole people, on the one hand, and as a nation made by the union of the several states on the other; not two nations, but one, a legal and psychological entity, manifesting the national consciousness of one people, a compound unit existing legally under two forms indissolubly connected under the same Constitution, one form being the direct union of the people, as indicated by the preamble, and the other being their indirect union through the still existing bond uniting the several states, a bond which, on the one hand, unites the states under the Constitution and on the other (because it is a bond and not a merger) preserves the states as distinct political units." The assertion is made that there is nothing to prevent this "indirect national arm" from exercising executive, legislative and judicial functions as well as the "direct national arm" of the national government, provided that it be done by consent of Congress, and does not conflict with other provisions of the Constitution.<sup>5</sup>

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<sup>4</sup>Ayers, George D. *Report of the Committee on Compacts and Agreements between the states to be presented to the National Conference of Commissioners on Uniform State Laws*. Saratoga Springs, New York, August 29-31, 1917.

<sup>5</sup>"Let us repeat, that it is error to deny that there is a bond of union of the states acting as the nation. It equally is error to deny that 'we, the People of the United States' are organized into the nation. It likewise is error to assert that the two principles, one of a nation composed of the people of the United States, and the other of a nation composed of a union of the several states, mutually antagonize each other, and that whichever increases its efficiency in the affairs of the nation must do so at the expense of the other.

"In fact, and perhaps naturally enough heretofore, we have thought of the federal government as made up of the executive, legislative and judicial departments of the United States, set forth and organized under the Constitution, and we have not thought that anything more was possible under that same instrument.

"If any action or policy is needed for the welfare of the whole people, and it is not apparent that the federal government can have jurisdiction under the Constitution, and constitutional amendment is not for some reasons practicable, heretofore we either have winked at a strained interpretation of some Constitutional provision, or else have relegated the matter to the inefficient action of the

Since 1916, when the resolution which led to the report which we have been considering, was adopted by the National Conference of Commissioners on Uniform State Laws at their Chicago meeting, Warren's book dealing with interstate compacts and agreements has appeared under the title, *The Supreme Court and*

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several states (acting perhaps in partial concert, but not by express agreement) or to the enterprise or benevolence of private individuals.

"As a matter of fact, we have neglected altogether the use of another federal arm for the accomplishment of national purposes. For not only can two or more states make agreements or compacts by consent of Congress, but all of the states can agree upon and carry out, by the consent of the same body, projects and policies that are national in scope, but now within the limited jurisdiction vested in Congress, giving to it the power of consent or refusal in the case of state agreements or compacts proposed.

"The heretofore only-used executive, legislative and judicial arms of the national government, taken together, are called 'the federal government'. The committee, however, suggests that the word 'federal' from the Latin 'foedus' meaning a league, treaty, covenant, agreement, compact (see Riddle's Latin-English Lexicon) in its root meaning suggests not so much the nation composed of the people of the United States as the nation composed of a league or union of states, and that it would have been better if the heretofore only-used executive, legislative and judicial departments of the government of the United States never had been called 'the federal' but only the 'national' government, and if the word 'federal' had been left to be applied to the functions, powers and affairs of the nation to be conducted (as is suggested by the report) only through the heretofore never-used capacities, now lying dormant, but to be called into service by all the states, acting by agreement or compact as a truly federated body with consent of Congress. In that case we very properly could have referred to the national government as having two arms, one the 'National arm' exercising directly its at-present-used executive, legislative and judicial functions. At the same time we could have called the other arm of the nation (heretofore never used) exercised indirectly through agreement or compact of all the states by consent of Congress, the 'federal arm' of the nation.

"This latter arm, if and when exercised, would be national in scope and in fact.

- (1) Because exercised over affairs which concerned the whole people, and
- (2) Because exercised only by assent of the nation acting by consent of Congress,

but it would be 'federal' in appearance (using the word 'federal' not as now used by us, but according to the original and root meaning) because exercised through the federated states, acting by consent of Congress; and hence the phrase 'federal arm of the government' could very properly be applied to it.

"So far as our government, however, is concerned, the word 'federal' is used as meaning the same as the word 'national', and to attempt at this late day to revert to a meaning more consonant with its root derivation would invite confusion of thought.

"Hence the committee suggests the use of the phrase 'direct national arm' and that of 'indirect national arm' of the national government. Using these phrases, as suggested, the words 'direct national arm' will connote the executive, legislative and judicial departments of the national government as at present exercised; and the words 'indirect national arm' will connote national functions to be exercised indirectly through all the states acting by means of agreement or compact, with consent of Congress. It should be noted here that logically there is nothing to prevent this 'indirect national arm,' as well as the 'direct national arm' from exercising executive, legislative and judicial functions, provided that it be done by consent of Congress, and does not conflict with other provisions of the constitution."—Ayers, George B. *Report of the Committee on Compacts and Agreements.*

Sovereign States.<sup>6</sup> He comments upon the increased number of interstate compacts entered into with the consent of Congress. "It is an interesting fact," he says, "to note that the increase in the number of suits brought by States has been attended by an equally great increase in the number of such compacts entered into between States. Thus, prior to 1880, there were eleven suits and eight compacts; since 1880, there have been twenty-eight suits and twenty-four compacts."<sup>7</sup>

The nature of some of these interstate agreements may be indicated more concisely. There have been at least seven boundary conventions<sup>8</sup>, one compact relating to the protection of fish in boundary waters<sup>9</sup>, one relating to the jurisdiction of adjoining states in cases of original offenses arising out of the violation of the laws of either of them upon boundary waters<sup>10</sup>, one concerning the construction and operation of tunnels<sup>11</sup>, two concerning the development of the port of New York<sup>12</sup>, and one dealing with the erection of waterworks and their maintenance and operation.<sup>13</sup>

The rights of states to use of the water of interstate streams seems to be a favorite subject for determination under procedure based upon compacts between the states concerned.<sup>14</sup> Colorado has appointed an Interstate River Compact commissioner<sup>15</sup>, and

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<sup>6</sup>Warren, Charles *The Supreme Court and Sovereign States* (Princeton University Press, 1924).

<sup>7</sup>Op. cit., p. 69.

<sup>8</sup>Kentucky and Tennessee, May 12, 1820, 3 Stat. 609; New York and New Jersey, June 28, 1834, 4 Stat. 708; Virginia and Maryland, March 3, 1879, 20 Stat. 481; New York and Vermont, Apr. 7, 1880, 21 Stat. 72; New York and Connecticut, Feb. 26, 1881, 21 Stat. 351; Connecticut and Rhode Island, Oct. 12, 1888, 25 Stat. 553; New York and Pennsylvania, Aug. 19, 1890, 26 Stat. 329.

<sup>9</sup>Oregon and Washington, Apr. 8, 1918, 40 Stat. 515.

<sup>10</sup>North Dakota, South Dakota, Minnesota, Wisconsin, Iowa and Nebraska, March 4, 1921, 41 Stat. 1447.

<sup>11</sup>New York and New Jersey, July 11, 1919, 41 Stat. 158.

<sup>12</sup>New York and New Jersey, Aug. 23, 1921, 42 Stat. 174; July 1, 1922, 42 Stat. 822.

<sup>13</sup>Kansas and Missouri, Sept. 22, 1922, 42 Stat. 1058.

<sup>14</sup>Mention should be made of the fact that the Western States Reclamation Association at its annual meeting in November, 1923, declared in favor of interstate rights in interstate streams being settled by compact. The officers and executive committee members of this organization are from the states of Idaho, Utah, Oregon, Texas, New Mexico, Washington, Arizona, Colorado, California and Nebraska. Committee on Irrigation and Reclamation, House of Representatives, Sixty-Eighth Congress, First Session. *Hearings on House Resolution 2903 by Mr. Swing, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin*, No. 7, pp. 1558, 1559, May 7, 1924.

<sup>15</sup>Mr. Delph E. Carpenter of Denver is the representative of Colorado in these matters. He was the Colorado member of the Commission which drafted the Colorado River Compact in 1922.

although many of the states have not named any person to devote his entire time to the duties of an office thus designated, they are performed by some other official of the state. Quite often the State Engineer acts in this capacity. The text of the Compact as to the water resources of the Delaware River between the Commonwealth of Pennsylvania, the State of New Jersey, and the State of New York, indicates that commissioners were appointed by those states for the special purpose of negotiating that particular compact.<sup>16</sup> In the compact between the State of Colorado and the State of New Mexico, concerning the La Plata River, it is interesting to note that Mr. Delph E. Carpenter for the State of Colorado and Mr. Stephen B. Davis, Jr., for the State of New Mexico, negotiated the agreement. The date of signature was November 27, 1922.<sup>17</sup> These are the men who represented their respective states in the Colorado River Compact negotiations. In the Columbia River area, action is contemplated for the development of that stream. Here, again, an interstate compact is anticipated.<sup>18</sup>

The compact relative to the waters of the Colorado was drawn up and signed by authorized representatives of seven states. Those states are Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. In addition to these state representatives, Herbert Hoover signed for the federal government. The conferences in which the provisions of the compact were put into final shape, for subsequent action by the state legislatures, were held at Santa Fe, New Mexico, and the signatures were actually affixed to the document on November 24, 1922.

The consent of Congress had been given by an act of August 19, 1921,<sup>19</sup> Having received the consent of Congress, laws were passed by the respective states giving the governor or other

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<sup>16</sup>The *Literary Digest* for February 21, 1925, p. 14, contains a reference to this tri-state compact. See also the *New York Times* of Dec. 4, 1924.

The compact was authorized by Legislative Act of the Commonwealth of Pennsylvania approved the twenty-fourth of May, 1923 (Pamphlet Laws 448); by Chapter 94 of the Laws of 1923, State of New Jersey; by Chapter 56 of the Laws of 1923, State of New York. These are the authorities quoted in the text of the compact.

<sup>17</sup>*An Act granting the consent and approval of Congress to the La Plata River compact*, Public—No. 346—68th Congress, S. 1656.

<sup>18</sup>For information concerning the Columbia River interstate agreement reference is made to Colonel Barden, 603 Burke Building, Seattle, Washington; to Major Richard Coiner, 321 Custom House, Portland, Oregon; and to Mr. Harvey Lindley, President of the Columbia Basin Irrigation League, Chamber of Commerce, Spokane, Washington. On July 10, 1922, a hearing was held before the Committee on Irrigation and Reclamation, United States Senate, Sixty-Seventh Congress, Second Session, on S. 3745, A Bill for the Creation of the Columbia Basin Irrigation Commission, and authorizing an Appropriation therefor.

<sup>19</sup>42 U. S. Statutes 171.

proper authority the power to represent the states in conferences called for the purpose of considering the general subject of Colorado River development.<sup>20</sup>

The interstate commission which worked out the details of the compact included Secretary Herbert Hoover, Chairman of the commission and federal representative; Gov. Emmet D. Boyle, Nevada; Gov. Oliver H. Shoup, Colorado; Gov. Merrit C. Mechem, New Mexico; Commissioner W. S. Norviel, Arizona; Commissioner W. F. McClure, California; Commissioner Delph E. Carpenter, Colorado; Commissioner James G. Scrugham, Nevada; Commissioner Stephen B. Davis, Jr., Associate Justice of the Supreme Court, New Mexico; Commissioner R. E. Caldwell, Utah; Commissioner Frank C. Emerson, Wyoming.<sup>21</sup> Ottamar Hamele, Chief Counsel of the Reclamation Service, was legal adviser to Mr. Hoover. Among the legal advisers of the states concerned were R. T. McKisick, Deputy Attorney General of California, and L. Ward Bannister, legal adviser to the Colorado Commissioner. The work of technical experts was also available. Data supplied by the Reclamation Service were the basis of many important sections of the Compact.

It should be noted, however, that the United States is not a party to the Compact notwithstanding the fact that Mr. Hoover is chairman of the Colorado River Commission. He was elected to that position by the other members of the Commission following his appointment by President Harding, December 17, 1921,<sup>22</sup> and participated in the negotiations "as the representative of and for the protection of the interests of the United States."<sup>23</sup> Under the provisions of the Colorado River Commission Act, the United States did not become a party to the agreement subsequently drawn, but acted simply under its constitutional authority over compacts between States.<sup>24</sup> The Colorado River Compact is not the case of a compact between a state and the federal govern-

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<sup>20</sup>Wyoming, Feb. 22, 1921, Laws of Wyoming, 1921, pp. 166-167; Arizona, March 5, 1921, Laws of Arizona, 1921, 53-55; New Mexico, March 11, 1921, Laws of New Mexico, 1921, 217-220; Utah, March 14, 1921, Laws of Utah, 1919-1921, 184; Nevada, March 21, 1921, Laws of Nevada, 1920-1921, 190-191; Colorado, April 2, 1921, Laws of Colorado, 1921, 811-815; California, May 12, 1921, Statutes of California, 1921, 85-86.

<sup>21</sup>Clarence C. Stetson, Executive Sec., Colo. R. Comm., *Making an Empire to Order*, World's Work, Nov. '22, pp. 92-102.

<sup>22</sup>Colorado River Commission, *Minutes and Record of the First Meeting*, United States Department of Commerce, Washington, D. C., Thursday, Jan. 26, 1922, 10 a. m.

<sup>23</sup>See Appendix I, Exhibit A, *fac simile of President Harding's appointment of Herbert Hoover*.

<sup>24</sup>Call, Lewis W. Chief Counsel, Federal Power Commission. *Memorandum for the Executive Secretary of the Federal Power Commission*, Washington, Feb. 1, 1922.

ment; it looks to an agreement between seven sovereign states with the consent of the national government.<sup>25</sup>

Prior to the signing of the Colorado River Compact by representatives of the seven states, a number of preliminary meetings and hearings were held. Between January 26, 1922, and November 24, inclusive, of the same year, there had been twenty-seven executive sessions of the Colorado River Commission. Seven of these were held at Washington, January 26 to 30, inclusive; one at Phoenix, Arizona, March 15; one at Denver, Colorado, April 1; and eighteen at Bishop's Lodge, Santa Fe, New Mexico, Nov. 9 to 24 inclusive. Public hearings were held before the Commission as follows: Phoenix, Arizona, March 15, 16, 17; Los Angeles, California, March 20; Salt Lake City, Utah, March 27 and 28; Grand Junction, Colorado, March 29; Denver, Colorado, March 31 and April 1; Cheyenne, Wyoming, April 2; and Bishop's Lodge, Santa Fe, New Mexico, November 9.<sup>26</sup>

In approaching the question of the respective spheres of authority of the federal and state governments in the control of the use of water of the Colorado River, our first step will be to study, in the light of the decision of the United States Supreme Court in the case of *Wyoming v. Colorado*, the language of the Compact. Then inquiry will be made as to the source of the right to use the water of interstate streams. In this connection the Hamele-Bannister controversy, the California doctrine, the Colorado doctrine, and the nature of the property right in the use of percolating water will be considered in the order named.

The first paragraph of Article III of the Compact reads as follows:

"(a) There is hereby apportioned from the Colorado River system in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist."<sup>27</sup>

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<sup>25</sup>Mr. Delph E. Carpenter, Interstate Rivers Compact Commissioner of Colorado, has collected a number of quotations bearing upon the general subject of power and separate sovereignty in his *Report and Supplemental Report on the Colorado River Commission*, Dec. 15, 1922, and March 20, 1923, respectively. Among the cases cited (pp. 27-31) are *United States v. Texas*, 143 U. S., 621, 646; *United States v. Louisiana*, 127 U. S., 182, 189; *Sturges v. Crowninshield*, 4 Wheat., 122, 192; *Gibbons v. Ogden*, 9 Wheat., 1, 187; *Chisholm v. Georgia*, 2 Dall., 419, 435; *McCulloch v. Maryland*, 4 Wheat., 316, 410; *Texas v. White*, 7 Wallace, 700, 725; *Collector v. Day*, 11 Wallace, 113, 124; *South Carolina v. United States*, 199 U. S., 437, 448; *Kansas v. Colorado*, 206 U. S., 46, 90.

<sup>26</sup>*Reclamation Record*, December, 1922.

The minutes of these executive sessions and hearings are in the custody of Mr. S. B. Davis, Jr., Solicitor of the Department of Commerce, Washington. They have been used extensively in the preparation of this study.

<sup>27</sup>See Appendix II, *A Text of the Compact*.

The fourth paragraph of that article provides :

“(d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.”

Article VIII is as follows :

“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 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 which they are situate.”

By the term “Upper Basin” is meant “those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry.”<sup>28</sup> By the term “Lower Basin” is meant “those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry.”<sup>29</sup>

The obvious purpose of these provisions of the Compact is to define the extent of the right which each designated portion of the Colorado River Basin shall enjoy in the use of the water. That such a definition of rights was considered necessary may be explained by the fact that the law respecting rights to the use of water in interstate streams is not well settled. Perhaps the most important case which had considered such questions, prior to the beginning of the work of the Colorado River Commission,

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<sup>28</sup>Article II, (f).

<sup>29</sup>Article II, (g).

was that of *Kansas v. Colorado*.<sup>30</sup> But the conclusion which the Supreme Court reached in that particular case was temporary rather than permanent in its effect, the statement being made that Kansas was not prejudiced by the decision but might come into court at a later date in case Colorado's withdrawal of water from the Arkansas River materially threatened the interests of Kansas. Referring to the *Kansas v. Colorado* case, Mr. Ottamar Hamele, Chief Counsel of the Reclamation Service, and Mr. James J. O'Hara, Assistant Solicitor of the Department of Commerce, are authority for the statement that, "many eminent water-right lawyers are not convinced as to the conclusions or the definiteness of the points decided in this case, and it has provoked much controversy as to its value as a contribution to water-right law"<sup>31</sup>

During the interim between the sessions of the Colorado River Commission, the Supreme Court entered its decision in the case of *Wyoming v. Colorado*.<sup>32</sup> Mr. Hoover, Chairman of the Colorado River Commission, declared that, "That decision, perhaps, simplifies the issues, because it fairly definitely establishes interstate rights to the water by priority of beneficial use."<sup>33</sup> It is certain that much was hoped for in the *Wyoming v. Colorado* decision. Thus, at one of the hearings of the Commission, Mr. Corthell<sup>34</sup> expressed the hope "that the Supreme Court would announce a decision in the Colorado-Wyoming case." "It is possible," he stated, "that it will not furnish a universal principle or rule, but undoubtedly if it does decide the case, it will announce a decision which will have an effect on this Commission or ought to have."<sup>35</sup> Mr. Carpenter, Commissioner from Colorado, pointed out that "the only advantage of any rule to be announced by the Supreme Court would be a rule to be applied by

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<sup>30</sup>206 U. S., 46, 22 S. Ct. 492 (1906).

This case involved testimony amounting to 8,559 typewritten pages with 122 exhibits.

<sup>31</sup>Joint memorandum for Mr. Clarence C. Stetson, Executive Secretary of the Colorado River Commission. Undated, but evidently written during the negotiations leading to the Compact.

<sup>32</sup>259 U. S. 419, 66 L. Ed. 660, 42 S. Ct. 552 (1922).

This case was argued three times. The bill was brought in 1911, the evidence was taken in 1913 and 1914, and the parties put it in condensed and narrative form in 1916. The decree was entered July 15, 1922 (259 U. S. 496), but a modified final decree of Oct. 9, 1922 (260 U. S. 1), indicates that four different appropriations which affected Colorado and one of which also affected Wyoming, were not provided for by the first decree.

<sup>33</sup>Committee on Irrigation of Arid Lands, House of Representatives, Sixty-seventh Congress, Second Session, *Hearings on H. R. 11449, by Mr. Swing, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin*, Part I, p. 52.

<sup>34</sup>See Appendix III, *Who's Who in Colorado River Development*.

<sup>35</sup>Colorado River Commission, *Hearing*, Senate Chamber, State Capitol Building, Cheyenne, Wyoming, April 2, 1922, p. 29.

the courts when the states are not able to settle their differences by treaty."<sup>36</sup>

But in spite of the fact that the law was not well settled prior to the decision of *Wyoming v. Colorado*, there are still many questions left undecided, as will be evident before we have gone much further in the present discussion. However, it will be worth while to note a number of principles which were recognized by the Supreme Court in that case, the question for consideration being the rights of appropriators in different states to the waters of an interstate stream, the Laramie River.<sup>37</sup>

The State of Wyoming brought suit against the State of Colorado and two Colorado corporations to prevent a proposed diversion in Colorado of part of the waters of the Laramie River, an interstate stream. As the United States appeared to have a possible interest in some of the questions, the court directed that the suit be called to the attention of the Attorney General; and, by the court's leave, a representative of the United States participated in the subsequent hearings. The Laramie is an unnavigable river which has its source in the mountains of northern Colorado, flows northerly 27 miles in that State, crosses into Wyoming, and there flows northerly and northeasterly 150 miles to the North Platte River, of which it is a tributary. Both Colorado and Wyoming are in the arid region where flowing waters are, and long have been, commonly diverted from their natural channels and used in irrigating the soil and making it productive. For many years some of the waters of the Laramie River have been subjected to such diversion and use, part in Colorado and part in Wyoming. When the suit was brought, the two corporate defendants, acting under the authority and permission of Colorado, were proceeding to divert in that State a considerable portion of the waters of the river and to conduct the same into another watershed, lying wholly in Colorado, for use in irrigating lands more than fifty miles distant from the point of diversion. The topography and natural drainage were declared to be such that none of the water could return to the stream or ever reach Wyoming.

By the bill Wyoming sought to prevent this diversion on two grounds: One, that without her sanction the waters of this interstate stream could not rightfully be taken from its watershed and carried into another where she never could receive any benefit from them; and the other, that through many appropriations

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<sup>36</sup>Colorado River Commission, *Hearing*, Senate Chamber, State Capitol Building, Cheyenne, Wyoming, April 2, 1922, p. 30.

<sup>37</sup>Much of the language in several of the paragraphs which follow has been taken from the opinion in the *Wyoming-Colorado* case.

made at great cost, which were prior in time and superior in right to the proposed Colorado diversion, Wyoming and her citizens had become and were entitled to use of a large portion of the waters of the river in the irrigation of lands in that State and that the proposed Colorado diversion would not leave in the stream sufficient water to satisfy these prior and superior appropriations, and so would work irreparable prejudice to Wyoming and her citizens.

By the answers Colorado and her co-defendants sought to justify and sustain the proposed diversion on three distinct grounds: First, that it was the right of Colorado as a State to dispose, as she might choose, of any part or all of the waters flowing in the portion of the river within her borders, "regardless of the prejudice that it may work" to Wyoming and her citizens; secondly, that Colorado was entitled to an equitable diversion of the waters of the river and that the proposed diversion, together with all subsisting appropriations in Colorado, did not exceed her share; and, thirdly, that after the proposed diversion there would be left in the river and its tributaries in Wyoming sufficient water to satisfy all appropriations in that State whose origin was prior in time to the effective inception of the right under which the proposed Colorado diversion was about to be made.

The answer of the court to Colorado's contention that she as a state rightfully might divert and use, as she might choose, the waters flowing within her boundaries in this interstate stream, regardless of any prejudice that this might work to others having rights in the stream below her boundary, was that it could not be maintained. "The river throughout its course in both states is but a single stream, wherein each state has an interest which should be respected by the other," declared Mr. Justice Van Devanter, writing the opinion for the court. He also pointed out that a like contention was set up by Colorado in her answer in *Kansas v. Colorado*, but was adjudged untenable, further considerations satisfying the members of the Supreme Court that the ruling was right.<sup>38</sup>

It appears from the language of the decision that Colorado objected to the doctrine of appropriation as a basis of decision. It was argued by counsel for Colorado that Colorado could accomplish more with the water than Wyoming did or could, that Colorado proposed to use it on lands in the Cache la Poudre

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<sup>38</sup>Other cases cited in support of the ruling are: *Rickey Land & Cattle Co. v. Miller and Lux*, 218 U. S., 258; *Bean v. Morris*, 221 U. S., 485; *Missouri v. Illinois*, 180 U. S., 208 and 200 U. S. 496; and *Georgia v. Tennessee Copper Co.*, 206 U. S., 230.

Valley, and that they with less water would produce more than the lands in the portion of the Laramie Valley known as the Laramie Plains. The court considered the material facts and came to the conclusion that the doctrine of appropriation as a basis of decision furnishes the only basis which is consonant with the principles of right and equity applicable to this kind of controversy.<sup>39</sup>

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<sup>39</sup>The language of the court on this point is:

"Colorado further answers that she can accomplish more with the water than Wyoming does or can; that she proposes to use it on lands in the Cache la Poudre Valley, and that they with less water will produce more than the lands in the portion of the Laramie Valley known as the Laramie Plains. It is true that irrigation in the Poudre Valley has been carried to a higher state of development than elsewhere in the Rocky Mountain region and that the lands of that valley lie at a lower altitude than do those in the Laramie Plains and generally are better adapted to agriculture. In some parts they also require less water. It may be assumed that the lands intended to be reclaimed and irrigated in the Poudre Valley conform to the general standard, although this is left uncertain. But for combined farming and stock raising those of the Laramie Plains offer opportunities and advantages which are well recognized. It is to this use that they chiefly are devoted. It is a recognized and profitable industry, has been carried on there for many years and is of general economic value. Many of the original ranchmen still are engaged in it, some on the tracts where they first settled. With the aid of irrigation, native hay of a high quality, alfalfa, oats, and other forage are grown for winter feeding, the livestock being grazed most of the year on unirrigated areas and in the neighboring hills and mountains. In this way not only are the irrigated tracts made productive, but the utility and value of the grazing areas are greatly enhanced. The same industry is carried on in the same way in sections of Colorado. In both States this is a purpose for which the right to appropriate water may be exercised, and no discrimination is made between it and other farming. Even in this suit Colorado is asserting appropriations of this class for 4,250 acres in the portion of the Laramie Valley in that State, and is claiming under them an amount of water in excess of what she asserts will irrigate a like acreage in the Poudre Valley.

"Some of the appropriations from the stream in Wyoming are used for agriculture alone. One of the large projects, dating from territorial days, and constructed at great cost, carries water from the river through a tunnel one-half mile long and canals several miles in length to the Wheatland district, where it is used in irrigating 30,000 acres, all of which are very successfully and profitably farmed in small tracts. This project uses one very large and one comparatively small reservoir for storing water and equalizing the natural flow.

"We conclude that Colorado's objections to the doctrine of appropriation as a basis of decision are not well taken, and that it furnishes the only basis which is consonant with the principles of right and equity applicable to such a controversy as this is. The cardinal rule of the doctrine is that priority of appropriation gives superiority of right. Each of these states applies and enforces this rule in her own territory, and it is the one to which intending appropriators naturally would turn for guidance. The principle on which it proceeds is not less applicable to interstate streams and controversies than to others. Both States pronounce the rule just and reasonable as applied to the natural conditions in that region; and to prevent any departure from it the people of both incorporated it into their constitutions. It originated in the customs and usages of the people before either State came into existence, and the courts of both hold that their constitutional provisions are to be taken as recognizing the prior usage rather than as creating a new rule. These considerations persuade us that its application to such a controversy as is here presented can not be other than eminently just and equitable to all concerned."

The doctrine of prior appropriation, therefore, as the basis of water rights, is the rule to be applied even though one area be less productive than another. Prior appropriation of the water for use on relatively poor land takes precedence over subsequent appropriation for use on good land. To what extent this principle may be carried it is difficult to say. In the discussion of this point in the Wyoming-Colorado opinion it should be noted that the court found that the combined farming and stock raising which was done in Wyoming constituted "a recognized and profitable industry" which had been carried on there for many years and was of "general economic value." Whether the principle would be followed with respect to one or two prior appropriators on poor land in a relatively desolate area was not determined by the Wyoming-Colorado case.

In a general survey of a number of matters in the light of which the opposing contentions in *Wyoming v. Colorado* should be taken up, the Supreme Court investigated the reasons for considering the doctrine of prior appropriation as a satisfactory basis by which to determine conflicting claims to the use of water in interstate streams. "Both Colorado and Wyoming," wrote Mr. Justice Van Devanter, "are along the apex of the Continental Divide, and include high mountain ranges where heavy snows fall in winter and melt in late spring and early summer, this being the chief source of water supply. Small streams in the mountains gather the water from the melting snow and conduct it to larger streams below, which ultimately pass into surrounding states. The flow in all streams varies greatly in the course of the year, being highest in May, June, and July, and relatively very low in other months. There is also a pronounced variation from year to year . . . Both States have vast plains and many valleys of varying elevation where there is not sufficient natural precipitation to moisten the soil and make it productive, but where, when additional water is applied artificially, the soil becomes fruitful—the reward being generous in some areas and moderate in others, just as husbandry is variously rewarded in States where there is greater humidity, such as Massachusetts, Virginia, Ohio, and Tennessee. Both States were Territories long before they were admitted into the Union as States and while the Territorial condition continued were under the full dominion of the United States. At first the United States owned all the lands in both and it still owns and is offering for disposal millions of acres in each.

"Turning to the decisions of the courts of last resort in the two States, we learn that the same doctrine respecting the diversion and use of the waters of natural streams has prevailed in

both from the beginning and that each State attributes much of her development and prosperity to the practical operation of this doctrine. The relevant views of the origin and nature of the doctrine as shown in these decisions may be summarized as follows: The common law rule respecting riparian rights in flowing water never obtained in either State. It always was deemed inapplicable to their situation and climatic conditions. The earliest settlers gave effect to a different rule whereby the waters of the streams were regarded as open to appropriation for irrigation, mining, and other beneficial purposes. The diversion from the stream and the application of the water to a beneficial purpose constituted an appropriation, and the appropriator was treated as acquiring a continuing right to divert and use the water to the extent of his appropriation, but not beyond what was reasonably required and actually used. This was deemed a property right and dealt with and respected accordingly. As between different appropriations from the same stream, the one first in time was deemed superior in right, and a completed appropriation was regarded as effective from the time the purpose to make it was definitely formed and actual work thereon was begun, provided the work was carried to completion with reasonable diligence. This doctrine of appropriation, prompted by necessity and formulated by custom, received early legislative recognition in both Territories and was enforced in their courts. When the states were admitted into the Union it received further sanction in their constitutions and statutes and their courts have been uniformly enforcing it."<sup>40</sup>

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<sup>40</sup>Mr. Justice Van Devanter here cites the following cases showing the manner in which Colorado and Wyoming deal with such problems arising within their own jurisdictions: *Yunker v. Nichols*, 1 Colo., 551; *Schilling v. Rominger*, 4 Colo., 100; *Coffin v. Left Hand Ditch Co.*, 6 Colo., 443; *Thomas v. Guiraud*, 6 Colo., 530; *Strickler v. Colorado Springs*, 16 Colo., 61; *Oppenlander v. Left Hand Ditch Co.*, 18 Colo., 142; *Wyatt v. Larimer and Weld Irrigation Co.*, 18 Colo., 298; *Crippen v. White*, 28 Colo., 298; *Moyer v. Preston*, 6 Wyo., 308; *Farm Investment Co. v. Carpenter*, 9 Wyo., 110; *Willey v. Decker*, 11 Wyo., 496; *Johnston v. Little Horse Creek Irrigating Co.*, 13 Wyo., 208.

The following statement of Mr. Bannister to Hon. Addison T. Smith, Chairman of the Committee on Irrigation and Reclamation, House of Representatives, Washington, D. C., Feb. 21, 1924, includes additional data:

"Dear Mr. Smith: Having forgotten to comply this morning with one of the requests of Judge Raker, one of the members of your committee, I desire to make a supplemental statement. He asked that I supply the committee with cases holding that the riparian system does not exist in the seven States which I mentioned, namely, Arizona, New Mexico, Utah, Nevada, Wyoming, Idaho, and Colorado.

"The cases having bearing upon this question may be classified into those of the State courts and those of the United States Supreme Court.

"As for the State cases, I refer you to the following, although many others could be cited: Arizona: *Clough v. Wing*, 2 Ariz., 371. Colorado: *Yunker v. Nichols*, 1 Colo., 551; *Coffin v. Left Hand Ditch Co.*, 6 Colo., 443. Idaho: *Drake v. Earhart*, 2 Idaho, 750. Nevada: *Jones v. Adams*, 19 Nev., 78.

In order, therefore, that water rights might be secure and thus lend stability to all home building and agricultural development in that section of the country, the Supreme Court concluded that appropriation afforded the best basis for the determination of conflicting claims. As stated in the opinion, "The first settlers located along the streams where water could be diverted and applied at small cost. Others with more means followed and reclaimed lands farther away. Then companies with large capital constructed extensive canals and occasional tunnels whereby water was carried to lands remote from the stream and supplied, for hire, to settlers who were not prepared to engage in such large undertakings. Ultimately, the demand for water being in excess of the dependable flow of the streams during the irrigation season, reservoirs were constructed wherein water was impounded when not needed and released when needed, thereby measurably equalizing the natural flow. Such was the course of irrigation development in both states. It began in territorial days, continued without change after statehood, and was the basis for the large respect always shown for water rights. These constituted the foundation of all rural home building and agricultural development, and, if they were rejected now, the lands would return to their naturally arid condition, the efforts of the settlers and the expenditures of others would go for naught and values mounting into large figures would be lost."

Then provisions of federal law were considered, the Court remarking, "As the United States possessed plenary authority over Colorado and Wyoming while they were Territories and has at all times owned the public lands therein, we turn next to its action.

"The Act of July 26, 1866 (ch. 262, sec. 9, 14 Stat. 251), contained a section providing:

"Whenever, by priority of possession, rights to the use of

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Wyoming: *Farm Investment Co. v. Carpenter*, 9 Wyo., 110. New Mexico: *Trombley v. Luteran*, 6 New Mexico, 15. Utah: *Stowell v. Johnson*, 7 Utah, 215. As for Federal cases, it may be said that they are in confusion as to whether or not prior to the statehood of these States the Federal Government had riparian rights and as to whether since statehood the Government has any such rights, and as to the related question as to whether in point of political or legislative power a State may select its own water system, whether appropriation or riparian. There are no Federal cases as directly to the point on either side of these questions as could be wished.

"Taking the Federal cases, however, as they are, the following support the view that it is within the power of a State to choose the appropriation system to the exclusion of the riparian system if it desires to do so, and therefore to exclude riparian rights no matter by whom owned: *Krall v. United States*, 79 Fed. 241 (1897). *Kansas v. Colorado*, 206 U. S. 46 (1906). *Boquillas Land & Cattle Co. v. Curtis*, 213 U. S. 564 (1909). On the other hand, some Federal cases somewhat indicating the opposing view are: *Sturr v. Beck*, 133 U. S. 541 (1889). *Winters v. United States*, 207 U. S. 564 (1918)."

water for mining, agricultural, manufacturing, or other purposes have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same.'

The occasion for this provision and its purpose and effect were extensively considered by this court in the cases of *Atchison v. Peterson* (20 Wall. 670), the conclusions in both being shown in the following excerpt from the latter, pages 681-682:

"In the late case of *Atchison v. Peterson*, we had occasion to consider the respective rights of miners to running waters on the mineral lands of the public domain; and we there held that by the custom which had obtained among miners in the Pacific States and Territories, the party who first subjected the water to use or took the necessary steps for that purpose, was regarded, except as against the government, as the source of title in all controversies respecting it; that the doctrines of the common law declaratory of the rights of riparian proprietors were inapplicable, or applicable only to a limited extent, to the necessities of miners, and were inadequate to their protection; that the equality of rights recognized by that law among all the proprietors upon the same stream, would have been incompatible with any extended diversion of the water by one proprietor, and its conveyance for mining purposes to points from which it could not be restored to the stream; that the government by its silent acquiescence had assented to and encouraged the occupation of the public lands for mining; and that he who first connected his labor with property thus situated and open to general exploration, did in natural justice acquire a better right to its use and enjoyment than others who had not given such labor; that the miners on the public lands throughout the Pacific States and Territories, by their customs, usages, and regulations, had recognized the inherent justice of this principle, and the principle itself was at an early period recognized by legislation and enforced by the courts in those States and Territories, and was finally approved by the legislation of Congress in 1866. The views there expressed and the rulings made are equally applicable to the use of water on the public lands for purposes of irrigation. No distinction is made in those States and Territories by the custom of miners or settlers, or by the Courts, in the rights of the first appropriator from the use made of the water, if the use be of a beneficial one.'

"And on the same subject it was further said, in *Broder v. Water Co.* (101 U. S. 274, 276):

"It is the established doctrine of this court that rights of miners, who had taken possession of mines and worked and developed them, and the rights of persons who had constructed canals and ditches to be used in mining operations

and for purposes of agricultural irrigation, in the region where such artificial use of water was an absolute necessity, are rights which the government had, by its conduct, recognized and encouraged and was bound to protect, before the passage of the act of 1866. We are of opinion that the section of the act which we have quoted was rather a voluntary recognition of a pre-existing right of possession, constituting a valid claim of its continued use, than the establishment of a new one.'

"The act of July 9, 1870 (ch. 235, sec. 17, 16 Stat. 217) provided that 'all patents granted, or preemption or homesteads allowed, shall be subject to any vested and accrued water rights' acquired under or recognized by the provision of 1866. These provisions are now sections 2339 and 2340 of the Revised Statutes.

"The act of March 3, 1877 (ch. 107, sec. 1, 19 Stat. 377), providing for the sale of desert lands in tracts of one section each to persons undertaking and effecting their reclamation, contained a provision declaring that 'the right to the use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation; and such right shall not exceed the amount of water actually appropriated, and necessarily used for the purpose of irrigation and reclamation; and all surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers, and other sources of water supply upon the public lands, and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining, and manufacturing purposes subject to existing rights.' Colorado was not at first included in this act, but was brought in by an amendatory act. Next came the act of March 3, 1891 (ch. 561, sec. 18, 26 Stat. 1095), granting right of way through the public lands and reservations for canals and ditches to be used for irrigation purposes, and containing a proviso saying, 'the privilege herein granted shall not be construed to interfere with the control of water for irrigation and other purposes under authority of the respective States or Territories.'

"Of the legislation thus far recited it was said, in *United States v. Rio Grande Irrigation Co.* (174 U. S. 690, 706):

"'Obviously by these acts, so far as they extended, Congress recognized and assented to the appropriation of water in contravention of the common law rule as to continuous flow'; and again, 'the obvious purpose of Congress was to give its assent, so far as the public lands were concerned, to any system, although in contravention to the common-law rule, which permitted the appropriation of those waters for legitimate industries.'

“June 17, 1902 (ch. 1093, 32 Stat. 388), the national reclamation act was passed under which the United States entered upon the construction of extensive irrigation works to be used in the reclamation of large bodies of arid public lands in the Western States. Its eighth section declared:

“‘Nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water use in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws, *and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, That the right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of right.*’

The words here set forth in italics constitute the only instance, so far as we are advised, in which the legislation of Congress relating to the appropriation of water in the arid land region has contained any distinct mention of interstate streams. The explanation of this exceptional mention is to be found in the pendency in this court at that time of the case of *Kansas v. Colorado*, wherein the relative rights of the two States, the United States, certain Kansas riparians and certain Colorado appropriators and users in and to the waters of the Arkansas River, an interstate stream, were thought to be involved. Congress was solicitous that all questions respecting interstate streams thought to be involved in that litigation should be left to judicial determination unaffected by the act; in other words, that the matter be left just as it was before. The words aptly reflect that purpose.”

At this point in the Wyoming-Colorado opinion, the principles established by the case of *Kansas v. Colorado* were restated by the Court. It was pointed out that on some of the questions there presented it was intended to be and was comprehensive, and that on others it was intended to be within narrower limits, the court saying that the views expressed in the *Kansas-Colorado* opinion were to be confined to a case in which the facts and the local law of the two States were as there disclosed. On full consideration it was broadly determined that a controversy between two States over the diversion and use of waters of a stream passing from one to the other makes a matter for investigation and determination by the Supreme Court in the exercise of its

original jurisdiction, and also that the upper state on such a stream does not have such ownership or control of the waters flowing therein as entitles her to divert and use them regardless of any injury or prejudice to the rights of the lower state in the stream. And, on consideration of the particular facts disclosed and the local law of the two states, it was determined that Colorado was not taking more than what under the circumstances would be her share under an equitable apportionment.

Mr. Justice Van Devanter in the Wyoming-Colorado case added a word of caution concerning the scope and interpretation of the ultimate conclusion in the *Kansas v. Colorado* decision. "It should be observed," he said, "first, that the court was there concerned, as it said, with a controversy between two states, 'one recognizing generally the common-law rule of riparian rights' and the other the doctrine of appropriation; secondly, that the diversion complained of was not to a watershed from which none of the water could find its way into the complaining state, but quite to the contrary; and, thirdly, that what the complaining state was seeking was not to prevent a proposed diversion for the benefit of lands as yet unreclaimed, but to interfere with a diversion which had been practiced for years and under which many thousands of acres of unoccupied and barren lands had been reclaimed and made productive. In these circumstances, and after observing that the diminution in the flow of the river had resulted in 'perceptible injury' to portions of the valley in Kansas, but in 'little, if any, detriment' to the great body of the valley, the court said: 'It would seem equality of right and equity between the two states forbids any interference with the present withdrawal of water in Colorado for purposes of irrigation,' and that if the depletion of the waters by Colorado should be increased, the time would come when Kansas might 'rightfully call for relief against the action of Colorado, its corporations, and citizens in appropriating the waters of the Arkansas for irrigation purposes.' What was there said about 'equality of right' refers, as the opinion shows (p. 97), not to an equal division of the water, but to the equal level or plane on which all the states stand, in point of power and right, under our constitutional system."

It was then pointed out that although the Wyoming-Colorado case also involved an interstate stream, as did the *Kansas-Colorado* case, the controversy between Wyoming and Colorado was between states in both of which the doctrine of appropriation has prevailed from the time of the first settlements and always has been applied in the same way, and has been recognized and sanctioned by the United States, the owner of the public lands. In

the Wyoming-Colorado case the complaining state was not seeking to impose a policy of her choosing on the other state, but to have the common policy which each enforces within her limits applied in determining their relative rights in the interstate stream.

The Wyoming-Colorado decision is also of importance in connection with the question of transmountain diversion. The two corporate defendants, it will be remembered, acting under the authority and permission of Colorado, were proceeding to divert in Colorado a considerable portion of the waters of the river and to conduct them into another watershed, lying wholly in Colorado. The topography and natural drainage were declared to be such that none of the water could return to the stream or ever reach Wyoming. Wyoming objected to the proposed diversion on the ground that it was to another watershed from which she could receive no benefit. The Supreme Court held that this objection was untenable. The basis of this view was the fact that in neither State does the right of appropriation depend on the place of use being within the same watershed, a state of affairs which the court did not think should be disregarded in determining what was reasonable and admissible as to this stream, as between the respective parties. Cases were cited showing that diversions from one watershed to another are commonly made in both states and the practice recognized by the decisions of their courts.<sup>41</sup> Pursuing the matter further it was shown that the evidence indicated that diversions are made and recognized in both states which in principle are not distinguishable from the case then under consideration, that is, where water is taken in one state from a watershed leading into the other state and conducted into a different watershed leading away from that state, and from which she never can receive any benefit.

Summing up the principles affirmed in the Wyoming-Colorado case we find that an interstate river throughout its course is but a single stream; that the doctrine of prior appropriation which experience has shown to be better adapted to the needs of the arid West than that of riparian ownership, is a correct principle for determining relative rights to the use of water as between owners of pieces of land of different quality as well as between owners of land of the same quality; that Wyoming v. Colorado is to be distinguished from Kansas v. Colorado because of the fact that in the Wyoming case the court was dealing with two

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<sup>41</sup>Coffin v. Left Hand Ditch Co., 6 Colo., 443, 449; Thomas v. Guiraud, 6 Colo., 530; Hammond v. Rose, 11 Colo., 524; Oppenlander v. Left Hand Ditch Co., 18 Colo., 142, 144; Moyer v. Preston, 6 Wyo., 308, 321; Willey v. Decker, 11 Wyo., 496, 529-531.

states both of which gave effect to the appropriation doctrine, whereas in the Kansas case the court was dealing with one state in which the riparian doctrine prevails and another in which the prior appropriation doctrine is in effect; and, finally, that transmountain diversion is not objectionable as between individuals of different states if by the local law of both jurisdictions such diversion is permitted. We shall find that these principles, however, have caused much concern among the states interested in Colorado River development, for their application is not clear in cases which may arise in connection with the development of that stream.

"We are very much concerned as to what effect the construction of the Boulder Dam might have, as a matter of law, upon our rights in the future for agricultural developments," said Honorable Elmer C. Leatherwood of Utah, member of the Committee on Irrigation and Reclamation, House of Representatives, Sixty-eighth Congress, First Session; in hearings before that body.<sup>42</sup> In similar vein, Mr. Carr, a Lower Basin man, stated: "The fear of the Upper Basin states, however, is this: That if this water is stopped by a big dam at Boulder Canyon and is allowed to run through the turbines and water wheels of power plants, that use of water being a beneficial use, a legal priority will be created under the doctrine of the decision of the United States Supreme Court in the case of *Colorado v. Wyoming*."<sup>43</sup>

Carr's statement was confirmed by a note which Carpenter, interstate compact commissioner of Colorado, added to a memorandum which he had prepared on the law of interstate compacts. "Since the foregoing memorandum was written," is the assertion of Mr. Carpenter, "the United States Supreme Court decided, in *Wyoming v. Colorado*, that in cases between two states, both of which recognize the doctrine of prior appropriation as a matter of local law, the court will apply the fundamental principles of the doctrine in the allocation of the waters of a river common to the two states and will so apportion the dependable average annual flow between the states that the older established uses in both states will receive first protection. The doctrine so announced leaves the Western states to a rivalry and a contest of speed for future development. The upper state has but one alternative, that of using every means to retard development in the lower state until the uses within the upper state have reached their maximum. The states may avoid this unfortunate situation by determining their respective rights by interstate com-

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<sup>42</sup>*Hearings*, H. R. 2903, Part IV, p. 592, March 18, 1924.

<sup>43</sup>*Ibid.*, p. 555, March 14, 1924.

pact before further development in either state, thus permitting freedom of development in the lower state without injury to future growth in the upper."<sup>44</sup>

These statements are illustrative of the situation resulting from the opinion in the Wyoming-Colorado case. The language of the decision leads one to believe that appropriations are good without reference to state lines—in short, that state lines have been obliterated—a view taken by Mr. Ottamar Hamele, Chief Counsel of the Bureau of Reclamation; but Mr. L. Ward Bannister, a leading authority on the law of water rights,<sup>45</sup> is on record as having taken the position that the Wyoming-Colorado decision does not obliterate state lines. The Hamele-Bannister controversy will be examined in detail in subsequent paragraphs.<sup>46</sup>

"Now, is it or is it not a fact," asked Mr. Raker, "that if the Federal Government should proceed to build a dam on the Colorado River either at Boulder Canyon or Grand Canyon or elsewhere and proceed with its rights, the parties above would be subject to the prior development of the Federal Government?"<sup>47</sup> To this question Mr. Hamele responded that the parties would be subject to the rule laid down in *Wyoming v. Colorado* to the effect that "appropriations are good without reference to State lines in the absence of some understanding to the contrary."<sup>48</sup> This answer of Mr. Hamele clearly shows that he believed that the Wyoming-Colorado decision holds that the rights of appropriators are not in any manner affected by state boundaries. There is good authority for this position. "The river throughout its course in both States is but a single stream . . . .," were the words of Mr. Justice Van Devanter. Again, "We conclude that . . . . the doctrine of appropriation . . . . furnishes the only basis which is consonant with the principles of right and equity applicable to such a controversy . . . . In suits between appropriators from the same stream, but in different States recognizing the doctrine of appropriation, the question whether rights under such appropriations should be judged by

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<sup>44</sup>Carpenter, Delph E. *Report in Re Colorado River Compact*, pp. 31, 32, Denver, Dec. 15, 1922.

<sup>45</sup>For information concerning men whose names appear in the text of this thesis, reference should be made to Appendix III, *Who's Who in Colorado River Development*.

<sup>46</sup>There are three phases of the Hamele-Bannister controversy. Two of them arise from different theories as to the source, whether federal or state, of rights in the use of water. These will be considered later. The third phase of the controversy is the one in which we are at present interested. It springs from different interpretations of the Wyoming-Colorado decision.

<sup>47</sup>*Hearings*, H. R. 2903, Part V, p. 885, March 25, 1924.

<sup>48</sup>*Ibid.*

the rule of priority has been considered by several courts, State and Federal, and has been uniformly answered in the affirmative. . . . These decisions, although given in suits between individuals, tend strongly to support our conclusion, for they show that by common usage, as also by judicial pronouncement, the rule of priority is regarded in such States as having the same application to a stream flowing from one of these to another that it has to streams wholly within one of them."<sup>49</sup>

On the other hand, Mr. Bannister was of the opinion that the Wyoming-Colorado decision does not obliterate state lines. During the February, 1924, hearings before the Committee on Irrigation and Reclamation of the House of Representatives he argued that the Supreme Court grafted an alien principle upon the doctrine of appropriation as it is applied by the states. "This principle," he declared, "is that the water fund which is to be divided among the water users shall consist not of that natural flow of the moment but of the 'commercially dependable average annual flow'."<sup>50</sup> In other words, Mr. Bannister believed that when the

<sup>49</sup>*Wyoming v. Colorado*, *passim*.

<sup>50</sup>"The Wyoming-Colorado decision does not obliterate State lines. If State lines were obliterated, then there would happen between the two States exactly what would happen within the boundaries of any one appropriation State; and then it would follow as a consequence that all appropriations take the water in accordance with the natural flow of the moment; if the flow be great, there may be water enough for all, or only the tailenders would suffer; if it be extraordinarily great, there may be water enough for all; if the flow be small, then there would be water only for the early appropriators, and a great many would be unsatisfied. That is the way the law is administered within the limits of any appropriation State . . .

"But . . . the Wyoming case does not take the natural flow of the moment as the water fund that is to be divided among the water users, as is done in every State where only one State is concerned. It grafted on an alien principle, which is that the water fund shall consist not of that natural flow of the moment but of the 'commercially dependable average annual flow.' That water fund or volume is an altogether different thing.

"And after the court built up, as it did in that case, the water fund, consisting of the commercially dependable average annual flow . . . then it said, 'We will apply the priorities of Colorado and Wyoming to that artificially created fund in the order of their seniority, just as if State lines did not exist.'

"Now, the point I wish to make is that, if this case had arisen within any single State, no artificial water fund would have been built up, but the fund that would have been used for distribution would have been the natural flow of the moment, which is always varying.

"Now, I think I know why—although the court does not say why—the court proceeded to build up that artificial water fund.

"The water on the interstate stream has to be administered between States as within a single State by opening and closing headgates. The water officials of one State can not invade another for the purpose of effecting a distribution of water in the other State. I think the court so thought, and therefore said in substance, 'We will build up a water fund or volume of water. We will take something unusual; something that is not taken in any appropriation State; and then we will divide it so that each State may administer its part of that fund, and that it will not be necessary for the officials of one State to cross the boun-

Supreme Court made its mathematical calculation of the number of acre-feet to be allowed to the respective parties, it had in mind the "commercially dependable average annual flow," a water fund or volume which he regarded (and correctly so) as an altogether different thing from the water fund available as the natural flow of the moment. Further, he believed that with this water fund in mind, the actual apportionment of water made in the Wyoming-Colorado case shows that state lines were not obliterated.

Turning to the decision itself to examine whatever basis there may be for this view, we observe that the court, after hearing all the evidence, found that the available supply was 288,000 acre-feet.<sup>51</sup> This amount was the total volume of water available from all sources for use by the contending appropriators. It included 170,000 acre-feet available in the Laramie River at Woods, Wyoming; 93,000 acre-feet added to that stream from the Little Laramie below Woods; and 25,000 acre-feet contributed from other streams below Woods. Having found the amount of water available after provision had been made to supply all appropriators whose rights were not questioned by any of the parties interested in the Wyoming-Colorado litigation, the court proceeded to ascertain the dates of the various appropriations, whether in Wyoming or in Colorado, and gave a superior right to those made at the earlier date.<sup>52</sup>

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daries into the other as would be necessary if State lines were really to be disregarded . . . Since each of these two States enforces the priority system, we will enforce it as between these States.'

"And then the court proceeded to do something very different—something that is not done in either of those States or in any other State.

"Now, it is the determination or the fixation of that water fund which, under the Wyoming-Colorado decision, will require an infinite, painstaking investigation, and will be the breeder of any quantity of litigation—if, indeed, that the principle of that case is to be applied. Then too, the court in that case threw the burden of reservoir construction on the appropriators in the lower State, whereas if only one State were involved that burden is thrown on the most recent appropriator rather than on the lowest . . . Even if the principle of *Wyoming v. Colorado* were to be applied to the Colorado River System it probably would require twenty-five years to determine the relative priorities to the use of water between the users throughout the system in the seven States in order to determine the share of each State in the water fund of which I have been speaking and to determine the amount of that water fund itself."—*Hearings, H. R. 2903, Part I, pp. 221-223, Feb. 21, 1924.*

<sup>51</sup>An acre-foot of water is the amount required to cover an acre to the depth of one foot.

<sup>52</sup>The last two paragraphs of the decision read as follows:

"As the available supply is 288,000 acre-feet and the amount covered by senior appropriations in Wyoming is 272,500 acre-feet, there remain 15,500 acre-feet which are subject to this junior appropriation in Colorado. The amount sought to be diverted and taken under it is much larger.

"A decree will accordingly be entered enjoining the defendants from diverting or taking more than 15,500 acre-feet per year from the Laramie River by means of or through the so-called Laramie-Poudre project."

The ideas which Mr. Bannister linked with his assertion that the Wyoming-Colorado case does not obliterate state lines, do not seem pertinent to the discussion of that point. It may be granted, for the sake of argument, that the Supreme Court in this decision did regard the "commercially dependable average annual flow" rather than the flow of the moment as the water fund available for distribution. But it does not at all follow that such a course leads to the recognition of state lines. In fact whether the size of the water fund is determined by the one method or the other, does not affect the principle of distribution of the different portions of that fund. It is clear from the decision itself, that the Court compared the dates of the different appropriations, whether in Wyoming or in Colorado, and accorded the better right to the earlier appropriation. On this phase of the Hamele-Bannister controversy, therefore, we must give Mr. Hamele credit for correctly asserting that state lines have no effect, at least in theory, upon the relative rights of appropriators of waters in interstate streams.<sup>53</sup>

Adopting the view that is well substantiated by *Wyoming v. Colorado*—that an appropriator in state A has a better right to

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<sup>53</sup>The following may be added to Mr. Bannister's statement of what he considers to be the effect of the Wyoming-Colorado decision:

"As I see it, the Wyoming decision has killed the reclamation of lands in the arid West; that is, on interstate streams, except where these States on such a stream enter into compacts. And here is the reason: If the qualified principle of interstate priority laid down in that case is to be the governing law between the states, then every state which secures . . . a project from the Federal Government would be acquiring a priority of right against the later users in the other states, and we may therefore expect that the senators and representatives of those other states will resist the action of the Federal Government, or the contemplated action, in giving to the one state a project which would carry with it a priority against the other states."—*Hearings*, H. R. 2903, Part I, p. 228, Feb. 21, 1924.

Prior to the opinion in the Wyoming-Colorado case, Mr. James J. O'Hara, Assistant Solicitor in the Department of Commerce, and Mr. Ottamar Hamele, Chief Counsel of the Reclamation Service, prepared a joint memorandum for Mr. Stetson, Executive Secretary of the Colorado River Commission, in which they discussed the effect of intervening state boundaries upon the application of the doctrine of prior appropriation. A portion of the memorandum is quoted herewith:

"So far as the rights of individual appropriators from interstate streams are concerned, the courts of the arid West have rather generally held that the doctrine of prior appropriation obtains without reference to state lines and the first in point of time applying water to beneficial use is first in point of right, intervening state boundaries making no difference. The leading state and federal cases upon this point follow: In state courts—*Conant v. Deep Creek*, etc. Irrigation Company (Utah) 66 Pac., 188; *Willey v. Decker*, (Wyo.) 73 Pac., 210; *Taylor v. Hulett*, (Idaho) 97 Pac., 37; *Turley v. Furman*, (N.M.) 114 Pac. 278; *Walbridge v. Robinson*, (Idaho) 125 Pac., 812; *Stockman v. Leddy*, (Colo.) 129 Pac., 220. In federal courts—*Howell v. Johnson*, (Mont.) 89 Fed., 556; *Perkins Co. v. Graff* (Neb.) 114 Fed., 441; *Morris v. Bean* (Mont.) 123 Fed., 618, 146 Fed., 423, 159 Fed., 651, 221 U. S., 485; *Hoge v. Eaton*, (Colo.) 125 Fed., 411; *Anderson v. Bassman*, (Calif.) 140 Fed., 14; *Rickey Land & Cattle*

the use of water than a subsequent appropriator in state B—at once introduces complications when one faces the actual situation prevailing on the Colorado River and makes an attempt to apply theory to practice. For if a dam is built at Lee's Ferry in Arizona, which is not far south of the Arizona-Utah line, part of the artificial reservoir resulting from such construction will be in Utah and part in Arizona, Arizona being the state in which the dam is located.<sup>54</sup> Similarly, if a dam is built at the Flaming Gorge reservoir site which is close to the Utah-Wyoming boundary, a large part of the water impounded by a dam located in Utah actually will be stored in Wyoming. To the extent that these dams regulate the flow of the river, a larger and more constant supply of water becomes available for use by appropriators throughout the length of the stream below the dams. That being the case, if the people of a certain area are in a position to make use of the increased flow, and actually do so, the water users of that area will secure rights to the use of water under the doctrine of prior appropriation, which they would not enjoy if the flow of the stream remained unregulated. The prior appropriation doctrine, applied to interstate streams by *Wyoming v. Colorado*, led representatives of certain Upper Basin states to ask why they should allow water to be stored within their borders when it was practically certain that under the existing legal system their citizens would never be able to acquire the right to use that water, and equally certain that citizens of the Lower Basin states would put such water to beneficial use and thereby acquire rights to its continued use. The issue still remains, and in view of the fact that storage and diversion in one state, for the benefit of another, is a necessary part of a comprehensive and practical scheme for the development of the Colorado, and the fact that relative rights to the use of water in such a situation were not passed upon by *Wyoming v. Colorado*,<sup>55</sup> with the result that individual states remain fearful of permitting such

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*Co. v. Miller & Lux*, (Nev.) 152 Fed., 11, 218 U. S., 258; *Weiland v. Pioneer Irrigation Co.*, (Colo.) 238 Fed., 519.

"However, as has been suggested, the question in its entirety has not been passed upon by the United States Supreme Court and it will be necessary to await the decision in the case of *Wyoming v. Colorado*."—Manuscript in files of Department of Commerce, Washington, D. C.

<sup>54</sup>See Appendix IV, Exhibit A, *Map of the Colorado River Basin*.

<sup>55</sup>The diversion which was protested in the *Wyoming-Colorado* case was a diversion within Colorado for the benefit of Colorado, as is made clear by the italicized phrase of the following quotation from the opinion:

"When this suit was brought, the two corporate defendants, acting under the authority and permission of Colorado, *were proceeding to divert in that state a considerable portion of the waters of the river and to conduct the same into another watershed, lying wholly in Colorado*, for use in irrigating lands more than fifty miles distant from the point of diversion."—259 U. S., 419, 456.

storage or diversion within their borders lest rights to the use of the water thus stored or diverted accrue to citizens of other states, Mr. Bannister is correct in his assertion that state lines have not been obliterated by *Wyoming v. Colorado*. Wherever diversion and storage occurs in one state for the benefit of another, state lines still continue to be of importance in the sense that the legislatures of the respective states will attempt to safeguard the use of all water diverted or stored within their borders, for their own citizens, and will exert every effort to prevent residents of other states from securing superior rights to the use of such water.

This question was discussed at the time that the Compact was drafted. The minutes of the meetings which preceded the phrasing of the final draft, show that the representatives of Arizona, one of the Lower Basin states, urged the inclusion of an article which provided that "where water may be advantageously or economically diverted from the Colorado River in one state for use in another state, or where proper development within the basin requires that water be stored in one state for use in another state such diversion or storage may be made without prejudice to any beneficial use of such water that the latter state may properly make, such diversion or storage shall be permitted."<sup>56</sup> Mr. Sloan, legal adviser of Arizona, stated that he had "had something to do with the suggestion that paragraph ten (the paragraph here mentioned)<sup>57</sup> should be included in the tentative draft."<sup>58</sup> Norviel, also of Arizona, favored the paragraph. On the other hand, Carpenter of Colorado and Emerson of Wyoming, both Upper Basin states, objected to the paragraph. The basis of these divergent views is evident from the discussion which took place in conference.

Sloan's remarks before the Commission show that he believed that there are, in addition to Boulder Canyon, two or three other places within Arizona, that might give rise to situations requiring consent to divert and store water in one state for the benefit of water users of another, in order to remove friction and difficulty of development. This argument was reinforced by the words of Norviel who asserted that he was of the opinion that a provision to the effect that if water might be advantageously or economically diverted from the river in one state for use in another, or where proper development within the

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<sup>56</sup>Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, New Mexico, Thursday, 10 A. M., Nov. 16, 1922, p. 37.

<sup>57</sup>Parenthesis mine.

<sup>58</sup>Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, New Mexico, Thursday, 10 A. M., Nov. 16, 1922, p. 37.

basin requires that water be stored in one state for use in another, and such diversion or storage may be made without prejudice to any beneficial use of such water that the latter state may properly make, such diversion or storage shall be permitted, should be included within the pact in order that the principle therein proposed might be made uniformly applicable to the entire basin.

Carpenter declared that Colorado law specifically provides that no such right of diversion or storage of water in Colorado for the benefit of water users in other states, shall be fastened upon Colorado territory. Then he urged that the principle of *Hudson Water Co. v. McCarter*<sup>59</sup> that whatever a state has she may withhold and need give no man a reason for her will, be applied. Carpenter was of the opinion, also, that each question of diversion and storage in one state for the benefit of another, would involve its own local considerations and should be left to conditions as they develop. Emerson believed that the mandatory language of the paragraph would defeat the entire Compact in Wyoming, and advocated that some plan be adopted whereby the state engineer or other proper official in any state would be authorized to consider an application for diversion and storage within his state although the use might be in another state, and whereby the state official would have the privilege of using his discretion as to whether or not the proposed use of water would be detrimental to the public welfare.<sup>60</sup>

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<sup>59</sup>209 U. S., 349 (1908).

This case will be considered in the discussion of property rights in the use of water, *infra*.

<sup>60</sup>“MR. HOOVER: We now come to paragraph ten. You will recollect paragraph ten has already been a stumbling block. It reads: ‘Where water may be advantageously or economically diverted from the Colorado River in one state for use in another state, or where proper development within the basin requires that water be stored in one state for use in another state, such diversion or storage shall be permitted.’

“MR. CARPENTER: With the addition of the words ‘with previous consent of other states’ there would be no objection to it. The consent of the state is usually given through its legislature.

“MR. CALDWELL: Mr. Chairman, whoever drafted this article, it seems to me, may have had some specific thing in mind which, if it were stated, might help to clarify it somewhat.

“MR. HOOVER: Shall we call upon Judge Sloan?

“MR. SLOAN: I have had something to do with the suggestion that paragraph ten be incorporated in the tentative draft. I conceived that the original suggested draft was wholly inadequate to cover all contingencies and I had in mind the suggestion of a line or two in addition and the reshaping to some extent of the whole article. I suggest that the Commission consider the paragraph as follows: ‘Where water may be advantageously or economically diverted from the Colorado River in one state for use in another state and such diversion or storage may be made without prejudice to any beneficial use of such water that the latter state may properly make, such diversion or storage shall be permitted.’

“MR. CARPENTER: That leaves an open question respecting what will or will

It should now be evident that although certain underlying principles were indicated by the language of the Wyoming-Colo-

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not disturb. If the consent of the servient state is first, that of itself will determine definitely.

"MR. SLOAN: The objection to that, in my judgment, is that such provision would be of no effect,—no use. I apprehend that such consent, if had, would answer every requirement of this provision, but if that consent be withheld, there would be no expression in this compact which would make it the legal or moral obligation of the other state to grant such consent.

"MR. HOOVER: Have you any specific case in mind, Judge Sloan, that will illuminate this proposal.

"MR. SLOAN: Yes sir, two or three cases. Mr. Norviel will perhaps be able to illustrate those better than myself, but for instance if a dam shall be erected at or near Lee's Ferry, storage would necessarily extend into Utah very extensively. It is probably true that such storage would not interfere in the least with the proper use of the Colorado River by the State of Utah, yet, for some reason or another that consent might be withheld. The purpose of this, in respect to that particular situation, would be that there be here now expressed the consent of the State of Utah. The same is true, perhaps, at Boulder Canyon. The dam there and the storage there would be largely in the State of Nevada and partially in the State of Arizona. There are two or three other places within our state that may require such consent in order to remove friction and difficulty of development in the future. Mr. Norviel could give those instances, if they are desired.

"MR. CARPENTER: There are many instances that may occur in the future and of varying types, as varying as the prismatic colors and more so. Each will involve its own local and surrounding conditions and should be left to conditions as they develop. Such a provision would meet with immediate opposition I know in our state. Our law specifically declares that no such right shall exist or be fastened upon our territory. This law was brought about by a series of unfortunate past events which the present generation has not forgotten. But, with the proper adjustment in the first instance, all possible friction may be avoided. In fact, I suggested in the draft that I submitted that no such easements should ever exist until consent had first been obtained. This was for the very purpose of carrying into effect the underlying reason for the creation of this Commission—the establishment of a regular order of doing things and not a method of acting first and quarreling afterwards.

"MR. HOOVER: Would this draft of Judge Sloan's be cured in your mind if it stated such consent should not be unreasonably withheld.

"MR. CARPENTER: No, that leaves still open the question as to what is unreasonable?

"MR. HOOVER: That could be determined by the courts.

"MR. CARPENTER: It is for the local legislatures of the states to determine the matter of reasonableness. As said by Justice Holmes in the case of Hudson Water Company v. McCarter, a state may have reasons that do not appear to the layman or to a technical man. And what she has, she may withhold and ask no man to reason for her will. Collision will be invited. It may be invited by the incorporation of such a provision in this compact. These matters usually arise from a feeling of unnecessary and unusual burdens without any compensation to the areas affected. I can imagine, (but I could not seriously conceive), for example, the state of Utah arbitrarily withholding its consent to the building of a structure at Lee's Ferry, although treated equitably in the whole transaction. But it certainly would have a right to have some consideration before the consent is given. Unless the broad principle will apply over the entire drainage it appears dangerous.

"MR. NORVIEL: That is the reason why I think it ought to be in this compact. Then it covers the whole basin. Just as Mr. Carpenter says to go before the legislature with a specific instance to ask for such a thing as we suggest in this paragraph, would probably meet at once with a refusal. We can see his stand-

rado case, the most recent declaration of the Supreme Court on questions related to those which form part of the problem of

point,—seated as his state is on the top of the hill where there is no drainage into the state, all drainage out of the state, and, as he says where his state has a specific law preventing anyone from interfering beyond their state line in just such cases as this. Yet we can see perhaps how it would be better for all of the other states and wouldn't hurt Colorado if this very provision was incorporated within this pact. In fact, I think it is a very important bit of legislation that should be included in the pact and accepted. I see no reason why it should not be accepted by Colorado.

"MR. EMERSON: Mr. Chairman, as long as this paragraph is mandatory as it is now by the phraseology, it wouldn't stand any possible show of being adopted by Wyoming, and would defeat the entire compact. It seems to me the main purpose would be served if we adopt some plan for authorization whereby the state engineer or other proper official in any state would be authorized to consider an application for the diversion within his state although the use might be in another state, and whereby he would have the privilege of using his discretion as to whether or not the proposed use of water would be detrimental to the public welfare. Under such plan he would have discretion to act upon the application according to the interests of his state.

"I have in mind the reciprocity agreement now existing between the State of Wyoming and the State of Utah, whereby either state engineer is authorized to receive applications for interstate use and to consider them upon their merits. Wyoming would not be willing to go any further. For instance, we have a series of lakes at the head of the Green River, at the very headwaters of the Colorado. The State of Wyoming would not want to be in a position whereby she would have to allow the use of those lakes as reservoir sites for the use of water without the state. I might also apply a situation we have upon the Snake River. I have, during my term of office, granted two permits for the conservation and storage of water in Wyoming for use in Idaho and I have been subjected to very considerable criticism by reason of allowing those permits. It is simply prejudice against anything of that kind. Unfortunately it does exist. So that while we might incorporate the reciprocity measure so to speak, in this compact, and authorize the proper official of any state to give fair consideration to an application, I do not believe that we can go any further. We certainly cannot agree to a mandatory clause.

"MR. NORVIEL: Wouldnt' it be better for you, providing you were to remain State Engineer of Wyoming for all times, if you had such a clause as this? You would not then be subject to criticism when giving such permission.

"MR. CARPENTER: The consent of a state may be granted either by specific legislation directed to one structure or one item, or it may be granted through general legislation giving to some official the right to exercise a discretion. Now, that matter will work itself out as time proceeds and the danger of coming into collision should be avoided, it seems to me, by language the very opposite of this provision and requiring that very concurrence. For example, take the Flaming Gorge Reservoir,—Mr. Norviel's state may be eliminated for the time being. The State of Wyoming might well say to the State of Utah that while the dam site is in Utah the great body of the reservoir is in Wyoming and in the matter of claim to some part of the power from that reservoir we feel we should be treated equitably; it is in part our resource. Proceeding upon the same theory the Federal Power Commission, with respect to public lands, may withhold certain lands and make certain conditions running with the grant to use those lands. Both States might wish to be considered in the distribution of financial returns, electric energy and many other items involved in the erection of a dam between here and Arizona, and it becomes merely a localized problem in which there are two states involved and it is up to those two states to work out their differences in their own way. It is not in the power of one of the states from the North to go down and regulate the situation between Arizona and Nevada. Neither should it be within their power to come up and tell Wyoming and Utah what they shall do at Flaming Gorge. All can be handled either by specific

Colorado River development, that case was by no means adequate to provide a sufficient degree of certainty in the law to warrant uninterrupted progress in the improvement of this natural resource. Perhaps its greatest deficiency lies in the fact that it did not involve issues presented by storage and diversion of water in one state for use in another. The physical features of the Colorado make such storage and diversion essential.

The hope of the framers of the Compact was that the language of that instrument, the entire agreement but particularly the words which already have been quoted, would provide a basis for the determination of disputes in the Colorado River area in situations not covered by existing statutory and case law.<sup>61</sup> The ordinary rules of prior appropriation were to be supplemented by provisions definitely agreed upon by the states concerned. But it is evident that although there was general agreement that the use of water gives rise to a right to its continued use, which will be protected by the state as the instrument of politically organized society, the records of the deliberations of the Commission, and other data, afford ample evidence that there was a material diversity of opinion as to the source of the right to use the water of interstate streams.<sup>62</sup>

"There are two theories that are pertinent to this discussion," declared Mr. Hamel, Chief Counsel of the Reclamation Service. "One is that the right to the use of water from innavigable streams in the arid West arises from the state; that the appropriator gets his right from the state. The other theory is that the right comes from the federal government; that the federal government still owns all of the unappropriated innavigable water of the arid West, and, therefore, has the power to dispose of it."<sup>63</sup>

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legislation on each item or by general laws such as obtain in most states, but not in my own."—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, New Mexico, Thursday, 10 A. M., Nov. 16, 1922, pp. 36-43.

<sup>61</sup>Reference is made to the seven major purposes enumerated in the Compact, Article I. See Appendix II, A.

<sup>62</sup>See Appendix II, Exhibit MM, *Protection to Upper Basin States by Provisions in Federal Legislation*, 4. *The Hamel-Bannister Controversy*.

<sup>63</sup>*Hearings*, H. R. 2903, Part V, p. 882, March 25, 1924.

The law of water rights is treated in the following: Weil, Samuel C. *Water Rights in the Western States*, 3d ed., 2 vols., San Francisco, 1911; Bannister, L. Ward, *Outline of a Course on Water Rights under the Appropriation System*, Harvard Law School, 1923-1924, Fifth Edition, 1923.

Attention should also be directed to certain articles by Mr. Bannister in the Harvard Law Review. They are: *Interstate Rights in Interstate Streams in the Arid West*, June, 1923; *The Question of Federal Disposition of State Waters in the Priority States*, Jan., 1915. These are reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1949-1974, May 17, 1924.

See, also, Appendix II, Exhibit MM, *Protection to Upper Basin States by Provisions in Federal Legislation*.

Mr. Bannister's letter as president of the Denver Chamber of Commerce to Honorable E. O. Leatherwood, a member of the Committee on Irrigation and Reclamation, House of Representatives, in answer to Mr. Leatherwood's letter submitting certain testimony of Chief Counsel Hamele of the Reclamation Service, put the matter in a little different way. Mr. Bannister said that there are two possible assumptions: first, that the federal government had no riparian rights prior to statehood but only political power over the streams that are now within the states; and second, that the federal government owned riparian rights prior to statehood. With respect to the first he wrote that it seemed quite clear that a provision to the effect that water rights should be appurtenant to the land, is a provision for a state legislature and not for the Congress to enact, "although, of course, the provision in an Act of Congress could be given effect in a territory as distinguished from a state," and with respect to the second he declared that even though it be assumed that the federal government owned riparian rights prior to statehood "it is not at all certain that it is for the Congress rather than the State to say that appropriation rights carved out of these preexisting riparian rights shall be appurtenant to—in other words, legally inseparable from—the lands upon which the appropriation rights are first used."<sup>64</sup>

These different theories are of more than academic interest because any scheme for the development and control of the stream must be based upon, or at least sanctioned by, governmental action. Is such action to be that of the state or of the federal government? What are the limits of the jurisdiction of the respective governmental entities? Thus, the question of the origin of the right to use the water, whether it exists by reason of the power and authority of the state or of the federal government, strikes at the heart of the problem of effective administration of this natural resource.

We will first examine the theory that the right to the use of water from innavigable streams arises from the state. "Rights to water secured through the prior appropriation system are the product of the exercise of the political power of the state, and are vested in the appropriator for the first time, without ever having been owned by anybody else, not even by the (federal) government,"<sup>65</sup> according to Mr. Bannister, leading exponent of this doctrine. "The state exercises political power over all the waters within its boundaries and upon appropriation creates property

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<sup>64</sup>*Hearings*, H. R. 2903, Part V, p. 904, March 25, 1924.

<sup>65</sup>*Ibid.*, Part I, p. 185, Feb. 20, 1924.

rights in the appropriators. An appropriation right is a property right."<sup>66</sup>

It was undoubtedly in accordance with this theory that the constitutions of many Western states came to include provisions similar to that of Colorado in which it is asserted that, "The water of every natural stream, not heretofore appropriated, within the State of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided."<sup>67</sup> But although these words appear significant, they are of no material importance. "Let it be remembered," wrote Mr. Bannister, "that other states within the Colorado River Basin and elsewhere in the arid West where interstate streams exist, have substantially similar provisions in their respective constitutions and with such constitutions were admitted into the Union. It would be impossible to give effect to these conflicting constitutions assuming that these constitutional provisions are to be construed as literally meaning that the waters in each state belong to the state in which they are found without regard to other states upon the same stream system."<sup>68</sup>

This theory of a relatively high degree of authority of a state over its water resources finds frequent expression. Judge D. L. Cunningham, formerly a member of the Arizona Supreme Court,

<sup>66</sup>Bannister, L. Ward, Colorado River Commission, *Hearings*, State Senate Chamber, Denver, p. 146, March 31, 1922.

<sup>67</sup>These words are in Art. XVI, Sec. 5 of the Colorado constitution. Colorado River Commission, *Hearing*, State Senate Chamber, Denver, March 31, 1922, p. 135, 138. *Memorandum of Remarks of L. Ward Bannister*.

<sup>68</sup>Colorado River Commission, *Hearing*, State Senate Chamber, Denver, March 31, 1922, p. 138, *Memorandum of Remarks of L. Ward Bannister*.

Testimony adduced before the Commission indicates that this provision of the constitution was regarded as a dead letter. Two examples may be given.

"The very fact that the Supreme Court affirmed its jurisdiction between Kansas and Colorado, asserts that there is a higher power than Colorado over the waters arising within Colorado and flowing out. It is true that Colorado may in its constitution say that the waters belong to the people of the State of Colorado but another state through which the stream flows, may dispute that claim and over that very particular a dispute may arise between the states of which the Supreme Court of the United States has jurisdiction."—Miller, M. O., Judge of County Court, Mesa County, Colo. Colorado River Commission, *Hearing*, Grand Junction, March 29, 1922, p. 123.

"Gov. MECHEM: (New Mexico) The statement that the waters belong to the state was primarily put in this constitution in order to carry out the idea of rights being obtained by beneficial application and has nothing to do with the ownership by the state as against another state.

"MR. MILLER: My opinion about that declaration is that the people of the State of Colorado have the power to regulate waters within the state as long as they are within the state. They lose control of the waters when they pass over the boundary of the state line, and that isn't true of sheep, cattle, or anything else, you still own them when they get over the state line."—Colorado River Commission, *Hearing*, Grand Junction, March 29, 1922, p. 128.

and more recently an attorney for the Arizona High Line Reclamation Association, addressed a letter to the association president in which he declared, "It is a self-evident proposition that no municipal corporation having its existence outside of Arizona is authorized to appropriate public waters of Arizona's streams for use outside of Arizona. To permit such an act would be to recognize the right of outsiders to appropriate real estate to uses beyond the control of the laws of this State, and thereby surrender State control over the public waters so appropriated, to the municipality existing under the laws of another State. Such municipality would be governed by the laws of the other State, and thereby the laws of the other State would be made to operate within Arizona paramount to the laws of Arizona, and Arizona's sovereignty would in a measure be supplanted."<sup>69</sup> Similarly, Carpenter of Colorado asserted, "If it were true that the State of Colorado were an independent nation, the State would have the inherent right of absolute dominion over that entire water supply (from sixty to seventy per cent of the waters that pass Yuma, Arizona, which originate in the mountains of the State of Colorado), except as voluntarily limited by agreement or treaty with other nations. . . . Under the international theory, if it were possible for Colorado to make beneficial use of the waters of that river which rise within her territory and wholly to consume the same, if need be, it could legally deprive the lower river of that water with impunity, except only as to such part thereof as it might voluntarily yield. But fortunately, nature has here decreed that no such condition may ever arise."<sup>70</sup>

Among the considerations which enter into the determination of whether or not the advocates of a relatively large degree of state authority over the water of the Colorado, are justified in

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<sup>69</sup>*Los Angeles Times*, June 23, 1925.

Making the application of the principle cited, Judge Cunningham stated that it was his opinion, "from the authorities cited, and from the general laws of nations, that the great city of Los Angeles cannot exercise any powers for any purpose within the boundaries of Arizona, and the attempt threatened in the recent bond election to raise a great sum of money to provide water for that city from the Colorado River will limit that city to the west side of the mid-channel of the Colorado River from a point on the river north of Needles to the southern boundary of that State, and it cannot pass the said line into Arizona territory otherwise than by grant from Arizona, through a compact regularly negotiated by those States and approved by Congress." *Ibid.*

<sup>70</sup>Colorado River Commission, *Seventh Meeting*, Department of Commerce, Washington, Jan. 30, 1922, 2:30 p. m., p. 108.

Mr. Carpenter cited the opinion of Mr. Judson Harmon, 21 Opinions of the Attorney General 274, 280-283, as a definition of the right of a nation to the exclusive enjoyment of waters within its borders, notwithstanding prior appropriations in lower nations. In this connection see *United States v. Rio Grande Dam and Irrigation Co.*, 174 U. S., 690, 43 L. Ed., 1136.

their assertions, is the question of the navigability of this stream. Article I, Section 8, clause 3, of the Constitution of the United States provides that the Congress shall have power "to regulate commerce with foreign nations, and among the several States, and with the Indian tribes." The case of *Gibbons v. Ogden*<sup>71</sup> is authority for the statement that the commerce clause grants the right to regulate transportation of persons and property by land and water and the means and appliances necessary in carrying it on, and specifically that it includes the right to regulate navigation.<sup>72</sup>

But is the Colorado River a navigable stream? Prior to 1860 it had been asserted that that quality of the river had been "thoroughly tested." On May first of that year, First Lieutenant J. C. Ives, then in command of the Colorado Exploring Expedition, wrote to Captain A. A. Humphreys, in charge of the Office of Explorations and Surveys of the War Department, that, "The outbreak among the Mojave Indians, and the consequent movement of troops into their territory, caused the navigability of the Colorado, at different seasons of the year, to be thoroughly tested."<sup>73</sup> He stated that the result had been beyond his most sanguine estimate, and that the round trip between the head of the Gulf and the Mojave villages, which were 425 miles from the mouth of the Colorado and but 75 miles from the point which he thought should be regarded as the practical head of navigation, had been made in eight days. His letter continued: "I would again state my belief that the Colorado would be found an economical avenue for the transportation of supplies to various military posts in New Mexico and Utah. It may be in-

<sup>71</sup>Wheat., 185.

<sup>72</sup>Grimshaw, Ira L. *Legal Statement on Problems of St. Lawrence River Development*, Feb., 1925.

The following cases are cited as authority: *United States v. Coombs*, 12 Peters, 72; *Cooley v. Port Wardens*, 12 Howard, 299; *Smith v. Turney*, 7 Howard, 283; *Gilman v. Philadelphia*, 3 Wallace, 713, 724; *Chicago etc. R. Co. v. Fuller*, 84 U. S., 560; *Henderson v. N. Y.*, 92 U. S., 259; *Lord v. Ship Company*, 102 U. S., 541; *County of Mobile v. Kimball*, 102 U. S., 691, 702; *Gloucester Ferry Co. v. Pennsylvania*, 114 U. S., 196; *McCall v. California*, 136 U. S., 104; *Addyston Pipe Co. v. United States*, 175 U. S., 211; *Williams v. Fears*, 179 U. S., 270; *Lottery cases*, 188 U. S., 321; *Philadelphia Co. v. Stimson*, 223 U. S., 605; *Hammer v. Dagenhart*, 247 U. S., 272; *Lewis Blue Point Oyster Co. v. Briggs*, 229 U. S., 82; *Dayton-Goose Creek Ry. Co. v. United States*, 263 U. S., 456.

At the time of the preparation of this brief, Mr. Grimshaw was Assistant Solicitor, Department of Commerce. A practicing attorney of fifteen years' experience, he had served in New Mexico as Assistant District Attorney, Assistant Attorney General, Commissioner of the Supreme Court, Member of the Board of Bar Examiners, etc.—Letter of Sept. 5, 1925.

<sup>73</sup>*Report upon the Colorado River of the West, Explored in 1857 and 1858*, Thirty-sixth Congress, First Session, House Executive Document, Vol. 14, No. 90, Serial No. 1058, p. 131, 154. (By order of John B. Floyd, Secretary of War.)

stanced that the amount of land transportation saved by adopting this route would be: to the Great Salt Lake, 700 miles; to Fort Defiance, 600 miles; and to Fort Buchanan, 1,100 miles."<sup>74</sup>

The question of the navigability of the Colorado was touched upon in the annual report of the Governor of Arizona for 1894. Directing the attention of the Committee on Irrigation and Reclamation of the House of Representatives to a portion of this report, Representative Hayden said, "In connection with the question of navigation, I have here the annual report of the Governor of Arizona for 1894, and I should like to direct attention to a brief extract, found on page 58. The governor at that time was Louis C. Hughes. He states:

"The following from Capt. J. A. Mellon, who has seen 30 years' service on the river, may prove instructive:

"The Colorado has been navigated continuously since 1852 by steamers, those now in use being 150 feet keel by 30 feet beam and measure 240 tons, drawing 20 inches without load, and will carry 10 tons for every inch you sink them; we also tow a barge which will carry 150 tons on 2 feet of water. The old steamers formerly used were only 90 feet long by 24 feet beam. The river is navigable for 465 miles from its mouth at all seasons or, in other words, to Fort Mohave. During the summer we can go 140 miles farther to Rioville, where the Virgin empties into the Colorado, making 605 miles of waterway.

"During the winter or low-water season, the last 140 miles is impassable on account of boulders in the channel and cobblestone bars, which, with a little Government aid, could be removed and the river made navigable at all seasons for over 600 miles from its mouth. This would open a way for the farmers of the Virgin and Muddy valleys to market their crops; the salt deposits on the Virgin could be worked and the sulphur and gypsum of the Black Canyon would be made valuable."<sup>75</sup>

An examination of the records yields further data concerning the question of navigability. In April of 1904 Mr. Harrison Gray Otis of Los Angeles addressed a letter to President Roosevelt pointing out that as the United States had used the river for years for the transportation of supplies to Port Mohave in Arizona, it was in law a public navigable stream.<sup>76</sup> In the 1922 sessions of the Commission held for the purpose of drafting the

<sup>74</sup>*Report upon the Colorado River of the West, Explored in 1857 and 1858*, Thirty-sixth Congress, First Session, House Executive Document, Vol. 14, No. 90, Serial No. 1058, p. 131, 154. (By order of John B. Floyd, Secretary of War.)

<sup>75</sup>*Hearings*, H. R. 2903, Part IV, pp. 575-576, March 14, 1924.

<sup>76</sup>Mimeographed copy of letter, Harrison Gray Otis to President Roosevelt,

Colorado River Compact, Mr. Scrugham, Nevada, asserted that in the early days there was considerable navigation from the mouth up to Black Canyon. Reference was made to the transportation of mining machinery by this route prior to the construction of railroads.<sup>77</sup> Chairman Hoover in his letter to the House of Representatives transmitting his report of the proceedings of the Colorado River Commission and the text of the Compact, definitely stated the finding of navigability.<sup>78</sup> But lest anyone should gain the impression that there is any degree of definiteness in the matter of the navigability of this stream, a news item from Washington dated February 14, 1925, declared

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April 9, 1904, in files of Chairman Hoover of the Colorado River Commission, office of the Secretary of Commerce, Washington, D. C.

The following paragraph shows the importance which Mr. Otis attached to the Colorado as a means of transportation:

"From the Southern Pacific Railroad at Yuma northerly to the Santa Fe Railroad at the Needles, over an air line of about 75 miles along the boundary between California and Arizona in the United States, and between Lower California and Sonora in Mexico, the Colorado River is the only means of transportation other than by pack animals or by horses and wagons for the supplies and products of the pioneer farmers, stockmen and miners who are developing the country."

<sup>77</sup>Colorado River Commission, *First Meeting*, p. 43, Department of Commerce, Washington, Jan. 26, 1922.

The following remarks give an insight into the decline of navigation leading to the purchase of the steamboats by the federal government:

"MR. CALDWELL: May I ask what effect the construction of the Laguna dam has on the navigation of the river?"

"MR. DAVIS: It was authorized by the Act of Congress due to the fact that the river was navigable and it actually stopped navigation. It is not possible to navigate past the dam. At that time there were, I believe, three boats plying on the Lower Colorado River and it had been for a long time a navigable stream and the commerce had been considerable at one time. It is gradually declining on account of the railroads tapping many points and being much more accessible for the transportation necessary and now Laguna Dam is a stop to navigation. Navigation is possible above and below but not through the dam . . . As a practical fact Laguna Dam is the diversion for the Yuma project and the Imperial Valley project and it has destroyed practical navigation below. Every use of the water for irrigation depleted the supply. The navigation of the river was one of the problems that we had to meet and following the Act of Congress, all trouble was overcome by the purchase of the steamboats on the river by the government. The operation of these boats had become unprofitable for there had been no profit in navigation for a good many years; the boats were old and no new ones were put into commission. They were used for construction purposes and finally were put out of service."—Colorado River Commission, *First Meeting*, pp. 43-44, Department of Commerce, Washington, Jan. 26, 1922.

Whenever a "Mr. Davis" is mentioned in connection with the meetings or hearings of the Colorado River Commission, the person designated is Mr. S. B. Davis, Jr. of New Mexico, a member of the Commission. Whenever Mr. A. P. Davis is intended, the initials will be used. The latter was not a member of the Commission but testified before that body on numerous occasions.

<sup>78</sup>"Many years ago the navigation of the Colorado River was possible and was actually carried on from the mouth of the river to points in what is now the State of Nevada. As late as 1904 there were still some boats engaged in transportation upon the lower reaches of the river. In 1901 the first large diver-

that on that day "the Senate Committee on Commerce included an amendment in the river and harbor bill authorizing the War Department through the Board of Engineers on Rivers and Harbors to make a preliminary survey and report on the navigability of the Colorado River."<sup>79</sup>

Legal navigability depends upon navigability in fact. As Mr. Justice Van Devanter of the Supreme Court phrased it in *Oklahoma v. Texas* in 1922, "navigability in fact is the test of navigability in law."<sup>80</sup> But when are rivers "navigable in fact"? What is the test of navigability in fact? The words already quoted from the opinion in *Oklahoma v. Texas*, afford the

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sion from the lower stream system, that to the Imperial Valley, began, and this, with other developments in the basin, necessarily depleted the supply for navigation below that point.

"In 1904 Congress passed an act (33 Stat. 224, Sec. 25) authorizing the Secretary of the Interior to divert the waters of the Colorado River for the irrigation of lands now constituting the Yuma irrigation project. Under this authority there was constructed shortly thereafter what is known as the Laguna Dam, a large dam across the channel of the river a short distance above Yuma. This dam now effectually prevents any navigation of the river between points above and below.

"Prior to the construction of this dam the operation of boats on the river had become unprofitable, there having been no navigation for several years. The boats then in service were old. They were purchased by the Government, used in connection with the construction of the dam, and then put out of service. While there is an occasional period of high water when navigation may be physically possible, this would continue for only a few months in ordinary years. There is no commercial navigation upon the river at present.

"Gen. Lansing H. Beach, Chief of Engineers of the United States, War Department, in testifying before the commission said:

"While the lower Colorado did have some navigation on it in the seventies, there is nothing on it to-day to justify navigation being regarded as of foremost importance."

"Later in his testimony he stated that he considered the river navigable as far as the mouth of the Gila.

"These facts are the basis for the declaration in the compact that 'the Colorado River has ceased to be navigable for commerce'."—House of Representatives, Document No. 605, *Colorado River Compact—Letter from the Chairman of the Colorado River Commission, transmitting Report of the Proceedings of the Colorado River Commission and the Compact or Agreement entered into between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the Apportionment of the Waters of the Colorado River*, Sixty-seventh Congress, Fourth Session, pp. 3-4.

"It (the Compact) does not declare it non-navigable or unnavigable, but that it 'has ceased to be navigable for commerce'."—*Hearings*, H. R. 2903, Part IV, p. 574, March 14, 1924.

<sup>79</sup>Los Angeles Times, *Plans Survey of Colorado*, Feb. 15, 1925.

<sup>80</sup>"We find nothing in any of the matters relied on which takes the river in Oklahoma out of the settled rule in this country that navigability in fact is the test of navigability in law, and that whether a river is navigable in fact is to be determined by inquiring whether it is used, or is susceptible of being used, in its natural and ordinary condition as a highway for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. The Daniel Ball, 10 Wall. 557, 563; The Montello, 20 Wall. 430, 439; United States v. Rio Grande Co., 174 U. S. 690, 698; United States v.

answer as given by an extended line of cases—"whether a river is navigable in fact is to be determined by inquiring whether it is used, or is susceptible of being used, in its natural and ordinary condition as a highway for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water."<sup>81</sup>

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Cress, 243 U. S. 316, 323; *Economy Light and Power Co. v. United States*, 256 U. S. 113, 121."—*Oklahoma v. Texas*, 258 U. S., 574, 586.

The first time that the phrase, "susceptible of being used", was employed in a Supreme Court case, is said to have been that of the *Daniel Ball*.

"The first case, defining navigable waters under the Constitution, to add the phrase 'or susceptible of being used' in interstate or foreign commerce was the *Daniel Ball* (10 Wall. 557). The significance of the words 'susceptible of being used' was the fact that many navigable streams were not used to carry interstate and foreign commerce because the country had not been sufficiently developed to create any commerce. The shores, the soil under all waters in the state, and the water itself remain vested in the state, subject only to the jurisdiction of the United States to regulate interstate or foreign commerce on the navigable waters. (*Pollard's Lessees v. Hagan*, 3 How. 212.) Thus, the United States has no control or jurisdiction of streams or parts of streams not used, and not susceptible of being used, in their natural state for interstate or foreign commerce; the control, or jurisdiction thereof being reserved to the state, or its people, under the Tenth Amendment. Likewise, the non-navigable headwaters of a navigable stream are solely under the sovereignty of the state wherein situate. This does not mean, however, that the waters of the non-navigable headwaters could be diverted to the extent of lessening the navigability of water below used in interstate or foreign commerce. (*Kansas v. Colorado*, 206 U. S. 46; *U. S. v. Rio Grande, etc., Co.*, 174 U. S. 690.)—Shields, John Franklin, *The Federal Power Act*, 73 *University of Pennsylvania Law Review and American Law Register* 142, 147-148, Jan., 1925.

<sup>81</sup>*Oklahoma v. Texas*, 258 U. S., 574, 586.

The following memorandum was supplied to the Committee on Irrigation and Reclamation, House of Representatives, on the subject of determining navigability of streams.

"NAVIGABLE WATERS AS DEFINED BY THE SUPREME COURT OF THE UNITED STATES.

"The *Daniel Ball* (10 Wall. 557).—A river is navigable in law when it is navigable in fact, and it is navigable in fact when it is used or is susceptible of being used in its ordinary condition as a highway for commerce over which trade and travel may be conducted in the customary modes of trade and travel on water.

"A river, or other waterway, that lies wholly within the limits of a State, and has no navigable connection with any waters outside the boundaries of the State, is a navigable water of the State, subject to regulation and control by State laws and does not come within the jurisdiction of Congress nor of the laws enacted by Congress for the preservation and protection of navigable waters of the United States.

"A river, or other waterway, constitutes a navigable water of the United States, within the meaning of the aforesaid acts of Congress, when it forms by itself or by uniting with other waters a continuous highway over which trade and travel is or may be conducted between the States themselves, or between the States and foreign countries.

"The *Montello* (20 Wall. 430).—The true test of the navigability of a stream does not depend upon the manner or mode by which commerce is or may be conducted, nor upon the difficulties attending navigation. If this were so, the public would be deprived of the use of many of the large rivers of the country over which rafts of lumber of great value are constantly taken to market. It would be a narrow rule to hold that in this country unless a river was capable

The material set forth in the note to the preceding paragraph suggests some of the limitations to which the definition of navig-

of being navigated by steam or sail vessels it could not be treated as a public highway.

"The capability of use by the public for purposes of transportation and commerce affords the true criterion of the navigability of a river, rather than the extent and manner of that use. If it be capable in its natural state of being used for purposes of commerce, no matter in what mode the commerce may be conducted, whether in vessels propelled by steam, wind, cars, or poles, the stream is navigable in fact, and becomes in law a public highway.

"21 Pickering, 344.—It is not to be understood, however, that every ditch or inlet in which the tide ebbs and flows, nor every small creek in which a fishing skiff or gunning canoe can be made to float at high water, is a navigable highway; but to give it the character of a navigable stream it must be generally and commonly useful to some purpose of trade or agriculture.

"Decision by United States Circuit Court of Appeals.

"Harrison v. Fite (148 Fed. 781).—To meet the test of navigability as understood in American law a watercourse should be susceptible of use for purposes of commerce or possess a capacity for valuable floatage in the transportation to market of the products of the country through which it runs. It should be of practical usefulness to the public as a public highway, in its natural state and without the aid of artificial means. A theoretical or potential navigability, or one that is temporary, precarious or unprofitable is not sufficient. While the navigable quality of a watercourse need not be continuous, yet it should continue long enough to be useful and valuable in transportation; and the fluctuations should come regularly with the seasons, so that the period of navigability may be depended upon. Mere depth of water, without profitable utility, will not render a watercourse navigable in the legal sense, so as to subject it to public servitude nor will the fact that it is sufficient for pleasure boating or to enable hunters or fishermen to float their skiffs or canoes. To be navigable a watercourse must have a useful capacity as a public highway of transportation."—*Hearings*, H. R. 2903, Part II, p. 298-299, Feb. 27, 1924.

Mr. O. C. Merrill, Executive Secretary of the Federal Power Commission, discussed the words "navigable waters" as used in the Federal Water Power Act, in a letter to the Chairman of the House Committee on Irrigation and Reclamation.

"Federal Power Commission,  
Washington, February 27, 1924.

"Hon. Addison T. Smith,  
Chairman Committee on Irrigation and Reclamation,  
House of Representatives.

"Dear Mr. Smith:

"I have received your letter of February 21, 1924, in which you state that the Committee on Irrigation and Reclamation are considering a matter of importance involving the navigability of the Colorado River, and desire advice as to whether any decision has been rendered that defines what the word 'navigable' means as applied to streams.

"The words 'navigable waters' are defined in the Federal water power act for the purposes of administration of that act; that is, for the purpose of determining the jurisdiction of the Federal Power Commission. The definition is as follows:

"'Navigable waters' means those parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition, notwithstanding interruptions between the navigable parts of such streams or waters by falls, shallows, or rapids, compelling land carriage, are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids, together with such other parts of streams as shall have

ability is subject. Difficulties arise in determining what are the "customary modes of trade and travel on water." As particular

been authorized by Congress for improvement by the United States or shall have been recommended to Congress for such improvement after investigation under its authority.'

"Whether a stream has been recommended for improvement or improvement has been authorized or actually made is a simple question of fact. Whether it is used in the transportation of persons or property in interstate or foreign commerce is also a question of fact which may be determined upon investigation. Whether, if not so used, it is suitable for such use is a matter of judgment, and decision must rest both upon the character of the stream and upon the probability of the development of commerce in sufficient amount to justify a finding that it is suitable for such use. In reaching such decision the commission is guided by the decisions of the courts relative to the jurisdiction of the Federal Government under the commerce clause of the Constitution over streams as highways of commerce.

"At common law all waters affected by the ebb and flow of the tide were regarded as navigable, and the decisions of the courts in this country uniformly hold all such waters to be navigable in law. Above the ebb and flow of the tide the test by which to determine the navigability of waters in our rivers is found in their navigable capacity. Those rivers are navigable rivers in law which are navigable in fact—that is, when they are used or are susceptible of being used in their ordinary condition as highways for commerce—on which trade and travel are or may be conducted in the customary modes of trade and travel on waters; and they constitute 'navigable waters of the United States' in contradistinction from navigable waters of the States when they form in their ordinary condition by themselves or by uniting with other waters a continued highway over which commerce may be carried on with other States or foreign countries in the customary modes in which such commerce is conducted by water. The following decisions may be cited as supporting this statement: *The Daniel Ball* (10 Wall. 557); *the Montello* (11 Wall. 411); *Ex parte Boyer* (109 U. S. 629); *Chisholm v. Caines* (67 Fed. 285); *St. Anthony Falls Water Power Co. v. Water Commissioners* (168 U. S. 349); *Leovy v. U. S.* (177 U. S. 621). Statutes passed by the States for their own uses declaring small streams navigable do not make them so within the Constitution and laws of the United States. (See *Duluth Lumber Co. v. St. Louis Boom & Improvement Co.*, 17 Fed. 419). In *Economy Light & Power Co. v. United States* (256 U. S. 113; 41 S. C. R. 409) it was held that the Desplaines River having been used as a channel for commerce, although such commerce was carried on by means of comparatively small boats of light draft, was a navigable water of the United States within the meaning of the laws enacted by Congress for the protection of such waters from unlawful obstructions, notwithstanding the fact that numerous bridges have been constructed thereover which prevent its present use as a channel for commerce. In *United States v. Cress and United States v. Kelly* (243 U. S. 316; 37 S. C. R. 380) the court held that the 'servitude of privately owned lands forming the banks and bed of a stream to the interests of navigation is a natural servitude, confined to such streams as in their ordinary and natural condition are navigable in fact, and confined to the natural condition of the stream.'

"So far, therefore, as a rule can be gathered from the decisions of the courts, those streams are navigable in law which are navigable in fact—that is, when they are used or are susceptible of being used as channels for commerce in whatever mode such commerce is or may be carried on. The word would include streams which are used or useful for commerce by rafts or logs where commerce of that character exists.

"There is no rule by which, in all instances, it can be automatically determined whether a stream is or is not navigable. In many instances under the definition of the Federal water power act decision is a matter of judgment on the part of the commission. Similarly, under the general rule of the courts, as above stated, determination must rest in many individual cases upon the

instances arise, the courts will apply the law. However, as stated by Executive Secretary Merrill in his letter to Mr. Smith which already has been quoted, "There is no rule by which, in all instances, it can be automatically determined whether a stream is or is not navigable. In many instances under the definition of the Federal water power act decision is a matter of judgment on the part of the commission. Similarly, under the general rule of the courts . . . . determination must rest in many individual cases upon the judgment of the court, reached after a consideration of all the facts in the particular case before it."<sup>82</sup> Accordingly, as Mr. Merrill pointed out, it was held in *Economy Light and Power Co. v. United States*<sup>83</sup> that the Desplaines River, having been used as a channel for commerce, although such commerce was carried on by means of comparatively small boats of light draft, was a navigable water of the United States within the meaning of the laws enacted by Congress for the protection of such waters from unlawful obstructions, notwithstanding the fact that numerous bridges had been constructed thereover which prevented its use as a channel for commerce.

On this view of the authorities and the facts pertaining to the use of the Colorado for navigation purposes in the past, it would seem that a substantial case might be made out by those who combat the theory that the states hold a relatively high degree of authority over the Colorado. It will be well, therefore, to examine in detail the position of leading disputants representing the diverse points of view.

A part of the first phase of the Hamele-Bannister controversy is directly applicable here.<sup>84</sup> Mr. Hamele asserted the proposition that the federal government has superior rights over

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judgment of the court, reached after a consideration of all the facts in the particular case before it . . .

Very truly yours,

O. C. Merrill, Executive Secretary."

—*Hearings*, H. R. 2903, Part VIII, pp. 1897-1899, May 17, 1924.

<sup>82</sup>*Ibid.*

<sup>83</sup>256 U. S., 113, 41 S. Ct. Rep., 409.

<sup>84</sup>The third phase, already discussed, involved the question of whether or not the Wyoming-Colorado decision in effect obliterated state lines.

The first and second phases of the Hamele-Bannister controversy raise the question of the source, whether federal or state, of rights in the use of water. Specifically, the first phase raises the question of federal or state source of rights to the use of water, and the second phase raises the question of whether or not an Act of Congress might apportion the water among the respective states. The part of the first phase of the controversy which is now being discussed deals with the extent of federal control of unappropriated water in navigable interstate streams.

In outline form, the Hamele-Bannister controversy may be set forth as follows:

navigable streams and may prevent destruction of navigability.<sup>85</sup> To this Mr. Bannister replied: "This is true, but let us remember that the only superiority given by the fact that the stream is navigable consists in the power to protect navigability and that any and all other power with respect to a navigable stream is in the State."<sup>86</sup> He then proceeds to make application of this principle to the construction of the proposed Boulder Canyon

#### HAMELE-BANNISTER CONTROVERSY.

1. Federal or state source of rights to the use of water in navigable interstate streams.

a. Extent of federal control of unappropriated water in navigable interstate streams.

2. May an Act of Congress apportion the water of the Colorado River among the states?

3. Did the Wyoming-Colorado decision in effect obliterate state lines?

<sup>85</sup>This is set forth as a limitation upon the power of a state to change the common law rule as to streams within its borders, in the case of *United States v. Rio Grande Dam and Irrigation Company*.

"The unquestioned rule of the common law was that every riparian owner was entitled to the continued natural flow of the stream . . . While this is undoubted, and the rule obtains in those States in the Union which have simply adopted the common law, it is also true that as to every stream within its dominion a State may change this common law rule and permit the appropriation of the flowing waters for such purposes as it deems wise. Whether this power to change the common law rule and permit any specific and separate appropriation of the waters of a stream belongs also to the legislature of a Territory, we do not deem it necessary for the purposes of this case to inquire. We concede *arguendo* that it does.

"Although this power of changing the common law rule as to streams within its dominion, undoubtedly belongs to each State, yet two limitations must be recognized: First, that in the absence of specific authority from Congress a State cannot by its legislation destroy the right of the United States, as the owner of lands bordering on a stream, to the continued flow of its waters; so far at least as may be necessary for the beneficial uses of the government property. Second, that it is limited by the superior power of the General Government to secure the uninterrupted navigability of all navigable streams within the limits of the United States. In other words, the jurisdiction of the General Government over interstate commerce and its natural highways vests in that Government the right to take all needed measures to preserve the navigability of the navigable water courses of the country even against any State action. It is true there have been frequent decisions recognizing the power of the State, in the absence of Congressional legislation, to assume control of even navigable waters within its limits . . . A long list of cases to this effect can be found in the reports of this Court. See among others the following: *Wilson v. Black Bird Creek Co.*, 2 Pet. 245; *Gilman v. Philadelphia*, 3 Wall. 713; *Escanaba Co. v. Chicago*, 107 U. S. 678; *Willamette Iron Bridge Co. v. Hatch*, 125 U. S. 1 . . .

"Case remanded with instructions to set aside decree of dismissal and to order an inquiry into the question whether the intended acts of the defendants in the construction of a dam and in appropriating the waters of the Rio Grande will substantially diminish the navigability of that stream within the limits of present navigability, and if so, to enter a decree restraining those acts to the extent that they will so diminish."—*United States v. Rio Grande Dam and Irrigation Company*, 174 U. S., 690, 702-703, 710 (May 22, 1899).

<sup>86</sup>Bannister, L. Ward, *Letter as President of the Denver Chamber of Commerce to Hon. E. O. Leatherwood, April 7, 1924, in answer to Leatherwood's letter to Bannister including testimony of Hamel, Hearings, H. R. 2903, Part V, p. 902, March 25, 1924.*

dam, arguing that the construction of a dam at Boulder Canyon by the federal government is not an act to promote or protect navigation but that its very purpose is to gather water in order later to withdraw it from the stream for use on land and also in order to generate electric power. "These acts by the Government," he states, "are not connected with navigation, and therefore cannot be justified by the interstate commerce clause of the Constitution, which is the clause under which the Congress has the implied right to protect navigation on an interstate stream."<sup>87</sup>

Counsel for Colorado in the Wyoming-Colorado case asserted a high degree of state jurisdiction, a position in line with Mr. Bannister's contention that most of the arid states create their own systems of water rights independently of the federal government. Numerous Acts of Congress and decisions of the courts and the Land Department were cited in support of comparatively extensive jurisdiction of the public land states over the waters within their domain.<sup>88</sup> In these Acts, "the obvious

<sup>87</sup>*Hearings*, H. R. 2903, Part V, p. 902, March 25, 1924.

"Again assuming, as I have been asked to assume, that the stream is navigable, my opinion is that the navigability thus assumed does not confer upon the Government any power of regulation or control which is not in some way connected with the regulation of commerce upon the river. The proposed Boulder Dam is not to be built as a means of regulating or promoting commerce in any way. In fact, the expected result is to be that commerce will be more than ever interfered with by the interception of water with which to fill the great reservoir and by the withdrawal of the water from the river and from the reservoir for the purpose of irrigating lands. The effects of the reservoir is therefore to ruin commerce and not to promote it. The effect has nothing whatever to do with the regulation and promotion of commerce, and therefore, the navigable quality of the river would not confer upon the Federal Government any more power, right, or authority over the Boulder Canyon project than the Government would possess if the stream were non-navigable instead of navigable."—Bannister, L. Ward, *Letter of Feb. 21, 1924, to Hon. Addison T. Smith*, Chairman of the Committee on Irrigation and Reclamation, House of Representatives, *Hearings*, H. R. 2903, Part I, p. 206, 207, Feb. 18, 1924.

<sup>88</sup>Among the paragraphs of citations included in the argument for Colorado was the following:

"Acts of July 26, 1866, 14 Stat. 253; July 9, 1870, 16 Stat. 218; March 3, 1877, 19 Stat. 377; March 3, 1891, 26 Stat. 1095; August 18, 1894, 28 Stat. 422; March 2, 1897, 29 Stat. 603; February 26, 1897, 29 Stat. 599; June 17, 1902, 32 Stat. 388; February 21, 1911, 36 Stat. 925; *Atchison v. Peterson*, 20 Wall. 507; *Basey v. Gallagher*, 20 Wall. 670; *Broder v. Water Co.*, 101 U. S. 274; *Jennison v. Kirk*, 98 U. S. 453, 456; *United States v. Rio Grande Co.*, 174 U. S. 690; *Gutierrez v. Albuquerque Land Co.*, 188 U. S. 545; *Kansas v. Colorado*, 206 U. S. 46; *Boquillas Cattle Co. v. Curtis*, 213 U. S. 339; *Twin Falls Canal Co. v. Foote*, 192 Fed. 583; *Stanfield v. Umatilla River Water Users Ass'n.*, 192 Fed. 596; *Withdrawal of Public Lands for Irrigation Purposes*, 32 L. D. 254."—*Wyoming v. Colorado*, 259 U. S., 419, 432 (June 5, 1922.)

The Act of July 26, 1866, Sec. 9, declared that, "whenever by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same."—14 U. S. Statutes, 253.

purpose of Congress was to give its assent, so far as the public lands were concerned, to any system, although in contravention to the common-law rule, which permitted the appropriation of those waters for legitimate industries," according to a 1922 decision of the Supreme Court of the United States.<sup>89</sup>

Mr. Bannister's comments upon certain of these Acts, when compared with the position of Mr. Hamele, directly raise the first phase of the Hamele-Bannister controversy—the question whether the federal government or the states own the unappropriated water in navigable interstate streams, using the word "own" in the sense that it is either the federal government or the government of the respective states which is the source of

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The Act of July 9, 1870, specifically extended the rights mentioned in Section 9 of the Act of July 26, 1866, to all public lands affected by the Act.—16 U. S. Statutes, 218.

The Desert Land Act of March 3, 1877, contained the statement that, "the right to the use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation . . . and all surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights."—19 U. S. Statutes, 377.

Reclamation of desert lands in the public land states by their settlement, cultivation, and sale in small tracts to actual settlers, was the purpose of the Act of August 18, 1894. The Secretary of the Interior was authorized and empowered, upon proper application of any of the public land states having desert lands, to contract with each of them binding the United States to "donate, grant and patent to the State free of cost for survey or price such desert lands not exceeding one million acres in each State, as the State may cause to be irrigated, reclaimed, occupied, and not less than twenty acres of each one hundred and sixty-acre tract cultivated by actual settlers, within ten years next after the passage of this Act as thoroughly as is required of citizens who may enter under the said desert land law."—28 U. S. Statutes, 422.

By the Act of March 2, 1897, a certain piece of land in Colorado was restored to the public domain, and the Secretary of the Interior was authorized to sell it under such regulations as he might prescribe, so as to secure the building and permanent maintenance of a reservoir for the storage of water to increase the flow of the Arkansas River as had been contemplated by the government in reserving the reservoir sites of the arid region. However, a proviso was added, and undoubtedly it was because of this proviso that counsel for Colorado cited the Act in the Wyoming-Colorado case, that nothing in the Act should be construed "to deprive the State of Colorado of the control of the water in any reservoir which may be constructed on this site by any person or corporation or association, under the regulations provided by the State laws in such cases."—29 U. S. Statutes, 603.

Sec. 8 of the Act of June 17, 1902, included the statement that, "nothing in this Act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws."—32 U. S. Statutes, 388.

<sup>89</sup>*United States v. Rio Grande Irrigation Co.*, 174 U. S., 690, 706, quoted in *Wyoming v. Colorado*, 259 U. S., 419.

rights in the use of water, which come into being upon the appropriation of the water. Mr. Hamele's position is that the federal government is the source of these rights; Mr. Bannister's, that the state is the source.

"Is it your thought," asked Mr. Leatherwood in directing a question to Mr. Hamele, "that the Federal Government could at its will set aside the laws, rules, and regulations of the several States with reference to the initiation and creation of rights in those streams?" To this an affirmative answer was given, and an analogy drawn between the status of unappropriated water and that of public land prior to the time that the entryman receives his patent.<sup>90</sup> Section eight of the Act of 1902 was cited as a specific instance of the federal government setting aside the laws, rules, and regulations of a state.<sup>91</sup> But it is difficult to see how Mr. Hamele could find language in this section to substan-

<sup>90</sup>"MR. LEATHERWOOD: There is one question that has been in my mind ever since you made your opening statement. I suppose by the proposed amendment you suggest to the Swing-Johnson bill that you adhere to the doctrine that the ownership and control of the unappropriated waters in the streams in the so-called arid-land States is in the Federal Government?"

"MR. HAMELE: Yes; I do.

"MR. LEATHERWOOD: And that being true, is it your thought that the Federal Government could at its will set aside the laws, rules, and regulations of the several States with reference to the initiation and creation of rights in those streams?"

"MR. HAMELE: Yes; so far as the unappropriated water is concerned. In fact, it did so in section 8 of the national act of 1902.

"MR. LEATHERWOOD: That is, the Federal Government, according to your theory, has the power to ignore the laws, rules, and regulations of the several States with reference to the control of the waters in those States?"

"MR. HAMELE: In so far as they relate to waters unappropriated under local law and custom they then assume the same nature and character that public land does after the entryman has gotten his patent when it becomes subject to local taxation and local control. I think the unappropriated waters have the same status.

"MR. LEATHERWOOD: I want to make it clear that my questions apply to the subject with the understanding that it applies only to unappropriated waters.

"MR. HAMELE: Yes."—*Hearings*, H. R. 2903, Part V, p. 389, March 25, 1924.

<sup>91</sup>It is undoubtedly the proviso added to Sec. 8 which Mr. Hamele had in mind.

"Sec. 8. That nothing in this Act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, that the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right."—*An Act Appropriating the Receipts from the Sale and Disposal of Public Lands in certain States and Territories to the Construction of Irrigation Works for the Reclamation of Arid Lands*, June 17, 1902, 32 U. S. Statutes, 388.

tiate his contention. The first part of the section very definitely asserts that the laws of no state are to be interfered with by any of the provisions of the Act. It is true that a proviso was added declaring that the right to the use of water should be appurtenant to the land irrigated, and that beneficial use should be the basis, the measure, and the limit of the right. However, the meaning of this portion of the section was interpreted by the Supreme Court in the United States-Rio Grande Irrigation Company case, the conclusion of the court being that the obvious purpose of Congress was to give its assent, so far as the public lands were concerned, to any system which permitted the appropriation of water for legitimate use, although in contravention of the common-law rule.<sup>92</sup>

Mr. Hamele further asserted the proposition that the United States might dispose of the public domain with the waters thereon or without them, citing the Oregon case of *Hough v. Porter*<sup>93</sup> as his authority and pointing out that in that case riparian rights in Oregon were abrogated by Congress and not by the State.<sup>94</sup> The words of a prior decision in the federal courts

<sup>92</sup>*United States v. Rio Grande Irrigation Co.*, 174 U. S., 690, 706, quoted in *Wyoming v. Colorado*, 259 U. S., 419.

<sup>93</sup>51 Oregon, 318; 95 Pacific Reporter, 732; 98 Pac., 1083; 102 Pac. 728.

<sup>94</sup>*Hearings*, H. R. 2903, Part V, p. 833, March 25, 1924.

Part of the language of the *Hough-Porter* case is as follows:

“ . . . . The right of the government to dispose of its public lands, and to deal with all rights incident thereto, in such a manner as it may deem best, has long been fully established and recognized by all decisions upon the subject. True, it cannot by legislation determine for any state, after its admission, what the local laws relative to riparian rights shall be (*United States v. Rio Grande Irrigation Co.*, 174 U. S., 690, 703, 19 Sup. Ct. 770, 43 L. Ed. 1136); but the general government, in dealing with its public lands, may provide for their transfer as might any other landed proprietor, and make such reservations therefrom by grant, dedication, or otherwise as it may see fit. Riparian rights may become the subject of a grant or dedication, and may be severed from the soil. *Coquille Mill & M. Co. v. Johnson (Or.)*, 98 Pac. 132. This principle is clearly and concisely stated in an opinion by Knowles, District Judge, in *Howell v. Johnson (C. C.)*, 89 Fed. 556, 558, as follows: ‘Being the owner of these (public) lands, it has the power to sell or dispose of any estate therein or any part thereof. The water (in question) in an unnavigable stream flowing over the public domain is a part thereof, and the national government can sell or grant the same, or the use thereof, separate from the rest of the estate, under such conditions as may seem to it proper.’ Decisions to the above effect are too numerous and too well understood to need extensive citation.

“By the homestead and other land acts Congress granted to the citizens of various states and territories the right, at any time thereafter, to enter upon the public domain and to select a quantity of land, in the manner there specified, and of thereby securing a home, notwithstanding no certain individual was designated to accept and receive such title. The effect of these acts was that the grantor of the public lands, the national government, was to hold these lands in trust for the public, to be acquired by any qualified citizen thereof on compliance with the rules prescribed. Numerous grants in presenti were also made, to be held in trust for any company, person, or persons who might construct any wagon or other roads there indicated. . . . .

to the effect that the water in an unnavigable stream flowing over the public domain is a part of the domain which the national government can sell or grant separate from the rest of the estate and under such conditions as may seem proper, were quoted with approval by the judge writing the decision in the Hough-Porter case and form the basis of Hamel's position.

Mr. Bannister is the leading disputant holding the opposite view. His argument is that the power of disposing of the waters of a state is lodged not in the federal government but in the state.<sup>95</sup> "The theory by which I reach this conclusion," wrote

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"Another and more apt illustration is that of the policy of the national government respecting its mineral lands, in regard to which any one, acquiring title to any part of the public domain . . . , takes such land subject to the exception that he does not acquire title to the minerals known to be therein at the time of entry or of patent, whether located for minerals at the time of the inception of the rights of its grantor or not. 5 Fed. St. Ann. Pars. 2318, 2319 (U. S. Comp. St. 1901, pp. 1423, 1424); Calhoun Gold Min. Co. v. Ajax Gold Min. Co., 27 Colo. 1, 59 Pac. 607, 50 L.R.A. 209, 83 Am. St. Rep. 17.

"It was in the exercise of a similar prerogative on the part of the government that there was by the act of 1877 given to the public, or to any individual thereof, the right to appropriate and apply to a beneficial use the waters flowing through its public domain . . . . This unquestioned power of the owner over the public domain was exercised, and any one entering upon, and acquiring title to, any part of the public domain after the passage of this act accepted such land and title thereto with full knowledge of the law under which the patent was issued; the import thereof being that this right incident to the soil was reserved by the government, to be held in trust for the public, and that he who first applies the water to a beneficial use shall become the owner of the right thereto, and that the recipient of such title takes it subject to that right, which he, in common with others of the public, is privileged to exercise. It is elementary that the grantor can convey no greater title than he has."—*Hough v. Porter*, 98 Pac., 1083, 1091-1092, Supreme Court of Oregon, Jan. 5, 1909.

<sup>95</sup>"A question which was asked me yesterday is, What was the effect of the act of 1866 and the desert land act of 1877? The questioner said, in effect, is it not true that all appropriation rights come from the Federal Government by virtue of those two acts? To that my answer is that, in the California system States these statutes have the effect of grants of appropriation rights carved out of previously existing riparian rights, owned by the Federal Government. In other words, they have the effect of grants out of property previously owned by the Government.

"But in the Colorado system States, to which six of the seven States of this basin belong, the acts do not have that effect. In those States they have no real effect whatever.

"They did have an effect in these areas prior to statehood, because, then, Congress was supreme over the entire areas.

"But with no riparian water rights existing in the Federal Government within these areas, but with only the political power to make law through its judiciary and through Congress existing in the Federal Government, and with the States being admitted into the Union, those States were admitted into the Union without any outstanding property rights of any kind existing in the Federal Government, and a large part of the political or lawmaking power which the Government possessed was transferred to the States upon their admission to the Union, including in that power the power to create systems of water rights; and therefore Arizona, Colorado, Utah, and these other States are the creators of their water systems.

"That is as good an answer as I can give to that question."—*Hearings*, H. R. 2903, Part I, p. 225, Feb. 20, 1924.

Mr. Bannister in 1915, "is that there is a distinction between sovereignty and ownership; that prior to statehood the United States had sovereignty over but not property in the water; that by conferment of statehood this sovereignty was passed to the State which, in consequence thereof, became vested, to the exclusion of the Federal Government, with power to dispose of the waters and to create either in itself or in others property rights in respect thereto."<sup>96</sup>

In his article of a decade ago, Mr. Bannister remarked that the condition which then existed of no final decision having been made by the Supreme Court on the question of whether the federal government or the state was the source of the right, was largely due to the fact that in the main the federal government and the state, each in its own way, had supported the priority system, and that with the two sovereignties thus uniting to uphold the system there had been no occasion to decide which of the two governments was the one whose consent was necessary and controlling.<sup>97</sup> "Even so," he continued, "it is surprising

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<sup>96</sup>*The Question of Federal Disposition of State Waters in the Priority States*, Harvard Law Review, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1962-1974, May 17, 1924.

The introductory paragraphs of the article indicate the practical importance of the question:

"Which has the authority, the Federal Government or the State, to dispose of the waters of the streams in our priority States? In other words, which of the two is to determine what the system of water rights for the State shall be—for instance, whether riparian or priority—and to dispose of rights to water thereunder? Here we have the greatest and most interesting of the many unsettled questions in the law of western water rights.

"What difference does the decision make? A very decided one. If, for instance, the Federal Government has the authority, then the state engineer of Wyoming is wrong in his contention that the Reclamation Service has no right to divert from the North Platte, in Wyoming, a large quantity of water for the irrigation of land in a neighboring State; and the Department of Justice at Washington is right in the position which it has recently taken in asserting that all stream waters not yet appropriated in the priority States are subject to disposition by the Federal Government and not by the State.

"If the authority in question is lodged in the Federal Government, then, except to the extent of the Government's consent, the State may not ordain or maintain any system of water rights at all or determine by whom rights to water may be acquired or upon what terms or what the nature of the right shall be.

"Such consequences, indeed, justify the inquiry: Which, the Federal Government or the State, is the disposing authority?"

<sup>97</sup>The support of the priority system by state governments and the federal government was discussed as follows:

"The priority system originated among the 'forty-niners' of California in what was then neither Territory nor State, but the unorganized public domain of the United States, and at first was devoted to mining uses, but later the system spread and the uses were extended until now, as we have seen, 17 States enforce the system exclusively or partially (Exclusively: Colorado, Wyoming, Utah, Nevada, Idaho, New Mexico, and Arizona. Partially: California, Montana, North Dakota, South Dakota, Washington, Kansas, Nebraska, Oklahoma, Oregon, and Texas) and the waters may be used for any and all beneficial purposes.

that a certain relation between water claimants has not presented to the Supreme Court of the United States long ago, and in compelling manner, this question of authority." He referred, he said, to the relative claims of a prior riparian land proprietor claiming solely as such under a United States patent to riparian land and a subsequent appropriator, both being within a state which by its laws purports to do away entirely with the riparian system—an issue there being whether it is within the power of a state to dispose of the waters under a priority system as against a prior riparian patentee of riparian land on the same stream, that he receives, as an incident of the grant, the water

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When the forty-niners originated the system they were without law save of their own making, but later the system was recognized by judicial decisions and legislative enactments of organized Territories, States, and of the United States. The first reported case sustaining the priority doctrine was *Eddy v. Simpson* (3 Cal. 249), decided in 1853. The first legislative recognition was by the State of California in 1851 by an act (Civil practice act, Apr. 29, 1851, par. 621, now found substantially unchanged in Code of Civil Procedure, par. 748) providing that—

"In actions respecting mining claims proof shall be admitted of the customs, usages, or regulations established and in force at the bar or diggings embracing such claim . . ."

"The first legislative recognition by the United States was the act of July 26, 1866, throwing open the mineral portion of the public domain to private acquisition and providing also that—

"Whenever by priority of possession rights to the use of water for mining, agricultural, manufacturing, or other purposes by local customs, laws, and decisions of courts the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed, but whenever any person in the construction of any ditch or canal injures or damages the possession of any settler on the public domain the party committing such injury shall be liable to the party injured for such injury or damage."

"The first judicial decision of the United States Supreme Court upholding the priority system was that of *Atchison v. Peterson* (20 Wallace, 507), decided in 1874. Since these first favorable recognitions there have been many others, both legislative and judicial, from Territorial, State, and Federal Governments. Two of the later Federal statutes, although there are numerous others, deserve especial notice. One was an act (Revised Statutes, par. 2340) passed in 1870 providing that—

"All patents granted or preemption or homestead allowed shall be subject to any vested and accrued water right or rights to ditches and reservoirs used with such water rights as may have been acquired or recognized under the act of July 26, 1866."

"The other was the desert act of 1877 (19 Stats. 377) providing for the private reclamation of desert lands by conducting water thereto under the priority system and also providing as to the waters in excess of those so needed that—

"All surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers, and other sources of water supply upon the public lands and not navigable, shall remain and be held free for appropriation and use of the public for irrigation, mining, and manufacturing purposes subject to existing rights."—Bannister, L. Ward, *The Question of Federal Disposition of State Waters in the Priority States*, Harvard Law Review, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1962-1974, 1963-1964, May 17, 1924.

right which grants of riparian land, more generally speaking, always have carried in the history of English and American law, namely, a water right under the riparian system, making this claim to the water right only upon the basis of the priority of his grant and without regard to the fact that the grant is entirely silent on the subject of water rights. Then a word of prophecy was added: "Some day, and soon, however, the issue between prior riparian and subsequent appropriator and the difference between Federal and State statutes as to details of the priority system and the rivalry between the forces of Federal and State conservation of natural resources must force the decision as to which of the two sovereigns is the authorized disposer of the waters and is therefore to be obeyed."<sup>98</sup>

A full decade has passed, and still the issue is an open one. Mr. Hamele, Chief Counsel of the Reclamation Service, is the leading exponent of one view; Mr. Bannister, a representative of Denver civic organizations who is actively engaged in water rights litigation and who serves as special lecturer on water rights at Harvard Law School, upholds a different view in the discussions centering around present problems of Colorado River development. From a study of a number of opinions written prior to 1915, Mr. Bannister concluded that the Supreme Court had leaned, "or allowed itself to be quoted as leaning, at one time toward the idea of state disposition of waters, then toward federal disposition, then back again."<sup>99</sup>

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<sup>98</sup>Bannister, L. Ward, *The Question of Federal Disposition of State Waters in the Priority States*, Harvard Law Review, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1962-1974, 1964, May 17, 1924.

<sup>99</sup>"On the general question of whether it is the State or Federal Government which has the power of disposition a few opinions have been rendered, but they are not direct or harmonious enough to be considered as committing the court to a final decision. In *United States v. Rio Grande Irrigation Co.* . . . Mr. Justice Brewer, in rendering the opinion, asserted State sovereignty as against all but the United States, apparently not excluding even patentees of the United States, saying:

"It is also true that as to every stream within its dominion a State may change this common-law rule and permit the appropriation of the flowing waters for such purposes as it deems wise . . . Although this power of changing the common-law rule as to streams within its dominion undoubtedly belongs to each State, yet two limitations must be recognized.

"1. That in the absence of specific authority from Congress a State can not by its legislation destroy the right of the United States as the owner of lands bordering on streams to the continued flow of its waters, so far at least as may be necessary for the beneficial uses of Government property.

"2. That it is limited by the superior power of the general Government to secure the uninterrupted navigability of all navigable streams within the limits of the United States.

" . . . So far as those rules (reference here is to the rules of priority system) have only a local significance and effect on questions between citizens of the State, nothing is presented which calls for any consideration by the Federal courts."

Two different theories account for the wavering position of the courts. One of these has been called the California doctrine,

"Later in *Kansas v. Colorado* (206 U. S. 46, 1907) the opinion of the court, written by the same justice, still asserting State sovereignty, and this time not discussing limitations, contained the following:

"But it is useless to pursue the inquiry further in this direction. It is enough for the purpose of this case that each State has full jurisdiction over the lands within its borders, including the beds of streams and other waters . . . It may determine for itself whether the common-law rule in respect to riparian rights, or that doctrine which obtains in the arid regions of the West, of the appropriation of waters for the purpose of irrigation, shall control. Congress can not enforce either rule upon any State."

"In *Winters v. United States* (207 U. S. 564, 1908), which involved the question of whether a treaty with the Indians, setting aside for them certain lands as a reservation in the State of Montana, but saying nothing as to the waters flowing through the land, nevertheless created a right to the use of water by implication, Mr. Justice McKenna, writing the opinion in favor of the Indians, and apparently strong in his belief that the disposition of the waters is in the Federal Government, said:

"The power of the Government to reserve the waters and exempt them from appropriation under the State laws is not denied and could not be."

"In *Boquillas Land & Cattle Co. v. Curtis* (213 U. S. 339, 1909), wherein the controversy was as to whether a riparian United States patentee claiming under an United States patent confirming a Mexican grant, had a riparian right in the water, the court, by Mr. Justice Holmes deciding against riparian rights and recognizing the right even of a territory to reject the riparian system, said:

"It is not denied that what is called the common-law doctrine of riparian rights does not obtain in Arizona at the present date. Revised Statutes of Arizona, 1887, section 3198. But the plaintiff contends that it had acquired such rights before that statutory declaration, and that it can not be deprived of them now . . . They (the provisions relating to priority) simply follow what has been understood to be the law for many years. (*Clough v. Wing*, 2 *Ariz.* 371). The right to use water is not confined to riparian proprietors . . . Such a limitation would substitute accident for the rule based upon economic considerations, and an effort, adequate or not, to get the greatest use from all available land."

"In *Los Angeles F. & M. Co. v. City of Los Angeles* (217 U. S. 217, 1910), the court, by Mr. Justice Day, declared that it was for the State of California to say whether a Mexican grant made prior to the cession to the United States carried a riparian right, the grant itself being silent as to waters. The State court had held against the existence of the rights. I quote from the opinion:

"In its opinion on the case at bar the Supreme Court of California said that in this respect it was following *Hardin v. Jordan* (140 U. S. 371), and this court has frequently held that the extent of the right and title of a riparian owner under a patent is one of local law. See recent decision of *Whitaker v. McBride* (197 U. S. 510), a case therein cited."

"It also is interesting to note that the United States Circuit Court of Appeals, eighth circuit, in *Snyder v. Gold Dredging Co.* (181 *Fed.* 62, 1910) in holding that as between a prior riparian patentee and a subsequent appropriator in Colorado the patentee had no riparian rights, said:

"That by the settled rule of decision in the Supreme Court of the United States, conveyances by the United States of public lands on non-navigable streams and lakes, when it is not provided otherwise, are to be construed to have effect according to the law of the State in which the lands are situated in so far as the rights and incidents of riparian proprietorship are concerned . . . Here it is not provided otherwise either by statute or by patent, and as has been seen the local law does not recognize a conveyance of the land as carrying any right to the unappropriated waters of the stream."

"From the foregoing opinions it appears that the Supreme Court has leaned, or allowed itself to be quoted as leaning, at one time toward the idea of State disposition of waters, then toward Federal disposition, then back again, and

and the other is known as the Colorado doctrine. The first of these ascribes the authority to the federal government; the second, to the state.

“More fully the California doctrine may be stated as follows: That when the United States by cession from the ceding nations became the owner of the lands now comprising the priority States it became as well the owner in a strict proprietary sense of the right to use the waters flowing over these lands; that while it was such proprietary owner, statehood or State sovereignty was conferred upon what are now the priority States; that sovereignty is different from ownership, and the conferment of the former upon a State passed only political powers and not property; that in consequence, although the Federal Government is no longer sovereign in respect to the waters within the priority Commonwealths, the United States still has its original property right to use the water just as it continued to own the public lands themselves; that by the Federal Constitution (Art. IV, sec. 3, cl. 2), Congress alone may dispose of Federal property, and therefore of this usufructuary right of the United States, and accordingly no State has a right by virtue of its statehood or sovereignty to determine what system of water rights shall prevail therein or who may be the owner of such rights or how they may be acquired or for what purpose; that no one has acquired or can acquire any usufructuary right in the waters except by and with the consent of the Federal Government; that the act of 1866 and the desert act of 1877 . . . , the principal Federal statutes purporting to create priority rights to the use of water in other than the United States, are really grants of property rights in the use of water to unnamed grantees, to take effect upon performance by them of the physical acts (appropriation) required by the laws of the different priority States; that where there are in a priority State rival claimants to water from the same stream, one claiming as a prior appropriator and the other merely as a patentee of the United States to riparian land, both are United States grantees of the right to water, but the prior

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that the opinion of Mr. Justice Brewer in *United States v. Rio Grande Irrigation Co.* is scarcely consistent with itself, for if the State as against the United States itself can not reject the riparian rule yet it may do it as against the grantees of the United States, it would seem either that the United States itself had no property right at all in the right to use the waters and, therefore, could not complain of the rejection by the State, as against the United States, or else that having such property right Congress ought to be permitted to dispose of it to grantees under Article IV, section 3, cl. 2, conferring on that body ‘the power to dispose of . . . the territory or other property of the United States.’”—*The Question of Federal Disposition of State Waters in the Priority States*, Harvard Law Review, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1962-1974, 1967-1968.

appropriator prevails to the extent of his appropriation over the subsequent patentee because of being the earlier grantee; that on the other hand where the patent to the riparian land is prior to the appropriation the grant of the land carries with it a right to riparian use of water, and accordingly to the extent of such riparian use the prior patentee prevails over the subsequent appropriator; that to the extent the United States at the time of admitting a priority State into the Union had not granted away its property rights in the use of the waters in the form of grants of riparian lands to patentees or of appropriations by appropriators, or has not done so since, the United States is still the owner thereof with full power of disposition."<sup>100</sup>

"The Colorado doctrine may be put in this way: That while prior to statehood of the priority States the United States had sovereign jurisdiction over the waters, and appropriation rights acquired during that time were derivable exclusively from the United States, yet the riparian system never was in force in the areas afterwards comprising the Colorado-doctrine States; that the conferment of State sovereignty vested in the State as an incident of such sovereignty over the waters the exclusive power to dispose of appropriation rights to the use of water not inconsistent with the rights previously disposed of by the Federal Government and to prescribe the persons who could acquire them and the terms and purposes of the acquisition; that subsequent to statehood an appropriator does not receive his water right as the grant of a preexisting property right in and from the United States, but the right is conferred upon him by the sovereign power of the State."<sup>101</sup>

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<sup>100</sup>"Lux v. Haggin (69 Cal. 255, 338, 10 Pac. 674, 721, 1886), the leading case on the California doctrine, summarizes the priority phase of that doctrine as follows: 'Recognizing the United States as the owner of the lands and waters, and as therefore authorized to permit the occupation or diversion of the waters as distinct from the lands, the State courts have treated the prior appropriator of water on the public lands of the United States as having a better right than a subsequent appropriator on the theory that the appropriation was allowed or licensed by the United States. It has never been held that the right to appropriate waters on the public lands of the United States was derived directly from the State of California as the owner of innavigable streams and their beds. And since the act of Congress granting or recognizing a property in the waters actually diverted and usefully applied on the public lands of the United States, such rights have always been claimed to be deraigned by private persons under the act of Congress, from the recognition accorded by the act, or from the acquiescence of the General Government in previous appropriations made with its presumed sanction and approval.'"—Bannister, L. Ward, *The Question of Federal Disposition of State Waters in the Priority States*, Harvard Law Review, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1962-1974, 1965.

<sup>101</sup>*Ibid.*

"In *Willey v. Decker* (11 Wyo. 496, 73 Pac. 210, 1903), Mr. Justice Potter, speaking for the court, deals with both doctrines in the following language:

"In that State (Montana) the doctrine more generally known, perhaps,

The issue raised by these two theories is whether or not the United States still has its original property right to use the water

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as the "California doctrine", prevails. Stated briefly, that doctrine is that while a stream is situated on the public lands of the United States a person may, under the customs and laws of a State and the legislation of Congress, acquire by prior appropriation the right to use the waters thereof for mining, agricultural, and other beneficial purposes, and to construct and maintain ditches and reservoirs over and upon the public land; such right being good against all other private persons, and by statute good as against the United States and its subsequent grantees; but that, when a grantee of the United States obtains title to a tract of the public land bordering on a stream, the waters of which have not been hitherto appropriated, his patent is not subject to any possible appropriation subsequently made by another party without his consent . . .

"Upon that theory the right acquired by prior appropriation on the public domain is held to be founded in grant from the United States Government, as owner of the land and water under the acts of Congress of 1866 and 1870.

"In this State, on the other hand, the common-law doctrine concerning the rights of a riparian owner in the water of a natural stream has been held to be unsuited to our conditions; and this court has declared that the rule never obtained in this jurisdiction. (*Moyer v. Preston*, 6 *Wyom.* 308.) It was said in the opinion in that case that "a different principle better adapted to the material condition of this region has been recognized. That principle, briefly stated, is that the right to the use of water for beneficial purposes depends upon a prior appropriation."

"And, further, in explanation of the reasons for the existence of the new doctrine, it was said, "It is the natural outgrowth of the conditions existing in this region of country." The climate is dry, the soil is arid and largely unproductive in the absence of irrigation, but when water is applied by that means it becomes capable of successful cultivation. The benefits accruing to land upon the banks of a stream without any physical application of the water are few; and while the land contiguous to water, and so favorably located as to naturally derive any sort of advantage therefrom, is comparatively small in area, the remainder, which comprises by far the greater proportion of our land otherwise susceptible of cultivation, must forever remain in their wild and unproductive condition unless they are reclaimed by irrigation. Irrigation and such reclamation can not be accomplished with any degree of success or permanency without the right to divert and appropriate water of natural streams for that purpose, and a security accorded to that right. Thus, the imperative and growing necessities of our conditions in this respect alone, to say nothing of the other beneficial uses, also important, has compelled the recognition rather than the adoption of the law of prior appropriation.

"In view of the contention in Colorado that until 1876 the common-law principles of riparian proprietorship prevailed in that State and that the doctrine of priority of right to water by priority of appropriation was first recognized and adopted in the constitution, the supreme court of that State, by Mr. Justice Helm, concluded a discussion in the matter as follows: "We conclude, then, that the common-law doctrine giving the riparian owner a right to the flow of water in its natural channel upon and over his lands, even though he makes no beneficial use thereof, is inapplicable to Colorado. Imperative necessity, unknown to the countries which gave it birth, compels the recognition of another doctrine in conflict therewith. And we hold that, in the absence of express statutes to the contrary, the first appropriator of water from a natural stream for a beneficial purpose has, with the qualifications contained in the constitution, a prior right thereto, to the extent of such appropriation." And it was further said that he latter doctrine has existed from the earliest appropriations of water within the boundaries of the State."—Bannister, L. Ward, *The Question of Federal Disposition of State Waters in the Priority States*, *Harvard Law Review*, Jan., 1915, reprinted in *Hearings*, H. R. 2903, Part VIII, pp. 1965-1966.

in the streams of the public land states just as it continues to own the public lands themselves. The California doctrine would give an affirmative answer; the Colorado doctrine, negative.

It would seem that the Colorado doctrine that the conferring of state sovereignty vested in the state as an incident of such sovereignty over the waters the exclusive power to dispose of appropriation rights to the use of water not inconsistent with the rights previously disposed of by the federal government, would be the more useful of the two theories if the streams of the western states were confined within the borders of a single state. But when interstate streams are considered, the question of administration becomes acute, particularly if one proceeds upon the basis of exclusive state authority.<sup>102</sup>

What is there to recommend the thesis that "sovereignty is different from ownership, and the conferment of the former upon a State passed only political powers and not property; that in consequence, although the Federal Government is no longer sovereign in respect to the waters within the priority Commonwealths, the United States still has its original property right to use the water just as it continued to own the public lands themselves," and that Congress alone may dispose of this federal property? On the other hand, what are the arguments in favor of the proposition that "the conferment of State sovereignty vested in the State as an incident of such sovereignty over the waters the exclusive power to dispose of appropriation rights to the use of water not inconsistent with the rights previously disposed of by the Federal Government?"

It is well settled that there is no property right in the corpus of the water, but merely a property right in the use of the water.<sup>103</sup> This being the case, if we look to the several states as instruments to be used in getting things done for the inhabitants within their borders which those individuals cannot accomplish in their own capacity, the separate states might properly grant the right to use the water of intra-state streams. The interests of people who live beyond the border of the particular state concerned would not be affected in any manner by such a method of procedure, and the principle of home rule thus applied would buttress satisfactory conditions of local government. But

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<sup>102</sup>See the discussion included in a preceding part of this chapter showing the inadequacy of the Wyoming-Colorado case to meet the problems of Colorado River development.

<sup>103</sup>The legal implications of the concept "property" have been the subject of many treatises, to say nothing of a wide range of works dealing with other phases of the term. See Pound, Roscoe, *Readings in Roman Law and the Civil Law and Modern Codes as Developments Thereof*, Part II, 1921-1922, Chapter V, *The Law of Property*, (Mimeographed material).

the limits to the effective action of the several states is reached when the subject to be handled comes to be an interstate stream. Here the unit of politically organized society which must function if the things which the inhabitants of a certain area are unable to accomplish in their individual capacity, are to be accomplished at all, is an administrative agency larger than that of any one state.<sup>104</sup> It may be a regional agency established by the cooperative efforts of several interested states under the Compact clause of the federal constitution, or it may be an agency of the federal government.

Upon a theoretical basis, then, it may be said that the United States should be regarded as still holding its original property right to use the water within the priority states just as it continued to own the public lands themselves, with respect to interstate streams, if it be assumed that the federal government is the proper agency to administer water rights in such streams; and that the conferment of state sovereignty should be regarded as having vested in each state as an incident of such sovereignty the exclusive power to dispose of appropriation rights not inconsistent with the rights previously disposed of by the federal government, with respect to intra-state streams.

However, if it be assumed that a regional commission created by the several states under the Compact clause of the federal constitution is the proper agency to administer water rights in interstate streams, it is not necessary to regard the federal government as having held its original property right to use the water within the priority states just as it continued to own the public lands themselves. Through interstate compact satisfactory administrative control may be secured under the theory that the separate states have the exclusive power to dispose of appropriation rights not inconsistent with the rights previously disposed of by the federal government. This matter will be pursued further after a brief consideration of two cases showing the manner in which different courts have proceeded when confronted with somewhat similar issues.

These cases raised the question of the ownership of the beds of certain streams. There was no issue as to whether the federal or the state government is the source of the property right in the corpus of the water. Accordingly, the language of the de-

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<sup>104</sup>It will be pointed out in a subsequent portion of this chapter that there is a very pronounced tendency to say that some particular problem is too far-reaching for one state to manage and that therefore the federal government should do the work. This assertion is not necessarily true, and fails to give due consideration to all the issues involved. Our best chance of success in avoiding excessive administrative centralization at Washington lies in our intelligent use of the Compact clause of the federal constitution.

cisions is of interest only to the extent that it suggests a method of approach. Direct application cannot be made to our present problem.

In *Commonwealth v. Roxbury*<sup>105</sup> the effect of the granting of a colonial charter was under discussion. The statement was made that the effect of the charter was to grant to the company both the *jus privatum* and the *jus publicum* of the crown, "the *jus privatum*, or title to the land, to be held in fee, parcelled out to corporations and individuals, to be held in fee subject to the rules of the common law, as private property; and the *jus publicum*, or all those rights of the crown in the sea, sea shore, bays and arms of the sea, where the tide ebbs and flows, in trust for the public use of all those who should become inhabitants of said territory and subjects of said government."<sup>106</sup> Then it was asserted that in the construction of a grant the court would take into consideration the circumstances attending the transaction so that in a case where certain ordinances had extended the rights of the town of Newbury to the upland owners, making certain flats above low water mark the private property of said upland owners, the particular grant then under consideration would be similarly construed. The right of property, it was said, would be considered as having been vested in the colony, "and as superadded thereto, the right of government, and, as incident to this, the *jus publicum* over seashores and tide waters."<sup>107</sup>

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<sup>105</sup>9 Gray 451 (1857).

An extensive note on early charters and grants is found on pages 503-528, of 9 Gray's (Mass.) reports, following the report of *Commonwealth v. City of Roxbury*, 9 Gray 451.

<sup>106</sup>*Commonwealth v. Roxbury*, 9 Gray 451, 483.

<sup>107</sup>"In the construction of a grant, the court will take into consideration the circumstances attending the transaction, the situation of the parties, the state of the country, and of the thing granted, at the time, in order to ascertain the intent of the parties. *Adams v. Frothingham*, 3 Mass. 352. In that case, a grant from the town of Newbury to Noyes in 1680, on an arm of the sea, indefinite in its direction toward the channel, was held to intend a conveyance to low water mark, being within one hundred rods, because the ordinance of 1641 had thus so extended the right of the town to the upland owners, as to make the flats to that extent their private property.

"So in other states where the same rule of the common law existed, it was held that by the king's charter the right of property vested in the colony, and as superadded thereto, the right of government, and, as incident to this, the *jus publicum* over sea shores and tide waters; but where no such law as the Colony ordinance of Massachusetts of 1641 was ever adopted, it has been decided that a grant of lands lying on the sea shore or an arm of the sea will not convey land beyond high water mark. As when the government of Connecticut in 1685 confirmed to proprietors, who had purchased of the Indians, lands including an arm of the sea, and with all ports, rivers, etc., it was held not to be a grant of the soil between high and low water mark. *East Haven v. Hemingway*, 7 Conn. 186, *Middletown v. Sage*, 8 Conn. 221. In New York it has been decided, that no executive right, adverse to that of the sovereign and public right, in the soil of the shore below high water mark, can be acquired by a town, by the

If one were to extend the language of this case by analogy to the question of the source of the right to the use of water, it might be argued that the right of property vested in the several states upon admission, that the right of government was super-added thereto, and that, incident to this, there was the *ius publicum* over the corpus of the waters flowing in the streams. This line of reasoning would substantiate the position of advocates of the Colorado doctrine.

The second case was the comparatively recent one of *Scott v. Lattig*.<sup>108</sup> The question raised involved the title to certain lands along the Snake River, a navigable western stream. "Bearing in mind, then," said the Court, "that Snake river is a navigable stream, it is apparent, first, that on the admission of Idaho to statehood the ownership of the bed of the river on the Idaho side of the thread of the stream—the thread being the true boundary of the State—passed from the United States to the State subject to the limitations just indicated (lands underlying navigable waters within the several States belong to the respective States in virtue of their sovereignty and may be used and disposed of as

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operation of an act of the legislature extending the limits of such town over such waters. Such act may give jurisdiction, but no right of property in the soil. *Palmer v. Hicks*, 6 Johns. 133. Similar decisions are to be found in some of the other maritime states."—*Commonwealth v. Roxbury*, 9 Gray 451, 493.

In a *Memorandum of Law Points and Authorities respecting the Rights of Arizona in the Colorado River*, prepared and submitted to Hon. George W. P. Hunt, Governor of Arizona, by Mr. Samuel White, and bearing date of September 8, 1925, the assertion is made that the State of Arizona is the absolute owner of the bed of the Colorado River where it lies wholly within the state, and to the center of the stream where it constitutes the boundary between Arizona and the States of Nevada and California. Cases cited in support of this statement are *Pollard v. Hagan*, 11 L. Ed., 565; *Martin et al v. Waddell*, 16 Peters, 410; *Huse v. Glover*, 30 L. Ed., 487; *Cardwell v. American River Bridge Company*, 28 L. Ed., 959; *Illinois Central Railway v. People of the State of Illinois*, 36 L. Ed., 1018. Briefly stated the argument is that the shores of navigable waters and the soil under them between high and low water marks were not granted by the Constitution to the United States, but were reserved to the states, respectively; that the new states; and the Congress cannot grant lands below high water mark on navigable water in a state.

The words of *Hardin v. Jordan*, 140 U. S., 371, 381 (1890) are in point here.

"With regard to grants of the government for lands bordering on tide water, it has been distinctly settled that they only extend to high-water mark, and that the title to the shore and lands under water in front of lands so granted enures to the State within which they are situated, if a State has been organized and established there. Such title to the shore and lands under water is regarded as incidental to the sovereignty of the State—a portion of the royalties belonging thereto and held in trust for the public purposes of navigation and fishery—and cannot be retained or granted to individuals by the United States. *Pollard v. Hagan*, 3 How. 212; *Goodtitle v. Kibbe*, 9 How. 471; *Weber v. Harbor Commissioners*, 18 Wall. 57."

<sup>108</sup>227 U. S., 229 (1913).

The principle of this case is reaffirmed in *Oklahoma v. Texas*, 258 U. S., 574 (May 1, 1922).

they may direct, subject always to the rights of the public in such waters and to the paramount power of Congress to control their navigation so far as may be necessary for the regulation of commerce among the States and with foreign nations), and, second, that the subsequent disposal by the former of the fractional subdivisions on the east bank carried with it no right to the bed of the river, save as the law of Idaho may have attached such a right to private riparian ownership."<sup>109</sup> It was pointed out that in a conveyance of land bounded by navigable water, the land under the water does not belong to the United States, but has

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<sup>109</sup>"Coming to the effect to be given to the admission of Idaho as a State and to the disposal of the fractional subdivisions on the east bank, it is well to repeat that Snake River is a navigable stream, for there is an important difference between navigable and non-navigable waters in such a connection. Thus, Rev. Stat., par. 2476, which is but a continuation of early statutes on the subject (Acts May 18, 1796, 1 Stat. 468, c. 29, par. 9; March 3, 1803, 2 Stat. 229, c. 27, par. 17), declares: 'All navigable rivers, within the territory occupied by the public lands, shall remain and be deemed public highways; and, in all cases where the opposite banks of any streams not navigable belong to different persons, the stream and the bed thereof shall become common to both;' and of this provision it was said in *Railroad Company v. Schurmeir*, 7 Wall. 272, 288, 'the court does not hesitate to decide, that Congress, in making a distinction between streams navigable and those not navigable, intended to provide that the common law rules of riparian ownership should apply to lands bordering on the latter, but that the title to lands bordering on navigable streams should stop at the stream, and that all such streams should be deemed to be, and remain public highways.' Besides, it was settled long ago by this court, upon a consideration of the relative rights and powers of the Federal and state governments under the Constitution, that lands underlying navigable waters within the several States belong to the respective States in virtue of their sovereignty and may be used and disposed of as they may direct, subject always to the rights of the public in such waters and to the paramount power of Congress to control their navigation so far as may be necessary for the regulation of commerce among the States and with foreign nations, and that each new State, upon its admission to the Union, becomes endowed with the same rights and powers in this regard as the older ones. *County of St. Clair v. Lovington*, 23 Wall. 46, 68; *Barney v. Keokuk*, 94 U. S. 324, 338; *Illinois Central Railroad Co. v. Illinois*, 146 U. S. 387, 434-437; *Shively v. Bowlby*, 152 U. S. 1, 48-50, 58; *McGivra v. Ross*, 215 U. S. 70.

"Bearing in mind, then, that Snake River is a navigable stream, it is apparent, first, that on the admission of Idaho to statehood the ownership of the bed of the river on the Idaho side of the thread of the stream—the thread being the true boundary of the State—passed from the United States to the State, subject to the limitations just indicated, and, second, that the subsequent disposal by the former of the fractional subdivisions on the east bank carried with it no right to the bed of the river, save as the law of Idaho may have attached such a right to private riparian ownership. This is illustrated by the statement in *Hardin v. Shedd*, 190 U. S. 508, 519; 'When land is conveyed by the United States bounded on a non-navigable lake belonging to it, the grounds for the decision must be quite different from the considerations affecting a conveyance of land bounded on navigable water. In the latter case the land under the water does not belong to the United States, but has passed to the State by its admission to the Union . . . When land under navigable water passes to the riparian proprietor along with the grant of the shore by the United States, it does not pass by force of the grant alone, because the United States does not own it, but it passes by force of the declaration of the State which does own it that it is attached to the shore.' *United States v. Chandler-Dunbar Co.*, 209 U. S. 447, 451, is to the same effect."—*Scott v. Lattig*, 227, U. S. 229 (1913).

passed to the State by its admission to the Union. Similarly, it was asserted that when land under navigable water passes to the riparian proprietor along with the grant of the shore by the United States, it does not pass by force of the grant alone, because the United States does not own it, but it passes by force of the declaration of the State which does own it that it is attached to the shore.

The *Scott v. Lattig* case inclines toward the Colorado doctrine if we adopt analogical reasoning, the argument being developed from the Court's statement that lands underlying navigable waters within the several states belong to the respective states in virtue of their sovereignty and may be used and disposed of as they may direct. However, the subject matter therein considered is the question of property rights in the beds of navigable streams rather than the question of the source, federal or state, of the right to use unappropriated water.

The most that can be said in estimating the result of the somewhat analogous cases which have been considered, is that there is a slight trend in favor of the Colorado doctrine. Many points of law remain in question. We have seen that two assumptions are possible, the California doctrine coming to the rescue of the one in affording it a theoretical basis, and the Colorado doctrine rallying to the standard of the other.

These assumptions will bear restatement at this point. In the first place it may be assumed that the federal government is the proper agency to administer water rights in interstate streams. Those who make this assumption declare that the United States should be regarded as still holding its original property right to use the water within the priority states just as it continued to own the public lands themselves, that, to use the words of the California doctrine, "sovereignty is different from ownership, and the conferment of the former upon a State passed only political powers and not property; that in consequence, although the Federal Government is no longer sovereign in respect to the waters within the priority Commonwealths, the United States still has its original property right to use the water just as it continued to own the public lands themselves," and that Congress alone may dispose of this federal property. In the second place it may be assumed that a regional commission created by the several states under the Compact clause of the federal constitution is the proper agency to administer water rights in interstate streams. Those who make this assumption find the Colorado doctrine a convenient means of using legal theory to strengthen their position. Adopting the tenets of this doctrine, they assert that the conferment of state sovereignty

should be regarded as having vested in each state as an incident of such sovereignty the exclusive power to dispose of appropriation rights not inconsistent with the rights previously disposed of by the federal government, with respect to interstate streams.

The Colorado River Compact, among other things, attempts a division of the water of that stream between the Upper and Lower Basins. This fact, coupled with the reasonable assumption that the return flow of percolating water will be considerable when the river is improved, and the possibility that the time may come when such percolating water will be claimed by those who own the soil through which it is passing on its way back to the main stream, lead to the question of the nature of the property right in percolating water.

At one of the Utah hearings of the Commission, Mr. R. A. Hart, Senior Drainage Engineer of the United States Department of Agriculture, at Salt Lake City, stated that the tendency of the law in the irrigated states was entirely away from the common law doctrine of absolute ownership of percolating water, such ownership being vested in the owner of the land and the percolating water being regarded, according to the tenets of this doctrine, as part of the land itself. "In Utah," declared Mr. Hart, "the courts have gone so far as to declare that the common law doctrine in relation to percolating water has been abrogated whenever that doctrine conflicts with a right acquired by prior appropriation." He pointed out that this signified that the return flow from irrigation was judicially recognized and regarded as a source of supply of the stream.<sup>110</sup>

The case of *Public Utilities Commission v. Natatorium Company*,<sup>111</sup> a case from the Supreme Court of Idaho under date of November 6, 1922, may be used as an approach to this question. In this case two out of five judges wrote dissenting opinions, and a careful study of the decision will show that there is respectable

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<sup>110</sup>MR. R. A. HART: . . . Drainage of irrigated lands has to do largely with percolating water and it is of interest to note the tendency of the law in relation to such water.

"In general, it may be said that the tendency of the law in the irrigated States is entirely away from the common law doctrine of absolute ownership of percolating water, such ownership being vested in the owner of the land, and the percolating water being regarded as part of the land itself.

"In Utah, the courts have gone so far as to declare that the common law doctrine in relation to percolating water has been abrogated whenever that doctrine conflicts with a right acquired by prior appropriation.

"This means that the return flow from irrigation is judicially recognized and that such return flow from irrigation is regarded as a source of supply of the stream."—Colorado River Commission, *Hearing*, State Capitol Building, Salt Lake City, Utah, March 28, 1922, pp. 112, 115-116.

<sup>111</sup>211 Pacific Reporter, 533.

authority for the dissenting opinions as well as for the controlling opinion.

The right to use underground or percolating water has been delimited according to two principles. In the jurisdictions following the common law of England, water percolating through the soil belongs to the owner of the soil, following the doctrine expressed in the maxim, "Cujus est solus, ejus est usque ad inferos."<sup>112</sup> In other jurisdictions, what is known as correlative or reciprocal rights in underground water have been recognized.<sup>113</sup> The question of a choice between the principles was presented to the Supreme Court of California in the case of *Katz v. Walkinshaw*,<sup>114</sup> which has become a leading case among the western states.<sup>115</sup> In that case it was decided that, "The geological formation of the land, its topographical characteristics, and the aridity of the climate produced conditions so different from those of the countries from which our common law rules were derived, that the well-known rule that the ownership of the soil in fee gave absolute title to all beneath the surface, including such subterranean water supplies, was held unsuitable to our conditions."<sup>116</sup> According to Chief Justice Rice of the Idaho court, the decision in the *Katz-Walkinshaw* (California) case, "rests fundamentally upon the doctrine of the common law that percolating water is part of the soil and the property of the

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<sup>112</sup>"Under the common law of England, water percolating through the soil belongs to the owner of the soil, following the doctrine expressed in the maxim, 'Cujus est solum, ejus est usque ad inferos.'

"In many of the states the doctrine above referred to has been applied and carried to its logical conclusion. *Chatfield v. Wilson*, 28 Vt. 49; *Greenleaf v. Francis*, 18 Pick. (Mass.) 117; *Wheatley v. Baugh*, 25 Pa. 528, 64 Am. Dec. 721; *Wheelock v. Jacobs*, 70 Vt. 162, 40 Atl. 41, 43 L. R. A. 105, 67 Am. St. Rep. 659; *Huber v. Merkel*, 117 Wis. 355, 94 N. W. 354, 62 L. R. A. 559, 98 Am. St. Rep. 933; *Houston & Texas Cent. R. Co. v. East*, 98 Tex. 146, 81 S. W. 279, 66 L. R. A. 738, 107 Am. St. Rep. 620, 4 Ann. Cas. 827."—*Public Utilities Commission v. Natorium Company*, 211 Pacific Reporter, 533. Dissent of Rice, C. J.

<sup>113</sup>*Bassett v. Salisbury Mfg. Company*, 43 N. H. 569, 82 Am. Dec. 179; *Meeker v. City of East Orange*, 77 N. J. Law, 623, 74 Atl. 379, 25 L. R. A. (N. S.) 465, 134 Am. St. Rep. 798; *Hathorn v. Natural Carbonic Gas Co.*, 194 N. Y. 326, 87 N. E. 504, 23 L. R. A. (N. S.) 436, 128 Am. St. Rep. 555, 16 Ann. Cas. 989; *Schenk v. Ann Arbor*, 196 Mich. 75, 163 N. W. 109 . . . ; *Pence v. Carney*, 58 W. Va. 296, 52 S. E. 702, 6 L. R. A. (N. S.) 266, 112 Am. St. Rep. 963; *Debok v. Doak*, 188 Iowa, 597, 176 N. W. 631. See, also, 27 R. C. L. p. 1174."—*Public Utilities Commission v. Natorium Company*, 211 Pacific Reporter, 533. Dissent of Rice, C. J.

<sup>114</sup>141 Cal., 116, 70 Pac., 663, 74 Pac., 766, 64 L. R. A., 236, 99 Am. St. Rep. 35.

<sup>115</sup>*Public Utilities Commission v. Natorium Company*, 211 Pacific Reporter, 533, Dissent of Rice, C. J.

<sup>116</sup>Article by Chief Justice Shaw of the Supreme Court of California, *California Law Review*, September, 1922, p. 459. Quoted by Rice, C. J., in his dissenting opinion in *Public Utilities Commission v. Natorium Company*, 211 Pacific Reporter, 533.

owner of the soil, though in a qualified sense," the qualification consisting in applying the maxim, "Sic utere tuo ut alienum non laedas", and therefore limiting the owner of the soil to a reasonable use of the water which is recognized as his property.<sup>117</sup>

In the *Public Utilities Commission v. Natatorium Company* case, Boise City, Idaho, proceeded against the Natatorium Company, a firm engaged in supplying hot water from natural springs, in order to subject the rates charged by the firm to the control of the Public Utilities Commission of the State of Idaho. The Public Utilities Commission entered an order holding that the Natatorium Company was a public utility as to the sale of the use of hot water to certain inhabitants of Boise for heating and domestic purposes. The Natatorium Company appealed to the courts of the State from this order of the Public Utilities Commission, asserting that the hot water which they were supplying to their customers was private water and that there had not been such an unequivocal intention to dedicate such waters to a public use as would be required to constitute a basis for regulation of rates by the State. If, however, the waters concerned were public waters, the unequivocal intention to dedicate, and the dedication of the waters to a public use by the Natatorium Company, would not be necessary to give the Public Utilities Commission jurisdiction over the rates but the sale, rental, or distribution of the waters would be a public use and subject to the regulation and control of the State in the manner prescribed by law, and the use of the same would be controlled under the provisions of Article 15, paragraphs 1, 2 and 3 of the Constitution of Idaho.<sup>118</sup>

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<sup>117</sup>*Public Utilities Commission v. Natatorium Company*, 211 Pacific Reporter, 533.

"This case (*Katz v. Wilkinshaw*) was adopted as authoritative by the Supreme Court of Utah in the case of *Horne v. Utah Oil Refining Co.*, 202 Pac. 815."—Rice, C. J. *Op. cit.*

<sup>118</sup>" . . . The following are the provisions (of the Constitution) which should be considered:

"Const. art. 15, Section 1. The use of all waters now appropriated, or that may hereafter be appropriated for sale, rental, or distribution; also of all water originally appropriated for private use, but which after such appropriation has heretofore been, or may hereafter be sold, rented, or distributed, is hereby declared to be a public use, and subject to the regulation and control of the state in the manner prescribed by law.

"Sec. 2. The right to collect rates or compensation for the use of water supplied to any county, city, or town, or water district, or the inhabitants thereof, is a franchise, and cannot be exercised except by authority of and in the manner prescribed by law.

"Sec. 3. The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied. Priority of appropriation shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes

It was agreed by the dissenting judge that the records in the case did not show sufficient data upon which to base a conclusion that the Natatorium Company intentionally dedicated the water to a public use. Consequently, if the rates were to be held subject to the Public Utilities Commission it would have to be upon the ground that the water was public water of the states. The controlling opinion expressed the view that the water was not public water of the state;<sup>119</sup> the dissenting opinion expressed the

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shall (subject to such limitations as may be prescribed by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes. . . ." *Public Utilities Commission v. Natatorium Company*, 211 Pacific Reporter, 533. McCarthy, J., concurring.

<sup>119</sup>"I am not willing to subscribe to the theory that all waters within the borders of the state, which are found where nature places them, are public waters of the state, the property of the state, and solely under the control of the state wherever found. To carry this doctrine to its logical conclusion the owner of the fee who sinks a well upon his premises and discovers water has but a qualified ownership in the soil and a limited right only to the use of the water found therein. Any person may condemn a right of way across the owner of the fee's premises to the well and divert the waters of the well not then being used by the owner of the fee, upon the theory that the water placed there by nature is the property of the state and subject to appropriation, for which the owner of the fee is entitled to no compensation except for the right of way. To hold to such theory is going beyond a safe and reasonable interpretation of the right to appropriate public waters of the state as fixed by the statutes of this state . . .

"In my opinion the waters of these hot wells are not public waters, and were not when located by the original locators. Not being public waters, they were not subject to appropriation, except by the owners of the fee.

"The evidence conclusively shows that the ground where these wells are now located was boggy or swampy, and at most the waters at that time were only seepage or percolating waters arising through the intervening soil.

"In my opinion there is sufficient evidence to justify the conclusion that no natural springs, streams, or subterranean streams are cut off or interfered with by reason of the sinking of the wells and the gathering of the water at the depth found, into the pipes, or by reason of the use of pumps for the purpose of increasing the flow. This being percolating or seepage water, merely, arising out of the earth, without an outlet through any definite channel, and no part of any natural spring or stream, or any subterranean stream or flow, was not subject to appropriation, except by the owner of the fee. It was the property of the owner of the land upon which it stood, and under the well-recognized doctrine that percolating water existing in the earth belongs to the soil as a part of the realty, it may be used and controlled to the same extent by the owner of the land as itself. *Bruening v. Dorr*, 23 Colo. 195, 47 Pac. 290, 292, 35 L. R. A. 640."

Here the learned judge quotes from the case of *King v. Chamberlin*, 20 Idaho, 504, 118 Pac. 1099, as announcing the correct principle of law.

Continuing, the text of the opinion includes a quotation from *Metcalf v. Nelson*, 8 S. D., 87, 65 N. W., 911, 59 Am. St. Rep., 746.

"As the hidden water in the plaintiff's soil belonged to him as a part of it, he might, by artificial means, separate it from the soil, and it would still belong to him. He might sink a well, into which such water would work its way, and the accumulation in the well would still be his, and subject to his proprietary control. (*Davis v. Spaulding*, 157 Mass. 431, 32 N. E. 650, 19 L. R. A. 1021.) If the water which fills this spring is not subject to the law of running streams, but to that of percolating water, did the plaintiff lose his

view that the water in question was public water of the state.<sup>120</sup>

It is clear from the words quoted in the note just cited, that the judge who took the point of view that the water was public

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ownership of it when it appeared upon the surface? If a cloud had burst on plaintiff's land, and filled a cavity thereon with rain, it would while so confined, belong to plaintiff, and we are unable to see why or how the question of ownership can be made to depend upon which way the water comes from. Suppose this percolating water appeared at the surface only at the point of the spring, and at once sunk away again into the surrounding soil, resuming its character of wandering, seeping water, would the plaintiff's proprietary rights come and go with the appearance and disappearance of the water? It must be remembered that we are not dealing with a running stream, or with riparian rights, but simply with percolating waters which have combined and struggled to the surface on plaintiff's land. We think the plaintiff had more than the ordinary usufruct in the water of this spring, so long, at least, as it was held in the spring. He might consume or dispose of it all if he chose. He might convey it away in pipes, or carry it off in tanks. If medicinal, he might bottle it, and sell it for the healing of the nations. It would be inconsistent with the maintenance of such right in plaintiff to allow that the defendant or any other stranger had also the right, in hostility to the plaintiff, to take and carry away water from the same spring.' . . .

"These waters were not appropriated at any time for strictly private use, but were diverted for use in the Natatorium, for the purpose of heating the building and to temper the water for bathing purposes."—*Public Utilities Commission v. Natatorium Company*, 211 Pacific Reporter, 533. Budge, J.

"One who seeks to subject another to the jurisdiction of the Public Utilities Commission on the ground he has sold or rented public waters of the state has the burden of showing that the waters are of that character. The evidence in this case as to the nature of the source of the hot water in question is meager. Such evidence as there is does not show to my mind that the source is a subterranean stream with a natural channel, but rather that it is a spring, or well of percolating water, located entirely beneath appellant's land. I conclude that the evidence fails to show that appellant has rented or sold public waters of the state. The evidence is therefore insufficient to support the finding that it is a public utility by operation of the Constitution and statutes."—*Public Utilities Commission v. Natatorium Company*, 211 Pacific Reporter, 533. McCarthy, J., concurring.

<sup>120</sup>"The principal opinion holds that the water involved in this case is the private water of appellant as distinguished from public water of the state. If the water was private property of the appellant, it could not be impressed with a public use and subjected to the jurisdiction of the Utilities Commission without the consent of appellant, express or implied, for to do so would be to take its property without due process of law. From an examination of the record, I am unable to conclude that appellant intentionally dedicated the water to a public use. If, on the other hand, the water is public water of the state, appellant's right thereto is usufructuary only, and appellant cannot claim a vested right freed from the limitations and conditions under which the right may be exercised.

"The evidence submitted to the Commission does not disclose whether the source of the water supply is a subterranean stream, or a basin, or an underground lake, or water percolating through the soil. If the source of supply is an underground stream or a lake, it is thought that there can be no doubt but that it is public water and subject to the same rules of appropriation as surface water. If appellant's wells are fed by percolating water, the result should be the same . . .

"In the case of *Lux v. Haggin*, 69 Cal. 255, 4 Pac. 919, 10 Pac. 674, it was held that the adoption of the common law by that state had carried with it the law of riparian rights, which when they became vested could not be interfered with, except upon due compensation. In that state, and in several other Western states, the doctrine of riparian rights had been maintained and enforced in con-

water of the state, reached that conclusion by arguing that there should be no distinction, so far as determining the public or private character of the water is concerned, between the water

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nection with the antagonistic doctrine of water rights founded upon appropriation, which is generally known as the Colorado system. Idaho, early in its history, adopted the Colorado system. *Drake v. Earhart*, 2 Idaho (Hasb.) 750, 23 Pac. 541. The rights of a riparian owner always yield to the rights of an appropriator whenever they come in conflict. *Hutchinson v. Watson Slough Ditch Co.*, 16 Idaho, 484, 101 Pac. 1059, 133 Am. St. Rep. 125; *Schodde v. Twin Falls Land & Water Co.*, 224 U. S. 107, 32 Sup. Ct. 470, 56 L. Ed. 686.

"The doctrine of correlative or reciprocal rights in percolating water, being based upon the recognition of a qualified ownership in the water underneath the soil, is fraught with some difficulties which appeal to the minds of those accustomed to follow the principles of the Colorado system. In connection with this system, and as a necessary concomitant thereto, arose the principle of first in time first in right. Under the theory of correlative rights one may, under certain circumstances, improve his own land to the detriment or destruction of the crops, trees, and shrubbery of an adjacent proprietor, although the use by the adjacent proprietor of the percolating water may have been long prior in time. *Hudson v. Dailey*, 156 Cal. 617, 105 Pac. 748; *Burr v. Maclay Co.*, 154 Cal. 428, 98 Pac. 260. It would also seem to follow logically that a person who had developed a supply of water, fed from subterranean percolation upon unoccupied lands, at great expense, and carried the same to distant lands and applied it to a beneficial use, could be deprived of a portion or perhaps all of his source of supply by subsequent locators upon the adjoining lands who make a reasonable use of the percolating water. In the Utah case of *Horne v. Utah Refining Co.*, *supra*, it is not difficult to imagine a condition under which the first users of the water who had applied it to the growing of trees and shrubbery on their property for 25 or 30 years might be lawfully deprived of the use of the water or put to a great additional expense in raising it to the surface, if the right to the use of the water is fundamentally based upon the recognition of the ownership thereof, rather than upon that growing out of their right of appropriation.

"The climatic and other conditions of the state of Idaho, particularly the southern portion thereof, in common with that of many other western states, are similar to those obtaining in the state of California. The reasons for declining to apply the rules of the common law are fully as cogent here as there. It is submitted that these reasons are so powerful that it requires the repudiation of the principle of ownership in percolating water by the proprietor of the soil."

The occasion of the first statement of the common law doctrine was referred to by Mr. Chief Justice Rice as follows:

"*Acton v. Blundell*, 12 Mees. & W. 354, seems to be the case in which the common law doctrine was first stated. In that case the question, which was said to be one of equal novelty and importance, was stated as follows:

"Whether the right to the enjoyment of an underground spring, or of a well supplied by such underground spring, is governed by the same rule of law as that which applies to and regulates a water course flowing on the surface."

"It was stated that, considering the grounds and the origin of the law which was held to govern running streams and the consequences which would result if the same law was made applicable to springs beneath the surface, there is a marked and substantial difference between the two cases, and that they are not to be governed by the same rule of law. It was further stated that the rights enjoyed by the proprietor of land over which running streams flow were and always have been public and notorious; but in the case of a well sunk by a proprietor on his own land, the water which feeds it from his neighbor's soil does not flow openly in the sight of the neighboring proprietor, but through hidden veins in the earth beneath its surface. No man can tell what changes these underground sources have undergone in the progress of time, and no proprietor knows what portion of the water is taken from beneath his own soil, how much he gives originally, how much he transmits only, or how much he

of an underground stream or lake and a water supply fed by percolating water. "The evidence submitted to the Commission," wrote Mr. Chief Justice Rice, "does not disclose whether the source of the water supply is a subterranean stream, or a basin or an underground lake, or water percolating through the soil. If the source of supply is an underground stream or a lake, it is thought that there can be no doubt but that it is public water and subject to the same rules of appropriation as surface water." Then the significant statement is added that, "If appellant's wells are fed by percolating water, the result should be the same."

The basis of the argument that all underground waters, whether in an underground stream or lake or comprising a water supply fed by percolating water, should be regarded from the same point of view so far as determining their public or private quality is concerned, rests finally upon the idea of expediency. "Owing to the conditions in this state (Idaho)," said Mr. Chief Justice Rice, "full recognition should be given to the doctrine that all the water within its borders which is found where nature places it is the property of and under the control of the state wherever found, whether running in well-defined streams above or below the surface of the ground or percolating through the soil, and is subject to appropriation whenever capable of being

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receives. The court further considered the consequences resulting if the same laws were to be applied to the surface water and percolating water, reaching the conclusion that such results would be very serious. The final conclusion was as follows:

"Confining ourselves strictly to the facts stated in the bill of exceptions, we think the present case, for the reasons above given, is not to be governed by the law which applies to rivers and flowing streams, but that it rather falls within that principle which gives to the owner of the soil all that lies beneath its surface."

"It thus appears that the principle was not applied because of any inherent quality in the thing itself, but because of expediency in view of conditions existing in England at the time. Following the same method of reasoning, the considerations which furnished the grounds for the decision in that case lose their persuasive force when applied to the conditions existing in this state, where beneficial use of all available water is necessary to its fullest development.

"Owing to the conditions in this state, full recognition should be given to the doctrine that all the water within its borders which is found where nature places it is the property of and under the control of the state wherever found, whether running in well-defined streams above or below the surface of the ground or percolating through the soil, and is subject to appropriation whenever capable of being devoted to a beneficial use, except where prohibited by statute. The decisions of this court have been in accordance with this principle. See *LeQuime v. Chambers*, 15 Idaho, 405, 98 Pac. 415, 21 L. R. A. (N. S.) 76, *Josslyn v. Daly*, 15 Idaho, 137, 96 Pac. 568. In the case of *Bower v. Moorman*, 27 Idaho, 162, 147 Pac. 496, Ann. Cas. 1917C, 99, it is said:

"In the case of *LeQuime v. Chambers*, 15 Idaho, 405, 98 Pac. 415, 21 L. R. A. (N. S.) 76, the court says in effect, that percolating water is subject to appropriation under our statute, and as such will be recognized and protected by the courts."—*Public Utilities Commission v. Natatorium Company*, 211 Pacific Reporter, 533. Rice, C. J. Dissenting.

devoted to a beneficial use, except where prohibited by statute." A somewhat similar application of the idea of expediency was asserted by the Chief Justice to have been the basis upon which the earlier English court had proceeded when formulating the principle, first stated in *Acton v. Blundell*, that percolating water is to be regarded as a part of the soil in which it is found. Commenting upon that case, Mr. Chief Justice Rice declared, "It was stated that, considering the grounds and the origin of the law which was held to govern running streams and the consequences which would result if the same law was made applicable to springs beneath the surface, there is a marked and substantial difference between the two cases, and that they are not to be governed by the same rule of law. It was further stated that the rights enjoyed by the proprietor of land over which running streams flow, were and always have been public and notorious; but in the case of a well sunk by a proprietor on his own land, the water which feeds it from his neighbor's soil does not flow openly in the sight of the neighboring proprietor, but through hidden veins in the earth beneath its surface. No man can tell what changes these underground sources have undergone in the progress of time, and no proprietor knows what portion of the water is taken from beneath his own soil, how much he gives originally, how much he transmits only, or how much he receives. The court further considered the consequences resulting if the same laws were to be applied to surface water and percolating water, reaching the conclusion that such results would be very serious. The final conclusion was as follows: 'Confining ourselves strictly to the facts stated in the bill of exceptions, we think the present case, for the reasons above given, is not to be governed by the law which applies to rivers and flowing streams, but that it rather falls within that principle which gives to the owner of the soil all that lies beneath its surface.'" Whereupon the Chief Justice concluded, "It thus appears that the principle was not applied because of any inherent quality in the thing itself, but because of expediency in view of conditions existing in England at the time," and remarked that by following the same method of reasoning, the considerations which furnished the grounds for the decision in the English case lost their persuasive force when applied to the conditions existing in Idaho where beneficial use of all available water is necessary to the fullest development of the state.

Whether the controlling opinion or the dissenting opinion in the *Public Utilities Commission v. Natatorium Company* case comes to be the accepted law of the western states, it is quite probable that the question of the control of percolating water

will be an important one in adjusting the rights of the Upper and Lower Basins of the Colorado River area. If it be held that percolating water is a part of the soil, the owners of specific parcels of land in the Lower Basin will request their respective states to take action against Upper Basin states which permit the depletion of the supply of percolating water, thereby decreasing the return flow to the main stream for use nearer the river's mouth. If, on the other hand, it be held that percolating water is public water, the states themselves will initiate proceedings. The point to be observed is that the controversy presented on a small scale in the *Natatorium* case will be spelled out in capital letters when representatives of areas of the Lower Basin of the Colorado River assert that they have a right to the return flow of the Upper Basin, and the Upper Basin's adherents reply that such return flow is of necessity made up of percolating water which, either because it is a part of the realty or because it is public water of the state, need not be returned to the stream as a matter of right but may be allowed to return as a matter of grace.

The idea of property rights in water in interstate streams, a phase of the larger question of whether or not a state enjoys a relatively high degree of authority over water resources in interstate streams within its borders, has now been discussed from two points of view. In the first place the *Hamele-Bannister* controversy and the California and Colorado doctrines with respect to the origin of the right to use such water, have been examined; and, secondly, the nature of the property right in the use of percolating water, has been considered. We return now to a study of the constitutional bases of federal activity in different phases of the work contemplated in Colorado River development. An inventory and appraisal of the possible grounds of action by the national administration should contribute something to an understanding of the province of the federal government in making effective the provisions of the Colorado River Compact.

Navigability of the Colorado as one of the grounds of federal activity has been discussed in an earlier portion of this chapter. A number of other grounds, however, have also been suggested as affording a basis of action by the federal government. These will be considered in the succeeding paragraphs.

"The Federal Government," said Mr. Hoover at the first meeting of the Colorado River Commission in Washington in 1922, "is interested through its control of navigation, through protection of its treaty obligations, through development of national irrigation projects and through virtual control of power develop-

ment depending upon the use of public lands."<sup>121</sup> Mr. Hamele, when requested to state what he considered the federal rights to be, declared that they included, first, "the paramount right of navigation, which affects flood control." Continuing, his words were: "The United States also has the ownership, I believe, of all of the unappropriated water of the Basin.<sup>122</sup> It has an interest in the building of irrigation works under the national irrigation

<sup>121</sup>Colorado River Commission, *First Meeting*, Department of Commerce, Washington, Jan. 26, 1922, 10 A. M., p. 3.

<sup>122</sup>The question of property rights in unappropriated water has been found to be the chief issue in the California and Colorado doctrines. Likewise, as late as the twenty-second meeting in the proceedings of the Colorado River Commission leading to the Compact, the minutes show confusion of thought on the question of whether or not the ownership of such water and the authority to divide it rests in the federal government.

"CHAIRMAN HOOVER: I find myself a little confused. I sit here under a specific act of Congress which provides a compact shall be made, or may be made, by the states for the division and apportionment of the water,—I forget the exact language,—and if the ownership of this water and the authority to divide it rests in the federal government it would seem an anomaly for Congress to have passed an act directing such a conference as this and sending a federal delegate to it.

"MR. HAMELE: As I view it, Mr. Chairman, it is an attempt in a practical way to work out this solution without a fight and that that is all it is as far as the federal government is concerned. The federal government doesn't desire to take a drop of water from any of these states. It has no use for it as a government. The uses will be taken care of within the states.

"CHAIRMAN HOOVER: Do we not amply secure that question by providing that this division and apportionment of the water shall be subject to the approval of the Congress of the United States, and equally that any further apportionment shall be subject to the approval of the United States? It seems to me we have amply protected that particular right.

"MR. HAMELE: I understand from expressions of members of this Commission that it is their thought that the compact as proposed amounts in substance to a quit claim deed of all the rights of the United States which have been referred to, except those that are reserved. . . .

"CHAIRMAN HOOVER: I don't believe that there is any such statement in the record. (I have the feeling that the very process here is a process carried on under the assumption that the federal government may have a right to the unappropriated waters and it has by this method secured their division.)

Note: Careful observation and study of the manuscript of these minutes lead me to believe that Mr. Hoover deleted the material in parenthesis. Carbon copies of the original draft of the minutes were referred to the members of the commission for correction. This particular copy bore the initials H. H., and a line had been drawn through the designated sentence.

"MR. HAMELE: That can be very persuasively argued to the contrary and it seems to me there ought to be some expression in this compact with certainty upon that subject so that it can be intelligently passed upon.

"CHAIRMAN HOOVER: An expression reserving the unappropriated waters destroys the entire basis and sense and purpose of this whole Commission.

"MR. HAMELE: That would be true if the claimant of the unappropriated water were some adverse interest, that would be absolutely true then, but it is not true when you consider the relation that the United States has to these seven states, as I view it.

"CHAIRMAN HOOVER: Well, we have provided here for an apportionment. That apportionment is not yet appropriated water. If the federal government should intervene and say that the unappropriated water was its possession and province, it would destroy this entire apportionment between the seven states."—

act. It has rights under the Federal Water Power Act that possibly don't conflict with anything in this compact, but there are possibilities that we could conceive of by which that Act could be amended so that those rights might become in conflict with this compact unless they were reserved. It also has rights in connection with its treaties with the Indian tribes."<sup>123</sup> Mr. Bannister is on record as favoring ownership of a Colorado River dam by the federal government because, "in the first place, the Federal Government has lands in California and Arizona, and it ought to control the agency by which the reclamation is to be made. In the second place, if private companies are to be the owners and operators of private plants at the dam, the ownership by the Government of the dam would be a means of exercising proper supervision and control over those operators in order that their service to the public will be what it ought to be, and, in the third place, if the Senate and the President should conclude a treaty with old Mexico with respect to the waters of the river and allow Mexico a part of them, then the Government should be in control of or be the owner of the reservoir in which the water is to be stored, so that obligation may be met."<sup>124</sup>

These remarks of Messrs. Hoover, Hamele, and Bannister do not include a reference to all possible grounds of federal activity in Colorado River development. A more nearly complete enumeration would add the assertion that the interstate nature of the stream constitutes a ground of federal action. In this connection, some have called attention to the fact that the river forms a boundary between states, that it cuts across state lines, and that the electrical energy which it is contemplated shall be developed, will form an important item in interstate commerce. From other quarters, the suggestion has been made that the federal government should proceed under the Rivers and Harbors Act or under the Flood Control Act or possibly by means of a commission appointed by the Supreme Court, leaning heavily upon the power of eminent domain or the police power of the federal government for the authority necessary in the actual working out of details.<sup>125</sup>

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Colorado River Commission, *Twenty-second Meeting*, Bishop's Lodge, Santa Fe, N. M., Nov. 22, 1922, 10 A. M., pp. 31-32.

<sup>123</sup>Colorado River Commission, *Twenty-second Meeting*, Bishop's Lodge, Santa Fe, N. M., Nov. 22, 1922, 10 A. M., pp. 27-28.

<sup>124</sup>*Hearings*, H. R. 2903, Part I, p. 227, Feb. 21, 1924.

<sup>125</sup>An outline statement of the possible grounds of federal action in Colorado River development may be presented as follows:

- A. Navigability.
- B. Public Lands.

We now turn to the second of the alleged grounds of federal activity,<sup>126</sup> the authority of the federal government to proceed with Colorado River development because of its constitutionally imposed responsibilities in the care of public lands. "Article 4, section 3, of the Constitution gives to Congress the power 'to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States.'<sup>127</sup> "Congress has full power to dispose of the public lands and property of the United States and to place such reservations and restrictions thereon as it may consider desirable."<sup>128</sup> "It (the federal government) has the right to construct a dam upon its own land."<sup>129</sup> These are some of the assertions made by those thinking of the public lands as a possible basis of government activity.<sup>130</sup>

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C. Federal Power Commission.

D. Reclamation Service.

E. International Status.

F. Interstate Status

G. Rivers and Harbors Act; Flood Control Act

H. Eminent Domain of Federal Government; Police Power of Federal Government.

<sup>126</sup>The first, navigability, has been discussed.

<sup>127</sup>Federal Power Commission, *First Annual Report*, Washington, Government Printing Office, 1921, p. 43.

<sup>128</sup>Hamele, Ottamar, and O'Hara, James J., *Joint Memorandum for Mr. Stetson* (undated manuscript).

"The following are a few of many cases bearing upon this right; Van Brocklin v. Tenn., 117 U. S. 151; Hallowell v. U. S., 221 U. S. 324; Utah Power etc. Co. v. U. S., 230 Fed. 336; Scott v. Sanford, 19 How. 612; Pollard v. Hagan, 3 How. 212; Illinois Central Railroad Co. v. Illinois, 146 U. S. 434; Ableman v. Booth, 21 How. 525; Permolli v. First Municipality, 3 How. 609; McKinney v. Saviago, 18 How. 240; Cummings v. Missouri, 4 Wall. 319; Ward v. Race Horse, 163 U. S. 514; Coyle v. Smith, 221 U. S. 559; U. S. v. Sandoval, 231 U. S. 28."—*Joint Memorandum for Mr. Stetson*.

<sup>129</sup>Hamele, Ottamar, *Hearings*, H. R. 2903, Part V, p. 886, March 25, 1924.

"I find nothing in the Act (Colorado River Commission Act of August 19, 1921, Public No. 56, 67th Congress) which can be considered as authorizing any surrender by the United States of any jurisdiction it may have over the river as a navigable water of the United States, or of any rights which the United States may have as owner of the public lands and reservations through which the river runs. On the contrary, the Act expressly provides for a representative to be appointed by the President 'for the protection of the interests of the United States,' and the jurisdiction of the Commission is limited to the negotiation of a compact or agreement between the several States for the settlement of their conflicting claims, which shall not be binding 'until the same shall have been approved by the legislature of each of said States and by the Congress of the United States.'"—Call, Lewis W., Chief Counsel, Federal Power Commission, *Memorandum for the Executive Secretary of the Federal Power Commission*, Washington, Feb. 1, 1922.

<sup>130</sup>For a statement showing the area of land unappropriated and unreserved on July 1, 1924, in the seven states immediately concerned in the Colorado River Compact, see *Vacant Public Lands on July 1, 1924*, Circular No. 959, Department of the Interior, General Land Office, Washington, D. C., July 1, 1924, pp. 3, 4-7, 15-16, 19-20.

Certain limitations upon the power of Congress to deal with the public lands have been suggested by students of the question. "Congress has the power absolutely to control, regulate and dispose of the public lands, but under the guise of terms of control or disposal no new power can thereby be vested in the United States, or the rights reserved unto the states, or their property, be destroyed," according to Mr. John Franklin Shields of Philadelphia.<sup>131</sup> Mr. Shields also raised the question of whether or not the laws of the several states or the regulations of Congress would control a particular situation if the United States itself as an owner of public lands is subject to the riparian laws of the states where its lands are situated, at the same time that Congress has the authority to make all necessary rules and regulations concerning the public lands.<sup>132</sup>

A third ground of federal action is found in the jurisdiction of the Federal Power Commission established by the Federal Water Power Act of June 10, 1920. The first annual report of that commission asserts that, "since the lands of the United States are not subject to condemnation or to any form of disposition by State authority, the power of fixing conditions under which lands necessary for power development may be occupied and used for such purposes rests in Congress alone."<sup>133</sup>

"Prior to the passage of the Federal Water Power Act the administration of water powers under Federal jurisdiction had

For information concerning the irrigable area of public land included in various irrigation projects, see *Statistics from the Twenty-third Annual Report* (pamphlet), Department of the Interior, Bureau of Reclamation, Washington, Government Printing Office, 1924, 21451-24-1.

National forest areas on June 30, 1924, may be located by reference to *National Forest Areas, June 30, 1924*, United States Department of Agriculture, Forest Service, William B. Greeley, Forester, Compiled by the Branch of Engineering, Washington, Government Printing Office, 1924, Misc. O-11.

<sup>131</sup>Shields, John Franklin, *The Federal Power Act*, 73 University of Pennsylvania Law Review and American Law Register, 142, 149. January, 1925.

Mr. Shields cites the cases of *McCulloch v. Maryland*, 4 Wheaton, 316, 423, and the *United States v. Joint Traffic Association*, 171 U. S., 505, in support of his statement. The words of *McCulloch v. Maryland* are as follows:

"Should Congress, in the execution of its powers, adopt measures which are prohibited by the Constitution; or should Congress, under the pretext of executing its powers, pass laws for the accomplishment of objects not entrusted to the government; it would become the painful duty of this tribunal, should a case requiring such a decision come before it, to say that such an act was not the law of the land."

<sup>132</sup>"Such title (to the shore and lands under water) being in the State, the lands are subject to state regulation and control, under the condition, however, of not interfering with the regulations which may be made by Congress with regard to public navigation and commerce."—*Hardin v. Jordan*, 140 U. S., 371, quoted in *Kansas v. Colorado*, 206 U. S., 46, 94.

<sup>133</sup>Federal Power Commission, *First Annual Report*, Washington, 1921, p. 43.

been divided between three executive departments—Agriculture, Interior, and War—responsible, respectively, for the water powers upon national forests, upon public lands and certain reservations, and upon navigable waters. The Departments of Agriculture and Interior operated under the act of 1901. The War Department approved the plans of projects authorized by special acts of Congress under the terms of the act of 1910, and exercised general supervision over their construction. By the passage of the Federal Water Power Act the jurisdiction previously exercised by the three individual departments is now concentrated in the Federal Power Commission, making it possible to establish a uniform policy and to coordinate more effectively the activities of the several agencies hitherto charged with individual responsibility.”<sup>134</sup>

It has been said that the approval of the Federal Water Power Act on June 10, 1920, marked the end of the period of discussion and controversy which for more than a decade had raged both in Congress and outside over a national policy with respect to water powers under Federal control. “The laws previously governing the administration and disposition of water powers had been passed, the one in 1901 and the other in 1910, at a time when there was little appreciation of the role which electric power would play in transportation and in industry, or of the safeguards which, in the disposition of this national resource, would be required in the interests of the investor as well as of the public. For many years Federal laws had been wholly unsuited to prevailing conditions. The rights granted were so insecure and the liabilities imposed so uncertain that only in occasional instances could water-power development which required Federal authority be financed; with the result that the development of the inexhaustible water-power resources was largely blocked and recourse was had to steam power with its consequent use of coal.”<sup>135</sup> However, a “flood of applications” followed the passage of the act of 1920, and the projects on which construction had already started in 1921 under license issued by the Federal Power Commission, notwithstanding the industrial depression and the uncertain financial situation then prevailing, was asserted to be “abundant evidence both of the extent to which former legislation stood in the way of power develop-

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<sup>134</sup>Federal Power Commission, *First Annual Report*, Washington, 1921, p. 10.

The text of the Federal Water Power Act may be consulted in Vol. 41 U. S. Statutes at Large, p. 1063. It has been reprinted in the *First Annual Report*, Part II, Appendix A, of the Federal Power Commission, pp. 67-81.

<sup>135</sup>Federal Power Commission, *First Annual Report*, Washington, 1921, p. 5.

ment, and of the generally satisfactory character of the present legislation."<sup>136</sup>

The jurisdiction of the Federal Power Commission over the public lands, reservations, and waters of the United States is not as broad as the jurisdiction of Congress. Congress, according to the first annual report of the Commission, has authority over all forms of use, whereas "the Commission is limited to the consideration of projects designed to produce water power. Structures or diversions having any other purpose, unless incidental to works constructed for power purposes or a necessary part of a comprehensive scheme of development, are not within the jurisdiction of the Commission. Projects constructed under any permit or authority granted prior to the approval of the act are, so long as such permit or authority remains in force, exempt from the terms of the act and are not within the jurisdiction of the Commission. The Commission, furthermore, is limited to the licensing of such projects as are undertaken in compliance with the laws of the State with respect to beds and banks, to the appropriation, diversion and use of water for power purposes, and to the right to engage in any business necessary to effect the purposes of the license."<sup>137</sup>

Under the Federal Water Power Act, an applicant for a power project may secure a license for a term not exceeding

<sup>136</sup>Federal Power Commission, *First Annual Report*, Washington, 1921, p. 5.

During the first year of the Federal Power Commission's activities under the Federal Water Power Act of June 10, 1920, there were filed with the Commission applications for the development of more than five times as many units of horsepower of electric energy within thirty-three of the states, the District of Columbia, and the Territory of Alaska, as had been filed for projects from all parts of the United States during the preceding fifteen years.—Federal Power Commission, *First Annual Report*, 1921, pp. 20, 21, 24.

<sup>137</sup>*Ibid.*, pp. 51-52.

"Within the limits above named the jurisdiction of the Commission extends to all public lands and reservations of the United States except national parks, national monuments and allotted Indian lands, and to all dams or other works constructed or owned by the United States. Outside of the public lands and reservations the jurisdiction of the Commission involves two classes of streams; first, those streams which are defined in the act as 'navigable waters', over which the Commission has direct jurisdiction, and in which development can not lawfully be made without its prior approval; and second, those non-navigable tributaries of navigable waters in which power development by altering the natural flow would affect the navigable capacity of the navigable waters. The second class comes under the jurisdiction of the Commission only when declarations of intention to construct dams within them are filed with the Commission.

"The construction of power projects on streams of the first class, that is 'navigable waters', without first securing a license under the Federal Water Power Act would be subject to the penalties prescribed by that act and by the act of March 3, 1899, which prohibits without prior approval 'the creation of any obstruction . . . to the navigable capacity of any of the waters of the United States'."—*Ibid.*, p. 52.

fifty years. "The license is a contract between the Government and the licensee, expressly contains all the conditions which the licensee must fulfill, and, except for breach of conditions, cannot be altered during its term either by the Executive or by Congress without the consent of the licensee."<sup>138</sup>

Litigation arising in the State of New York relative to the constitutionality of the Federal Water Power Act, raises a number of questions of vital concern to the states interested in Colorado River development.<sup>139</sup> On November 15, 1922, documents

<sup>138</sup>Federal Power Commission, *First Annual Report*, Washington, 1921, p. 50.

"If a licensee fails to commence construction under his license it can be canceled by executive action, but after construction has started, only by judicial action, and then only if no other appropriate legal remedy is available.

"When the license period expires the United States may take over the properties of the licensee for its own use, permit them to be taken by another, or issue a new license to the old licensee. If the properties are taken away, the licensee must be paid his 'net investment' in the properties, an amount equal to the actual investment plus severance damages and less such sums in depreciation and amortization reserves as have been accumulated during the period of the license after having received a fair return upon the investment. If the license is renewed, it must be 'upon reasonable terms.' . . . .

"The licensee is required so to plan his project that it will conform to a scheme of development providing for the fullest reasonable utilization of the resources of the stream. He must maintain his plant in good operating condition, make the necessary replacements of worn out or obsolete equipment, provide out of earnings adequate depreciation reserves for such purpose, and maintain a system of accounting in such form as may be prescribed. He must also pay reasonable annual charges for reimbursing the United States for a proper share of the cost of administration of the act and for recompensing it for the use of its land or other property.

"In addition to the issuance and administration of licenses, the Commission created by the act is authorized to make investigations of wide scope, and is given jurisdiction over the regulation of rates, services and securities in intrastate business wherever the several States have not provided agencies for regulating such matter themselves, and in interstate business whenever the individual states have not the power to act or can not agree. The Commission is required to pass upon applications for entry to lands in power-site reserves, to find whether the construction of proposed power projects in the non-navigable tributaries of navigable streams will affect interstate or foreign commerce, to investigate the value of power available at Government dams and the advisability of the development of such power by the United States for its public purposes, to determine, whenever any licensee makes use of a headwater improvement of another licensee or of the United States, the proper share of the annual cost of such improvement which should be paid by the licensee benefited, and to fix the fair value of any project already constructed which is brought under the provisions of the act."—*Ibid.*, pp. 50-51.

<sup>139</sup>"MR. HAYDEN: Is the constitutionality of the Federal Water Power Act under consideration by the Supreme Court of the United States at this time?"

"MR. MERRILL: There are cases pending before that court.

"MR. HAYDEN: What is the status of the cases?"

"MR. MERRILL: A bill was filed by the State of New York—I can not give the date, about two years ago—and replies were made on behalf of the United States. Later the State of New York asked permission to file an amended bill and the reply was made to the amended bill and the matter now rests. Subsequently the State of New Jersey filed a bill in the Supreme Court (No. 22 Original, October Term, 1924) presenting practically the same grounds the State

were filed with the Supreme Court of the United States in the case to which reference has just been made, *New York v. Daugherty et al*, for the purpose of having the Federal Water Power Act of 1920, and the activities of the Federal Power Commission thereunder, declared unconstitutional. Four different projects were involved in the case, the disputed point being whether or not the Federal Power Commission was justified in requiring that licenses be obtained by the State of New York before the further development of any of these projects. According to the amended bill, the State of New York had not made and did not propose or intend to make any application to the Federal Power Commission for any preliminary permit or license under the Federal Water Power Act. The reason for this position was asserted to be that the acceptance by the state of any license which the Federal Power Commission could grant under the Federal Water Power Act would necessarily involve the abandonment by the state of substantially all its rights to develop and utilize the potential water power at the respective sites.

This case, however, was temporarily abandoned "because it was not thought that the issues had been sharply enough defined to favor a clean-out decision upholding the constitutional rights of the State."<sup>140</sup> It was not until April of 1925 that announcement was made that Charles E. Hughes, former Secretary of State, had been retained to uphold the power rights of the state in its boundary streams against encroachments by the federal government. Mr. Albert Ottinger, Attorney General of the State of New York, successor of Attorney General Carl Sherman under whose direction the litigation had been commenced, when announcing the designation of Mr. Hughes as Special Deputy Attorney General, declared that, "the scope of the question involved is far greater than the contention of the State of New York. The issue presents a timely opportunity to fight for the preservation of State's rights as against the steady encroachment and centrali-

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of New York had presented. On the request of the Attorney General of the State of New Jersey the action upon that case is suspended until the October term of the United States Supreme Court. . . .

"MR. HAYDEN: What is the basis of the litigation?"

"MR. MERRILL: Largely on the contention that the authority over the waters within the State, even of navigable streams, rest within the State itself, and that the Federal Government's authority is limited solely to matters affecting the navigation as such, the contention being, for example, that the United States could not grant a license for a dam in the St. Lawrence River, irrespective of its effect on navigation, to any degree greater than that dam was required for the purposes of navigation.

"I think that is the general position that the State takes, that any authority to use the water of the river or use a dam for power development is derived exclusively from the state."—*Hearings*, H. R. 2903, Part V, p. 1076, April 2, 1924.

<sup>140</sup>New York Times, *Hughes to Conduct State's Power Case*, April 22, 1925.

zation of power in the Federal Government—a contest which will enlist the united sympathy of all of the States.”<sup>141</sup>

<sup>141</sup>New York Times, *Hughes to Conduct State's Power Case*, April 22, 1925.

The question of the degree to which the federal government has authority to derive incidental benefits in the form of water power developed as the result of a stream controlled primarily for purposes of navigation, has given some trouble to the courts. In the case of *Alabama Power Company v. Gulf Power Company et al*, 283 Fed., 606, (1922) it was urged that the Federal Water Power Act of June 10, 1920, is an attempt on the part of Congress to invade the right of the state and to take away from the state the control and regulation of hydro-electric development; that it infringes upon the authority of the state in the matter of the transmission and distribution within the state of electric energy generated therein; that its effect is to put the government of the United States into the business, not only of generating, but of transmitting and distributing intra-state and interstate power originating at the dams constructed under the government license, which generation, transmission, and distribution is aside from or beyond any governmental purposes but is for the benefit of private corporations or persons licensed to construct the dams on navigable streams and therefore unconstitutional.

Concerning this question, District Judge Clayton of the District Court for the Middle District of Alabama, Montgomery, wrote: "It might be that, if Congress had adopted a plan for the sole purpose of damming up navigable streams in order to generate and sell water power, such an act would be in excess of the Constitution. The far-reaching effect of such federal policy would be a departure from that manifested by the Act now under consideration. This enactment is for the improvement of the navigability of the stream. This is the paramount object. But an act which could be reduced to the isolated proposition that the Federal government can dam up streams for the sole purpose of generating hydro-electricity and sell the same might be obnoxious to the organic law. I think it would be palpably in excess of the powers granted to Congress by the Constitution. *United States v. Gettysburg, etc., Co.*, 160 U. S. 680; *Henderson v. City of Lexington*, 132 Ky., 390, 111 S. W., 318, 22 L. R. A. (N. S.) 20; *Shoemaker v. United States*, 147 U. S., 282, 13 Sup. Ct., 361, 37 L. Ed. 170; *Fallbrook Irrigation District v. Bradley*, 164 U. S., 112, 17 Sup. Ct., 56, 41 L. Ed., 369; *Hairston v. D. & W. Ry. Co.*, 208 U. S. 598, 28 Sup. Ct., 331, 52 L. Ed., 637, 13 Ann. Cases, 1008; *Sears v. Akron*, 246 U. S. 242, 38 Sup. Ct., 245, 62 L. Ed., 688."—*Alabama Power Company v. Gulf Power Company et al.*, 283 Fed., 606, 613 (1922).

Likewise, the question of the constitutionality of the recapture clause of the Federal Water Power Act has been raised in certain quarters.

"The terms provided under the Act upon which the United States may recapture, or take over, a project, are in fact an attempt to exercise eminent domain without the due process of law and just compensation provided by the Fifth Amendment to the Constitution. Congress may determine the public use but the United States, through its executive or legal representatives, cannot fix the price if a property is 'taken.' Requiring, as a condition of a license, an 'agreement' to determine the 'just compensation' for the future taking of a property by the original cost thereof does not square with a free will bargain and it would not, in fact, be the 'fair value' at the time of taking.

"The words 'due process of law' are intended to secure the individual from the exercise of governmental powers unrestrained by the established principles of private rights and distributive justice. (*Bank of Columbia v. Okely*, 4 Wheaton 235). The right to take private property for public use can be exercised only upon the condition that just compensation for the property at the time of taking is paid. (*Garrison v. New York*, 21 Wall. 196; *Great Falls Mfg. Co. v. Atty. General*, 124 U. S. 581, 599). If an Act of Congress could require a license and then enforce as a condition of the license that the compensation (in the event of the Government taking the property covered by the license) shall be otherwise than the fair value thereof at the time of taking, the result would

With respect to the asserted jurisdiction of the Federal Power Commission, therefore, our conclusion must be that it has not yet been firmly established as a ground of federal action in Colorado River development. However, the practice of applying to this body for licenses has become well established, and it is quite likely that the jurisdictional challenges will be satisfactorily answered by counsel for the commission in pending litigation.<sup>142</sup>

It is asserted by some of those who would have the federal government engage in Colorado River development, that the Reclamation Service of the national government is a proper agency for such action.<sup>143</sup> To go into this matter in detail would involve a careful investigation of the history of the reclamation policies of the federal government over a long period of years, and will not be attempted as a part of this study.<sup>144</sup> It should be noted, however, as one of the grounds of federal action in Colorado River development.

Still another argument advanced for the activity of the federal government in the improvement of the Colorado River is that the stream is an international one. In the event of a treaty

be pro tanto to destroy the purport of the Amendment. Determination of the fair value is a judicial, not a legislative procedure, under the Fifth Amendment."—Shields, John Franklin, *The Federal Power Act*, 73 University of Pennsylvania Law Review and American Law Register, 142, 153.

<sup>142</sup>"A total of 512 applications had been filed to and including June 30, 1924, 87 of which were filed during the past year."—Federal Power Commission, *Fourth Annual Report*, 1924, p. 25.

<sup>143</sup>"There is another Act, and that is the Reclamation Act, under which in my opinion this project could be constructed."—Pittman, Key (Senator from Nevada), Colorado River Commission, *Minutes of Second Meeting*, Department of Commerce, Washington, January 27, 1922, 2:30 P. M., p. 56.

<sup>144</sup>"For your assistance in locating the original (Reclamation) Act, I will say that it is Chapter 1093, 3rd U. S. Stats. 388."—Swing, Phil D. House of Representatives, Washington, 11th Dist. California, *Letter of November 14, 1922*.

"Regarding the legal features, the office does not have available for ready reference a compilation of citations to leading court cases, but you will find a decision on the particular matter referred to in your letter in *Burley v. United States*, 179 Fed. Rep. 1 and 172 Fed. Rep. 615. Other important Reclamation decisions will be found in *Swigart v. Baker*, 229 U. S. 187; *United States v. Hanson*, 167 Fed. Rep. 881, *Griffiths v. Cole*, 264 Fed. Rep. 369; *United States v. Haga*, 276 Fed. Rep. 1; *United States v. Ramshorn Ditch Co.*, 254 Fed. Rep. 842; *United States v. Ide*, 277 Fed. Rep. 373; *Colorado v. Wyoming*, 259 U. S. 419-496, and 260 U. S. 1; *Twin Falls Canal Co. v. Foote*, 192 Fed. Rep. 583; *Nampa and Meridian Irrigation District v. J. B. Bond*, 283 Fed. Rep. 569 and 268 Fed. Rep. 541. This last named decision was affirmed by the Supreme Court in a decision rendered April 13, 1925."—Dent, P. W., Acting Commissioner, Bureau of Reclamation, Department of the Interior, Washington, *Letter of April 24, 1925*.

Several references to newspaper articles which form a small part of the current literature on the subject, may be cited: *New York Times*, Dec. 15, 1924, *Paying for Reclamation* (editorial); *Los Angeles Times*, Jan. 10, 1925, *Reclamation Act Indorsed*; *New York Times*, May 15, 1925, *Wanted: Irrigation Farmers* (editorial); *Los Angeles Times*, Oct. 23, 1925, *Reclamation Ills Recited*.

being entered into between the United States of America and the United States of Mexico by the terms of which the Washington government might bind itself to assume some degree of control and management of the river, it is quite likely that the federal government of the United States would possess an authority with respect to the control of the stream which otherwise would be lacking.<sup>145</sup>

If the determination of the respective shares of water is a proper subject of negotiation by treaty between the United States and Mexico, that particular exercise of the treaty-making power would be superior to conflicting state legislation which might look to a different basis of division.<sup>146</sup> This being the case,

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<sup>145</sup>"The sole power of making and enforcing treaties resides, in this country, in the government of the United States under the provision of Article 2, section 2, of the Constitution."—Federal Power Commission, *First Annual Report*, 1921, p. 44.

"As to the Colorado River, the fact that it is an international stream does not confer upon the Federal Government any greater power or right in respect to the control of the stream than the Government would have if the stream were not international, unless the Government should go ahead and make a treaty with Mexico, in which the Government might bind itself to assume some degree of control and management of the river in which event, and only in which event, the Government would possess an authority which otherwise would be lacking."—Bannister, L. Ward, *Letter of February 21, 1924, to Hon. Addison T. Smith* (Chairman of the Committee on Irrigation and Reclamation, House of Representatives, Washington), *Hearings*, H. R. 2903, Part I, pp. 206-207, February 20, 1924.

For the texts of treaties and conventions between this government and Mexico, reference is made to Malloy, William M., *Treaties, Conventions, International Acts, Protocols and Agreements between the United States of America and Other Powers*, 3 vols., Washington, Government Printing Office, 1910, 1923.

It may be noted in this connection that there was proclaimed on Jan. 16, 1907, a convention between the United States of America and the Mexican government providing for equitable distribution of the waters of the Rio Grande for irrigation purposes. The first article of that convention is as follows: "After the completion of the proposed storage dam near Engle, New Mexico, and the distributing system auxiliary thereto, and as soon as water shall be available in said system for the purpose, the United States shall deliver to Mexico a total of 60,000 acre-feet of water annually, in the bed of the Rio Grande at the point where the head works of the Acequia Madre, known as the Old Mexican Canal, now exist above the city of Juarez, Mexico."—Malloy, William M., *Treaties, Conventions, International Acts, Protocols and Agreements between the United States of America and Other Powers*, Vol. I, p. 1202.

<sup>146</sup>"The Constitution does not specify the subjects upon which the treaty-making power may act, but it extends to all proper subjects of negotiation (*De Geofroy v. Riggs*, 133 U. S. 258; *Ft. Leavenworth R. Co. v. Lowe*, 114 U. S. 525) and is superior to conflicting state legislation (*Georgia v. Brailsford*, 3 Dallas 199; *Society, etc. v. New Haven*, 8 Wheat. 464; *Pollard's Lessee v. Kibbe*, 14 Pet. 353; *Baker v. Portland*, 5 Sawyer 566; *In re Parrott*, 6 Sawyer 349; *Soon Hong v. Crowley*, 113 U. S. 703). The power, it has been said, does not permit what other provisions of the constitution forbid nor does it authorize a change in the character of the government, nor the cession of territory of a state, without its consent (*De Geofroy v. Riggs*, 133 U. S. 258; *Boudinot v. United States*, 11 Wall. 616)."—Grimshaw, Ira L., *Legal Statement on Problems of St. Lawrence River Development*, Feb., 1925.

it is quite likely that a basis of division worked out by interstate compact might be held to be ineffective in case a different basis of division were determined by treaty, that is, in case the terms of a treaty were such that the interstate division contemplated by interstate compact could not be made effective because of the international division provided by international treaty.

By reason of the interstate character of the Colorado River it has been argued frequently that the federal government itself should engage in the development, or at least exercise effective control of any development which may be undertaken. Governor Emmet D. Boyle, Nevada, declared that the positions taken by the several states immediately interested in the Colorado River question "rather forced the conclusion that there was no other agency that could carry on this development than the Federal Government."<sup>147</sup> Likewise, Mr. Ballard, General Manager of the Southern California Edison Company stated that "the distribution of electric power from Colorado River power sites is really an interstate matter which should be entrusted to such agency only as has freedom of interstate action, either the United States Government itself, or some other agency created by it, or under regulation by it."<sup>148</sup> He also asserted that "the best agency of that kind is a public service corporation."<sup>149</sup> Mr. C. E. Grunsky, consulting engineer of the C. E. Grunsky Company of San Francisco, and president of the American Society of Civil Engineers, is on record as having expressed the opinion that "no reasonable regulation of the flow of the Colorado River by storage appears to be feasible except with the approval of and under the control of some higher authority than that of the individual States . . . The Federal Government is the agency which, logically, should effect the regulation and apportion the output."<sup>150</sup>

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Other references cited by Mr. Grimshaw include: *Askura v. City of Seattle*, decided May 26, 1924; 1 *Butler, Treaty-Making Power*, Sec. 3; *Missouri v. Holland*, 252 U. S. 416; *Fairfax v. Hunter*, 7 Cranch 603; *Chirac v. Chirac*, 2 Wheat., 259; *De Geofroy v. Riggs*, 133 U. S. 258; *Hopkins v. Bell*, 3 Cranch 453; 2 *Butler, Treaty-Making Power*, Sec. 445; *United States v. Chandler Dunbar Co.*, 229 U. S. 53, 66-67; 1 *Moore, International Law*, 675; 1 *Hyde, International Law*, 320.

<sup>147</sup>*Hearings*, H. R. 2903, Part IV, p. 589, March 18, 1924.

<sup>148</sup>*Ibid.*, Part III, p. 479, March 12, 1924.

<sup>149</sup>*Ibid.*

"We think that if the Government will move along the lines of the flood control question, that the people in our own territory and the investors throughout the country could be relied upon to finance the power development through the purchase of securities of our company and other power companies, which securities are taxable. The United States would supervise the whole operation, and State commissions would regulate all of our activities."

<sup>150</sup>Grunsky, C. E., *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, Nov., 1924, No. 9, p. 1482.

Additional illustrations of similar statements might be given.<sup>151</sup> They all indicate an attitude of mind which is not materially helpful in the solution of our problem. The line of reasoning which characterizes all the assertions may be epitomized as follows: The problems raised by proposed plans of Colorado River development reach beyond the limits and the interests of a single state; therefore, the national government is the means by which these problems are to be met. I deny the alleged result, and it will be my purpose in another portion of this thesis to show that a plan of regional control may be worked out under the clause of the Constitution dealing with interstate compacts, thus relieving the national government from the strain incident to the administration of problems of less than national though greater than state importance.

Among the Acts of Congress to which reference is made as grounds of federal action in Colorado River development are

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<sup>151</sup>"It will be necessary to have somebody who is disinterested, somebody who has the machinery for collecting the facts, and to determine whether the facts do demand certain drastic action, and to give flood control and irrigation and municipal supply preference over power is a dead letter unless there is somebody who is interested and competent to enforce it. . . . It is absolutely necessary to have that control in one management."—Davis, A. P., *Hearings*, H. R. 2903, Part VII, p. 1453, April 19, 1924.

"It seems clear that the circumstances call for the co-ordination of Federal and state authority and for the harmonious co-operation of the states so that electric current, whether from water power or steam power, will be turned over to the distributing units in the receiving states free of any excessive costs. The regulatory authorities there will then be able to give adequate protection to the consuming public."—Wells, Philip P., *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, Vol. 118, No. 207, p. 166, March, 1925.

"There ought to be a central commission constantly in session, so that there would be somebody to whom every State could go with their data and facts and ideas and present them to the commission."—Maxwell, George H., *Hearings*, H. R. 2903, Part VI, p. 1360, April 17, 1924.

"Seventh. The commission suggests that the proposal contained in the bill involves a modification of the established public policy enunciated in the Federal water power act, and is unwise, because all power developments should be under the Federal Power Commission.

"Answer. Section 7 of the Federal water power act expressly contemplates development by the United States itself. It is true that the section contemplates the Federal Power Commission itself suggesting such development to Congress. However, the fact that here the suggestion comes from the Interior Department and not from the Federal Power Commission, though perhaps provocative of departmental jealousies, does not involve in any substantial degree departure from the spirit of the act. It should be borne in mind that the Federal Power Commission is concerned through its administrative agents with power development rather than with flood control or irrigation. Here these latter purposes are predominant, and it would seem that an agency not concerned generally with power should have charge of the administration of the project to see that these dominant purposes are properly subserved."—*Hearings*, H. R. 2903, Part VIII, p. 1853, May 17, 1924, *Reply of Proponents of H. R. 2903 to Letter of March 24, 1924, of the Federal Power Commission.*

the Flood Control Act of March 1, 1917,<sup>152</sup> and numerous river and harbor improvement acts.<sup>153</sup> "Prior to 1917, the building of levees to confine the flood waters was simply an adjunct to river improvement. The Act of March 1, 1917, (known as the Flood Control Act) made flood control as definitely a part of the work of the national government as is river improvement. It provided for co-operation by local interests in levee construction,—they to meet at least one-third the cost thereof—but the cost of river improvement was left entirely to federal appropriations."<sup>154</sup> "The Committee on Flood Control is given the power to request and provide for examinations and reports relating to flood control in the same manner as the Committee on Rivers and Harbors is authorized to do relating to works of navigation."<sup>155</sup>

Senator Key Pittman of Nevada, a member of the Senate Committee on Irrigation and Reclamation, has declared himself in favor of an appropriation out of the general fund for river and harbor improvement for the specific purpose of flood protection. "Evidence already has been produced," he said, "that will convince any Congressman that it is his duty to appropriate out of the general fund for river and harbor improvement to prevent one of the greatest catastrophes probably that ever has taken place in this country."<sup>156</sup> With respect to the same question the Committee of Special Advisers on Reclamation recommended that legislation be secured which would make provision that the expenditure for the construction, operation, and maintenance of levees and protection works at Yuma and the Ockerson levee on the California side of the stream in Mexico by the reclamation fund, be treated as an expenditure of the federal government, similar to expenditures under the rivers and harbors act, and that the reclamation fund be reimbursed by an appropriation equal to the amount of this expenditure.<sup>157</sup>

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<sup>152</sup>39 U. S. Statutes, 949, c. 144, par. 1, *Control of Floods in Mississippi River*; par. 2, *Control of Floods in Sacramento River*; par. 3, *Laws and Regulations Applicable to Flood Control*.

<sup>153</sup>For a collection of these acts see *Barnes' Federal Code, 1919, pars. 9452-9531, pp. 2275-2297, and Cumulative Supplement, 1923*; and *U. S. Statutes* subsequent to the compilation in *Barnes' Federal Code*.

<sup>154</sup>Potter, Charles L., *How the Mississippi River is Regulated*, Engineering News Record, Vol. 94, No. 13, March 26, 1925, pp. 508, 511. Mr. Potter is Colonel, Corps of Engineers, U. S. A., and President of the Mississippi River Commission, St. Louis, Mo.

<sup>155</sup>Wilson, Riley J. (Representative from Louisiana), Congressional Record, Sixty-eighth Congress, First Session, Vol. LXV, Part 7, April 21, 1924, p. 6842.

<sup>156</sup>*Address before San Diego Chamber of Commerce, Oct. 28, 1925*, Los Angeles Times, October 29, 1925.

<sup>157</sup>Ashurst, Henry F., (Senator from Arizona), Congressional Record, Sixty-eighth Congress, Second Session, Feb. 28, 1925, p. 5181.

There is a phrase in one of the recent decisions of the Supreme Court of the United States which suggests a possible basis of action by the federal government in Colorado River development. In the case of *Sanitary District of Chicago v. United States*, Mr. Justice Holmes asserted that the issues raised by the alleged lowering of the level of the Great Lakes by reason of Chicago's diversion of water for the purpose of operating the Sanitary District did not lead to a controversy between equals but that the United States was asserting its sovereign power to regulate commerce and to control the navigable waters within its jurisdiction. The standing of the United States in the suit was declared to be "not only to remove obstructions to interstate and foreign commerce, . . . to carry out treaty obligations to a foreign power bordering upon some of the Lakes concerned," but, "it may be, also on the footing of an ultimate sovereign interest in the Lakes."<sup>158</sup> Whatever the phrase, "ultimate sovereign interest," may mean, it seemed to imply something different from any delegated authority to control the lakes for purposes of navigation and commerce.

It is also to be remembered that the national government is equipped with certain powers which have been designated as "the police power of the National Government" by the Chief Justice of the Supreme Court in the case of *Board of Trade v. Olson*.<sup>159</sup> There it was held that it was within the power of Congress to require that both producers and shippers should be

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"Making available for cultivation and settlement rich areas by protection against floods should be made an important part of the national program of reclamation," according to Representative Riley J. Wilson of Louisiana. "The Government is committed to the policy of reclaiming arid lands and very properly so, and it will, no doubt, be found upon investigation that areas just as valuable and of equal fertility may be reclaimed at less cost under a proper program for protection against floods."—*Congressional Record*, Sixty-eighth Congress, First Session, Vol. LXV, Part 7, April 21, 1924, p. 6842.

<sup>158</sup>*Sanitary District of Chicago v. United States*, 266 U. S., 405; Sup. Ct., 176, (Jan. 5, 1925).

<sup>159</sup>262 U. S., 1, 41.

Taft, C. J. "In view of the actual interstate dealings in cash sales of grain on the exchange, and the effect of the conduct of the sales of futures upon interstate commerce, we find no difficulty under *Munn v. Illinois*, 94 U. S. 113, 133, and *Stafford v. Wallace*, supra, (258 U. S. 495) in concluding that the Chicago Board of Trade is engaged in a business affected with a public national interest and is subject to national regulation as such. Congress may, therefore, reasonably limit the rules governing its conduct with a view to preventing abuses and securing freedom from undue discrimination in its operations. The incidental effect which such reasonable rules may have, if any, in lowering the value of memberships does not constitute a taking, but is only a reasonable regulation in the exercise of the police power of the National Government. Congress evidently deems it helpful in the preservation of the vital function which such a board of trade exercises in interstate commerce in grain that producers and shippers should be given an opportunity to take part in the transactions in this world market through a chosen representative."

given an opportunity to take part in the transactions of the Chicago Board of Trade through chosen representatives, even though such participation was in violation of the rules established by the members of the Board of Trade. It was denied that the incidental effects which the reasonable rules of Congress might possibly have in lowering the value of memberships in the Board of Trade, did not constitute a taking (of property without due process of law), but were only a reasonable regulation in the exercise of the police power of the National Government.<sup>160</sup> In the work of developing the Colorado River, therefore, it will be well to keep in mind the possibility of a claim being made for the exercise of federal authority on the basis of the police power of the federal government.

The bases of federal activity in Colorado River development, therefore, may be stated in summary form, as comprising the following grounds; navigability of the Colorado River, the interest of the federal government in the administration of its public lands, the activities of the Federal Power Commission, the duties of the Reclamation Service, the international and interstate status of the Colorado River, the function of the federal government under the Rivers and Harbors Act and the Flood Control Act, and the police power of the federal government. Our next subject for consideration will be the grounds of state activity in Colorado River development.

There is, in reality, but one basis of state activity—the fact that under our form of government the states have reserved to themselves all powers not delegated to the federal government. Accordingly, those who suggest that the several states are competent to develop their respective portions of the Colorado River, argue that the individual states may effectively control the natural resources within their own borders by means of rates charged for electrical energy and other products, and by the levy of state taxes in one form or another.<sup>161</sup>

The tenth amendment to the federal constitution provides that the powers not delegated to the United States by the constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people. Upon their admission, new states become entitled to and possess all the rights of dominion and sovereignty which belong to the original states and stand upon an equal footing with them in all respects whatsoever.<sup>162</sup>

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<sup>160</sup>*Board of Trade v. Olson*, 262 U. S., 1, 41.

<sup>161</sup>See Appendix II, Exhibit E<sup>1</sup>, *State Retention of Natural Resources*.

<sup>162</sup>Munro, William B., *The Government of the United States—National, State, and Local*, Revised Edition, 1925.

Professor Munro refers to the case of *Bollin v. Nebraska*, 176 U. S., 83 (1900).

The full significance of this may not be apparent, but whenever particular sets of circumstances arise for determination the courts make additions to earlier definitions. In this manner it has been held that the shores of navigable waters and the soils under them were not granted by the constitution to the United States, but were reserved to the states respectively, and that the new states have the same rights, sovereignty, and jurisdiction over this subject as the original states.<sup>163</sup>

The fact that our states retain all their original powers which they have not expressly delegated to the federal government, has led to the assertion that the jurisdiction of the Federal Power Commission under the Federal Water Power Act of 1920, is limited to taking the steps necessary to insure that the project works will be such, and so placed, that there will be compliance with interstate and foreign commerce regulations of the United

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<sup>163</sup>*Pollard's Lessees v. Hagan*, 3 How., 212, 230.

Other cases on this point cited in *Kansas v. Colorado*, 206 U. S., 46, 93, (May 13, 1907) are: *Martin v. Waddell*, 16 Pet., 367; *Goodtitle v. Kibbe*, 9 How., 471; *Barney v. Keokuk*, 94 U. S., 324; *St. Louis v. Myers*, 113 U. S., 566; *Packer v. Bird*, 137 U. S., 661; *Hardin v. Jordan*, 140 U. S., 371; *Kaukauna Water Power Co. v. Green Bay and Mississippi Canal Company*, 142 U. S., 254; *Shively v. Bowlby*, 152 U. S., 1; *Water Power Company v. Water Commissioners*, 168 U. S., 349; *Kean v. Calumet Canal Company*, 190 U. S., 452.

Mr. John Franklin Shields of Philadelphia, in an article on *The Federal Power Act*, University of Pennsylvania Law Review and American Law Register, Vol. 73, No. 2, pp. 142-157, January, 1925, wrote: "As jurisdiction or powers over all other navigable (i.e., all navigable waters other than those used, or susceptible of being used, for interstate and foreign commerce, which under Art. I, sec. 8, the commerce clause of the constitution, are subject to regulations of the United States for the protection of such commerce) and all non-navigable waters were 'not delegated to the United States by the Constitution nor prohibited by it to the States,' such waters are, under the Tenth Amendment, reserved unto the absolute jurisdiction and control of the respective states or to the people. *McCulloch v. Maryland*, 4 Wheaton 316, 406; *The Daniel Ball*, 10 Wall. 557; *The Montello*, 11 Wall. 411; *Oklahoma v. Texas*, 258 U. S. 574; *United States v. Rio Grande, etc., Co.*, 174 U. S. 690; *Leovy v. United States*, 177 U. S. 621; *Kansas v. Colorado*, 206 U. S. 46."

Attacking certain alleged unconstitutional features of the Federal Water Power Act of 1920, Mr. Shields also pointed out the pretext under which the Federal Power Commission might claim authority over certain questions not within its jurisdiction. "The most comprehensive provision of the Act is that if any part, minor or major, of a water power development requires a Federal permit or license, then the Commission shall have control of the entire project, its plan of development, and its business administration. To illustrate: if a primary transmission line crossed navigable waters of the United States, public lands, or a government dam, and a Federal permit or license was granted therefor, the Commission would, under the terms of the Act, assume control of the entire project, its present and future development, its service, rates and business, although no other part of the project (except said transmission line) required the consent or approval of the United States. There is no authority under the Constitution upon which to base such an assumed power and it could not exist unless the United States were granted the franchise-giving control and regulation of the water power resources which are vested in the states, having been reserved under the Tenth Amendment."—*Ibid.*, p. 150.

States. All other powers over the development—the determination of rates, the determination of the system of accounting, the provision for future developments and maintenance of the project, and payment to owners of developments on headwaters in the same streams because of benefit to the lower owner—may be said to be matters solely under the sovereignty of the state and entirely outside of the jurisdiction of the United States.<sup>164</sup>

There are a number of other instances, suggestive of bases of state action, in which a nice adjustment must be worked out between the powers of the federal government and those of the states. For example, the power of Congress to reclaim arid public lands reaches its “disappearing point” at the line where such legislation interferes with state legislation over the subject of reclamation.<sup>165</sup> In like manner, “the United States itself as an owner of public lands is subject to the riparian laws of the state where its lands are situate,”<sup>166</sup> and there is authority for

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<sup>164</sup>Shields, John Franklin, *The Federal Power Act*, University of Pennsylvania Law Review and American Law Register, Vol. 73, No. 2, pp. 142-157, 151, Jan., 1925.

“Even if a citizen, natural or corporate, or a municipality applied for and accepted a license from the United States containing all the proposed items of the Act, and ‘such further conditions not inconsistent with the provisions of this Act as the Commission may require,’ such a license or agreement could not oust the state’s sovereignty or add to the jurisdiction of the United States.”—*Ibid.*

“Neither can Congress regulate or prescribe the price or prices at which such property or the appurtenances thereof shall be sold by the owner or owners thereof, whether a corporation or an individual. In re Greene, 52 Fed. 104; Weeds v. United States, 255 U. S. 109; Kidd v. Pearson, 128 U. S. 1, 20; International Paper Company v. Massachusetts, 246 U. S. 135; Bailey v. Drexel Furniture Co., 259 U. S. 20.”—*Ibid.*, p. 148.

<sup>165</sup>The proposition affirmed was deduced from the language of the opinion in the Kansas v. Colorado case, 206 U. S., 91; 27 Sup. Ct., 665; 51 L. Ed., 956, in which it was stated: “as to those lands within the limits of the states, at least of the western states, the national government is the most considerable owner, and has power to dispose of and make all needful rules and regulations respecting its property. We do not mean that its legislation can override state laws in respect to the general subject of reclamation.” Citing these words the Circuit Court said: “The disappearing point of the power of Congress to reclaim arid public lands within a state is thus placed at the line where such legislation interferes with state legislation over the subject of reclamation.”—*United States v. Hanson*, 167 Fed., 881, 884 (C.C.A., Ninth Circuit, Feb. 1, 1909.)

<sup>166</sup>Shields, John Franklin, *The Federal Power Act*, University of Pennsylvania Law Review and American Law Register, Vol. 73, No. 2, pp. 142-157, 152, Jan., 1925, citing Kansas v. Colorado, 206 U. S., 46.

Mr. Shields states that if improvements on waters made by an upper owner of riparian rights are incidentally of benefit to the improvements of a lower owner on the same waters, whether or not the lower owner shall be compelled to pay tribute to such upper owner is a matter controlled absolutely by the statutes of the state and not by the Federal Power Act or any act of Congress.

Numerous citations might be compiled from federal legislation tending to show the sphere of operation of state authority. Thus rights of way for the construction and maintenance of dams, reservoirs, and other works within and across the forest reserves of the United States are granted under rules and regu-

the statement that a state may make its own classification of navigable waters in order to determine its rules of property or riparian rights.<sup>167</sup>

State control of natural resources generally takes the form of rate regulation by a state commission.<sup>168</sup> Taxation of a particular commodity before it enters interstate commerce has also been an important means of control.<sup>169</sup> However, as we pointed out in the material dealing with the grounds of federal activity in Colorado River development, the interests concerned are wider and more inclusive than the limits of any one state. In fact, "the coming universal electric service may well grow into one of 'those subjects which require a general system or uniformity of regulation' as to which the court has said, that 'the power of Congress is exclusive' (Minnesota Rate Cases, 230 U. S. 352, 399)."<sup>170</sup>

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lations prescribed by the Secretary of the Interior, and "subject to the laws of the State or Territory in which said reserves are respectively situated."—*An Act Providing for the Transfer of Forest Reserves from the Department of the Interior to the Department of Agriculture*, Act of Feb. 1, 1905, sec. 4, 33 U. S. Statutes, 628.

<sup>167</sup> *St. Anthony Falls Company v. St. Paul Commissioners*, 168 U. S., 349 (1897), cited by Shields, John Franklin, *The Federal Power Act*, University of Pennsylvania Law Review and American Law Register, Vol. 73, No. 2, pp. 142-157, 147, Jan., 1925.

<sup>168</sup>In the case of *Pennsylvania Gas Company v. Public Service Commission*, 252 U. S. 23, "regulation by the State of New York of the rates charged consumers in Jamestown for natural gas delivered directly from mains which brought it into the state from Pennsylvania was, in the absence of regulation by Congress, held to be valid." Quoting from the Minnesota Rate Case, the court said: "Congress must be the judge of the necessity of Federal action. Its paramount authority always enables it to intervene at its discretion for the complete and effective government of that which has been committed to its care and for this purpose and to this extent to displace local laws by substituting laws of its own."

"The gas business in question was held to be local in its nature, 'similar to that of a local plant furnishing gas to consumers in a city,' and therefore subject to local regulation until Congress undertakes to regulate."—Wells, Philip P. *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, Vol. CXVIII, No. 207, pp. 163, 165, March, 1925, *Giant Power, Large Scale Electrical Development as a Social Factor*.

<sup>169</sup>An instance of this is found in the issues raised by the tax placed by Pennsylvania upon coal mined in that state. The case of *Commonwealth v. Philadelphia & R. Coal and Iron Co.*, 123 Atl. 315, held that the Act of May 11, 1921, Pennsylvania Public Laws 479, which imposed a tax on anthracite coal and provided for the assessment thereof at the time the coal was ready for market, and required the superintendent or other officer of the mine to assess the tax from time to time as the coal was ready for market, and to ascertain and assess daily the number of gross tons mined, did not impose a tax on interstate commerce.

<sup>170</sup>Wells, Philip P., *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, Vol. CXVIII, No. 207,

In the Fifth Annual Report of the Federal Power Commission it is pointed out that if the problems of the Colorado River are ever settled, interstate energy transfers aggregating hundreds of thousands of horsepower will be involved. The report continues with the statement that the public interests at stake will be too great to be waved aside as inconsequential, and that it is important to determine whether and by whom these interstate energy transfers are to be regulated.<sup>171</sup> Then turning to the status of the law at the present time the statement is made that while no cases involving such transfers appear to have come to final decision before the courts, analogous cases involving the interstate transmission of gas have reached the court of last resort, and that there is no reasoning in those cases which does

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pp. 163, 165, March, 1925, *Giant Power, Large Scale Electrical Development as a Social Factor*.

"And even if not exclusive, the authority of Congress is dominant if invoked, and our experience with railroad rates shows that it may be invoked."—*Ibid*.

The Governors of New York, New Jersey, and Pennsylvania, on October 25, 1925, announced the appointment of a joint committee "to study the transmission and control of electric power in the three States and to report to the three Governors." Mr. Philip P. Wells, author of the article above referred to, and Deputy Attorney General and Chairman of the Pennsylvania Giant Power Board, is one of the Pennsylvania members of the committee. Associated with him are Clyde L. King, Secretary of the Commonwealth and member of the Pennsylvania Giant Power Board, and Morris L. Cooke, Consulting Engineer and Director of the Pennsylvania Giant Power Survey. The New York members of the committee are: William A. Prendergast of New York, Chairman of the Public Service Commission; George R. Lunn, Commissioner of Schenectady, and Charles R. Vanneman of Albany, Chief Engineer of the Commission. New Jersey appointed Dr. Charles Browne of Princeton, member of the Board of Public Utility Commissioners of New Jersey; Isaac Alpern of Perth Amboy, President of the Perth Amboy Trust Company, and Robert F. Ingle of Beach Haven, former member of the State Board of Commerce and Navigation.—*New York Times, Three Governors Name Power Committee*, Oct. 26, 1925.

<sup>171</sup>"At the present time the volume of energy transmitted across State lines is a small part of the total volume of electric energy generated and distributed, and while the proportion will increase in the future it is not probable that it will ever be more than a small fraction of the total. Its importance, however, in individual cases, and in relation to the general question of public utility regulation may be far greater than the ratio of the amount of such interstate transfers to the total energy used. A considerable part of the electric energy supplied to the city of Baltimore, for example, is generated in the State of Pennsylvania and wholesaled across the State line to a Maryland distributing company. There is a proposal to develop a large hydro-electric plant in the lower Susquehanna River in Maryland and to wholesale the greater part of the output to a Pennsylvania distributing company for use in the city of Philadelphia. If disposition is eventually made of the Government project at Muscle Shoals, a considerable part of the energy output is likely to be wholesaled to distributing companies in neighboring States. Any development and use of the St. Lawrence powers will involve interstate energy transfers aggregating hundreds of thousands of horsepower. A similar situation will exist if the problems of the Columbia and Colorado are ever settled."—*Federal Power Commission, Fifth Annual Report*, Washington, 1925, p. 8.

not appear to be equally applicable to interstate transfers of electric energy.<sup>172</sup>

According to the analysis made in the Fifth Annual Report already mentioned, interstate commerce in electric energy may occur under either one of two sets of circumstances. It may consist of the transmission and sale of energy produced in one state and transported and furnished directly to consumers in another state by the company so producing and transporting, or it may consist of the transmission and sale in wholesale quantities to a distributing company, the transporting company possessing no franchise rights for engaging in distribution itself. Then we are told that it is under the first set of circumstances, illustrated in the case of the Pennsylvania Gas Company v. Public Service Commission of New York,<sup>173</sup> that the great majority of interstate energy transfers are taking place today. In that case the court said that the thing which the state commission had undertaken to regulate was local in its nature, and that this local service was not of that character which requires general and uniform regulation of rates by Congressional action. "It may be conceded," said the court, "that the local rates may affect the interstate business of the company. But this fact does not prevent the State from making local regulations of a reasonable character . . . Until the subject matter is regulated by congressional action, the exercise of authority conferred by the State upon the public service commission is not violative of the commerce clauses of the Federal Constitution."

"The second set of circumstances mentioned—wholesale interstate transfers—were illustrated in the Kansas natural gas cases,<sup>174</sup> and are the circumstances under which, in several cases, important interstate energy exchanges are taking place today and will take place to a constantly increasing degree in the future as the limits of superpower systems are extended and their capacities increased. In the Kansas natural gas cases the Supreme Court said: 'The business of supplying, on demand, local consumers is a local business, even though the gas be brought from another State and drawn for distribution directly from interstate mains; and this is so whether the local distribution be made by the transporting company or by independent distributing companies. In such case the local interest is para-

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<sup>172</sup>Federal Power Commission, *Fifth Annual Report*, Washington, 1925, p. 8.

<sup>173</sup>252 U. S., 23; 40 Sup. Ct., 279.

This is the case to which reference has already been made. It is included here because of the importance with which it is regarded, along with the Kansas natural gas cases, by the Federal Power Commission.

<sup>174</sup>265 U. S., 298; 40 Sup. Ct., 544.

mount, and the interference with interstate commerce, if any, indirect and of minor importance. But here the sale of gas is in wholesale quantities, not to consumers, but to distributing companies for resale to consumers in numerous cities and communities in different States. The transportation, sale, and delivery constitute an unbroken chain, fundamentally interstate from beginning to end, and of such continuity as to amount to an established course of business. The paramount interest is not local but national, admitting of and requiring uniformity of regulation. Such uniformity, even though it be uniformity of governmental nonaction, may be highly necessary to preserve equality of opportunity and treatment among the various communities and States concerned.'<sup>175</sup>

Having indicated the status of the law at the present time and having declared that it is important to determine whether and by whom these interstate energy transfers are to be regulated, the Federal Power Commission proceeds to discuss three ways of securing that regulation and control.

The first method contemplates a situation in which a wholesaling company outside of a particular state has sold energy to a distributing company operating within the state. Under the ruling of the Pennsylvania-New York case, the state commission of the state in which the distribution of energy is made, may properly regulate the delivery of energy to consumers within that state. However, the state commission has no jurisdiction over the company wholesaling the energy from an outside point to the distributing company. Under these circumstances, if the state commission ignores the purchase price paid by the distributing company to the wholesale company and fixes rates to consumers on what it thinks the price ought to be rather than on what it is, the result might be either the confiscation of the property of the distributing company or enforced cancellation of its contract for the purchase of imported energy. This method is not favored by the Federal Power Commission. The reason given is that in addition to determining the question of whether the distributing company shall or shall not purchase at the price offered is an exercise of a managerial function which the courts are loath to permit commissions to exercise on behalf of the utilities, such an act would not be regulation of the character which both public and utilities are justified in expecting today.<sup>176</sup>

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<sup>175</sup>Federal Power Commission, *Fifth Annual Report*, Washington, Government Printing Office, 1925, pp. 8-9.

<sup>176</sup>*Ibid.*, pp. 9-10.

"Such a decision by a State Commission would not follow upon an orderly summons of the parties and presentation of evidence, for one of the parties

The second method is through the medium of interstate compacts. These compacts, if approved by Congress, "would have the effect of transferring the Federal jurisdiction to the States themselves."<sup>177</sup> But the Federal Power Commission places little or no hope in this plan. To quote from the report: "If there were only occasional cases of such interstate transfers, or if no transfer affected more than two States, this method might be possible. But the number of cases is constantly increasing, and eventually the transfers will affect groups of States. How readily any such group may be expected to agree upon a common course of action may be judged by the difficulties encountered in the attempt to negotiate the Colorado River compact where seven States were involved, and the Delaware River compact where only three were involved. States are naturally jealous of their rights. Being sovereigns they may act only by unanimous consent. If a situation can be imagined in which, for example, the eleven Northeastern States comprising the so-called 'super-power zone' could continue to settle the problems of interstate energy transfers satisfactorily and expeditiously by unanimous consent under the terms of a compact, we would, in effect, have merely created for such purpose another Federal Government to serve in place of the one we now have."<sup>178</sup>

The third method of securing proper regulation and control of interstate transfers of energy considered in the fifth annual report of the Federal Power Commission, is that of bringing about an eventual separation of distribution from generation and transmission. It is asserted that such a situation would simplify the problem of regulation, "for distributing companies could then be required to incorporate in the State in which they render service and thus be wholly subject to the regulatory authority of the State."<sup>179</sup> This idea has been developed to a certain degree by Mr. Phillip P. Wells, Deputy Attorney General of the Commonwealth of Pennsylvania.<sup>180</sup> "Whether or not this sepa-

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would not be within its jurisdiction. In absence of voluntary acquiescence of the parties a decision of this character could effect a reduction in the interstate rate only by reducing the rates of the distributing company to a point which would result either in confiscation of its property or in forcing it to cancel its contract for purchase of imported energy, that is, by virtual exclusion of such energy from the State."—*Ibid.*, p. 10.

<sup>177</sup>Federal Power Commission, *Fifth Annual Report*, Washington, Government Printing Office, 1925, p. 10.

<sup>178</sup>*Ibid.*

<sup>179</sup>*Ibid.*, p. 11.

<sup>180</sup>This plan contemplates a transmission company subject to federal regulation.

See Appendix II, Exhibit B, *The Relation of the Corporate Structure of the Electric Power Business to Problems of Regulation.*

ration does in fact take place, the instances in which regulation by the Federal Government will be required will be few in number and simple in character, since they will have to do only with wholesale transactions in interstate commerce."<sup>181</sup> It is the opinion of the Federal Power Commission that even in the comparatively small number of cases involving wholesale transactions in interstate commerce, federal regulation should be limited to those instances in which formal complaint is filed, and in which the state either alone or in cooperation cannot effectively control the situation.<sup>182</sup>

The issues which have been introduced in the preceding paragraphs have a direct bearing upon the Colorado River situation in their relation to the suggestion that the whole question of rate regulation be left with the Federal Power Commission. But the opponents of that plan are prompt to indicate the manner in which this practice would interfere with the work of state commissions.<sup>183</sup> In the Colorado River area, as in other areas of

<sup>181</sup>Federal Power Commission, *Fifth Annual Report*, Washington, Government Printing Office, 1925, p. 11.

<sup>182</sup>*Ibid.*

"If, in the passage of time and the accumulation of experience, the unexpected, either economic or legal, should happen and we find an occupied field requiring regulation, it will be time enough then to talk of Federal control. No such condition exists today or is apparent in the future."—Hoover, Herbert, *Opposes Federal Utilities Control*, New York Times, Oct. 15, 1925.

For an extended statement of Secretary of Commerce Hoover's views, see Appendix II, Exhibit C, *Opposes Federal Utilities Control*.

<sup>183</sup>"MR. HAYDEN: You will find two things to be true: First, the Federal water power act does not confer any jurisdiction on the Federal Power Commission to regulate rates where there is an existing State regulatory body; in the second place, you will find that in the States of Arizona, California, and Nevada the State commissions will not surrender that right, and they will insist upon regulating the rates for power as they clearly have authority to do.

"MR. CLARK: That is, if the power plant were located in Arizona, it would have to secure the consent of Arizona.

"MR. HAYDEN: But the dam has to be half in Nevada and half in Arizona, according to your plan.

"MR. CLARK: The plan we proposed was to go before the Federal commission and confess jurisdiction and ask Congress to permit us to put it entirely in the hands of the Federal Power Commission.

"MR. HAYDEN: You will have great difficulty to induce Congress to invade the jurisdiction of the States concerned in regulating water power rates.

"MR. CLARK: That would be for Congress to determine."—*Hearings*, H. R. 2903, Part IV, p. 777, March 20, 1924.

"MR. CLARK: . . . . The proposal we put before the power commission was that the rate should be established by the Federal Power Commission and that this power generated should not be distributed to the consumers, but turned over to the existing power companies, municipalities, and railroads, so that it did not come under the jurisdiction of the State corporation commissioners until it was delivered to the state corporations."—*Ibid.*

Note, also, the following remarks which raise the question of regulation:

"MR. SWING: . . . . But if a holding company was formed outside of California and operated utilities outside of California, the California State

the United States where interstate projects are in the course of development,<sup>184</sup> "we shall all have to do a lot of close thinking on the question of interstate industrial regulation."<sup>185</sup> A later portion of this thesis will be devoted to a consideration of a plan for securing proper regulation of the electric power industry in the Colorado River area.

Our discussion of the basis of state activity in Colorado River development has been concerned thus far with a consideration of the state's power to secure adequate regulation of the industry through state control of rates. As was suggested in the opening paragraph of this section, however, another power of the state—the taxing power—may prove to be an important instrument of government which may be used as a basis of state action in securing the development of this stream.

The question of whether or not Arizona is to tax the units of power developed within her borders but intended for use in other states, is one of the practical issues upon which amicable interstate relations depend. Mr. H. S. McCluskey, Secretary to Governor Hunt of Arizona, declared the position of that state to be that inasmuch as the people of Arizona are buying power from California in the shape of oil and power from New Mexico in the form of coal, for which they pay whatever tax is exacted by those two States, the people of Arizona should derive revenue from the hydroelectric energy developed in Arizona—energy which is just as measurable as a ton of coal or a barrel of oil.<sup>186</sup>

Railroad Commission could not control it, your State (speaking to Hayden of Arizona) could not control it for what it sold in California; Nevada could not, and the United States could not, because in each State there would be a regulatory body."—*Hearings*, H. R. 2903, Part IV, p. 804, March 21, 1924.

"Mr. DAVIS, A. P.: . . . That (one power house of 10 units of 100,000 horsepower each) can be, if necessary, divided into 10 parts; so that they can all be built independently by different people, if they want to.

"There is not any reason why under this bill, as I see it, and under the physical conditions there, Arizona should not build one of those units and have 100,000 horsepower which it could operate itself. It might even build its own transmission line to carry that; or it might make a contract, we will say, with the Southern California Edison Co., to transmit power to certain points agreed upon and to receive compensation for doing that. Or it might engage that Company to build its power plant; or it might use its allocation of a water right there as a basis for negotiation with the power company to do it all, if it chooses; or it can do it all itself, if it can finance it."—*Hearings*, H. R. 2903, Part VII, p. 145, April 19, 1924.

<sup>184</sup>Mr. Edwin A. Olson, District Attorney for the Northern District of Illinois, suggests that similar questions are involved in the proposed waterway from the Great Lakes to the Gulf.—Conversation of Dec. 6, 1925.

<sup>185</sup>Editorial, *Superpower and Local Government*, New York Times, July 2, 1925.

<sup>186</sup>McCluskey, H. S., *Swing-Johnson Bill Opposed: Arizona's Stand on Colorado River Outlined*, Los Angeles Times, September 29, 1925.

Mr. McCluskey's statement was made in an address before the Los Angeles Realty Board in the Biltmore Hotel, Los Angeles, September 28, 1925.

Mr. Justice Holmes, in his dissenting opinion in *Pennsylvania v. West Virginia*,<sup>187</sup> has suggested respectable authority for this position. He pointed out that the Supreme Court is on record as holding that a state may levy an occupation tax upon the mining of iron ore equal to six per cent of the value of the ore produced during the previous year, although substantially all the ore left the state and was put upon cars for that purpose by the same single movement by which it was severed from its bed. "As it was not yet in interstate commerce the tax was sustained."<sup>188</sup>

If the physical structure of any dam used to impound waters from which power is generated, were located entirely within the State of Arizona, perhaps there would be a stronger reason for Arizona's position. As it is, the utilization of any one of several of the dam sites will mean that the abutments of the dam will rest upon the soil of two states. To declare for the right to tax hydro-electric power "even when generated at a dam of which half may be in another State,"<sup>189</sup> causes acrid comment by the press of Arizona's neighboring states, which might otherwise be avoided. None of the six other states directly concerned in Colorado River development have placed great emphasis upon their right to tax the units of power developed within their borders.<sup>190</sup>

<sup>187</sup> 262 U. S., 553, 600 (1923).

<sup>188</sup>"The statute seeks to reach natural gas before it has begun to move in commerce of any kind. It addresses itself to gas hereafter to be collected and states to what uses it first must be applied. The gas is collected under and subject to the law, if valid, and at that moment it is not yet matter of commerce among the States. I think that the products of a State until they are actually started to a point outside it may be regulated by the State, notwithstanding the commerce clause. In *Oliver Mining Company v. Lord*, 262 U. S. 172, it was held that the State might levy an occupation tax upon the mining of iron ore equal to six per cent. of the value of the ore produced during the previous year, although substantially all the ore left the State and was put upon cars for that purpose by the same single movement by which it was severed from its bed. There could not be a case of a State's product more certainly destined to interstate commerce. It was put upon the cars by the same act by which it was produced. But as it was not yet in interstate commerce the tax was sustained. I know of no relevant distinction between taxing and regulating in other ways. *McCulloch v. Maryland*, 4 Wheat. 316, 431."—Holmes, dissent, *Pennsylvania v. West Virginia*, 262 U. S., 553, 600 (1923).

<sup>189</sup>Los Angeles Times, February 28, 1925.

<sup>190</sup>The attitude of Nevada may be taken as an indication of the position of the other states.

"MR. HAYDEN: Have the people of Nevada given consideration to the question of whether, inasmuch as the power is to be generated within, or partly within, their State, any royalty should be collected on it, if used in another State?"

"MR. BOYLE: No, sir; we do not figure on that—we would be very well pleased to have the development there and to have our chance at the utilization of the power without imposing any imposts on anybody else for using it.

"That has been given full and thorough consideration; and there is no desire on the part of Nevada to increase the cost of that power to anybody by

The possibility of the final adoption of some plan under the provisions of which the dams and other necessary structures may become the property of some kind of an interstate body, is suggested by the trend of events in the development of the New York Port Authority.<sup>191</sup> Briefly stated, the legislation of the States of New York and New Jersey creating the New York Port Authority provided that a commission of six men should make up the Port Authority. This group of men, according to the Acts creating it, "shall constitute a body, both corporate and politic, with full power and authority to purchase, construct, lease and/or operate any terminal or transportation facility within said district; and to make charges for the use thereof; and for any of such purposes to own, hold, lease and/or operate real or personal property, to borrow money and secure the same by bonds or by mortgages upon any property held or to be held by it."<sup>192</sup> Under the powers granted to it the Port Authority holds more than three billions of dollars worth of property.<sup>193</sup> This subject will be considered further in connection with suggestions for Colorado River development. However, it is important at the present point to call attention to the fact that this property, including bonds and the income from bonds, is exempt from taxation either by the States of New York or New Jersey or by the United States.<sup>194</sup>

Rate regulation and the taxing power of the state, therefore, constitute the principal bases of state activity in Colorado River development. As was indicated in the first paragraphs of this

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placing any sort of a royalty proposition on it."—*Hearings*, H. R. 2903, Part IV, p. 587, March 14, 1924.

Governor Dern of Utah, testifying before the Senate Committee on Irrigation and Reclamation, in their December, 1925, hearings at Washington, raised a nice question when he said:

"Arizona has taken the stand that she expects to collect royalties on all power generated on the Colorado River within her borders. She wants a dam built at Glen Canyon. If that is done the dam will be in Arizona, but most of the reservoir will be in Utah, and it is interesting to speculate on how the power royalties ought to be divided between the two States."—*Los Angeles Times*, Dec. 18, 1925.

<sup>191</sup>Laws of New York, 1921, Chapter 154; 1922, Chapter 43, and Laws of New Jersey, 1921, Chapter 151; 1922, Chapter 9.

<sup>192</sup>Laws of New York, 1921, Chapter 154, Article VI.

<sup>193</sup>New York Times, *The Untaxable Port Authority* (Editorial), November 17, 1925.

<sup>194</sup>*Ibid.*

"In the opinion of Mr. Hughes (Charles Evans) neither New York nor New Jersey nor the United States has power to tax the Port Authority. Its property, its bonds and the income from the bonds are all equally exempt. This is the result of the statutes creating the Authority."

For the full text of this editorial, see Appendix II, Exhibit D.

discussion, they are parts of the underlying and fundamental basis of state activity—the reserved power of the state.

It has been said that certain circumstances of Arizona's admission into the Union tended to limit her authority over the Colorado River. In other words although our discussion of the bases of state activity in Colorado River development has centered around the reserved powers of the state expressed in the form of rate regulation and taxation, we now are to consider a particular instance of what is alleged to be a reservation of certain powers over the Colorado River for the benefit of the federal government, by the enabling act leading to Arizona's statehood.

Mr. Ottamar Hamele, Chief Counsel of the Bureau of Reclamation, referred to this in a letter dated Washington, May 19, 1924, addressed to the Hon. Addison T. Smith, Chairman of the Committee on Irrigation of Arid Lands of the House of Representatives.<sup>195</sup> He pointed out that the enabling act of June 20, 1910, under which the State of Arizona came into the Union, made provision in paragraph 7 of section 20 for the reservation to the United States, with full acquiescence of the State, of all rights and powers for the carrying out of the provisions by the United States of the reclamation laws enacted by Congress, "to the same extent as if said State had remained a Territory." It was also shown by Mr. Hamele that section 28 of the same Act provided that Arizona should from time to time relinquish to the United States, at the request of the Secretary of the Interior, such of its lands as at any time might be needed for irrigation works in connection with any government project, and that the Secretary of the Interior might have a period of five years after the proclamation of the President declaring the admission of the State of Arizona, within which to designate any parcel of land as "actually or prospectively valuable for the development of water power or power for hydro-electric use or transmission." Within the specified period of time the Secretary of the Interior designated the lands valuable for the development of power, which designation includes many of the sites of proposed dams in the Colorado. Mr. Hamele concludes that the constitution and laws of the State of Arizona relative to the use of water at Boulder Canyon, "are subject to a superior and dominant right of the Federal Government expressly reserved by the Congress,"<sup>196</sup> and that under this reservation the United States

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<sup>195</sup>*Hearings*, H. R. 2903, Part V, pp. 912-913, March 25, 1924.

<sup>196</sup>"The enabling act of June 20, 1910 (36 Stat. 557), under which the State of Arizona came into the Union, provides in paragraph 7 of section 20 as follows:

could proceed with the proposed development as though Arizona were still a Territory, the Congress of the United States having full legislative power over all subjects upon which the legislature of a State might legislate within the State.<sup>197</sup>

The suggestion of any superior and dominant right of the federal government expressly reserved by Congress, is vigorously opposed by Governor Hunt of Arizona, who asserts that the language of the enabling act cannot be distorted to mean that the state forfeited ownership in the stream bed of the Colorado River. "A stream bed in a navigable river," he says, "is not land in the sense intended in the enabling act. The land reserved and excepted is land capable of being conveyed by the State. The bed of a navigable river is not capable of such trans-

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"Seventh, That there be and are reserved to the United States, with the acquiescence of the State, all rights and powers for the carrying out of the provisions by the United States of the act of Congress entitled 'An act appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands,' approved June 17, 1902, and acts amendatory thereof or supplementary thereto, to the same extent as if said State had remained a Territory.'

"Section 28 of the same act contains the following provision:

"That said State, at the request of the Secretary of the Interior, shall from time to time relinquish such of its lands to the United States as at any time are needed for irrigation works in connection with any such Government project.'

"Section 28 of the act also contains the following provision:

"There is hereby reserved to the United States and excepted from the operation of any and all grades made or confirmed by this act to said proposed State, all land actually or prospectively valuable for the development of water power or power for hydroelectric use or transmission, and which shall be ascertained and designated by the Secretary of the Interior within five years after the proclamation of the President declaring the admission of the State.'

"The proclamation of the President declaring admission of the State bears date February 14, 1912, and in 1914 the Secretary of the Interior designated the lands valuable for the development of power which designation includes the lands involved in the construction of the proposed Boulder Canyon Dam.

"It will thus be seen that the constitution and laws of Arizona relative to the use of water at Boulder Canyon are subject to a superior and dominant right of Federal Government expressly reserved by the Congress."—*Hearings*, H. R. 2903, Part V, pp. 912-913, March 25, 1924.

Concerning the date of withdrawal of certain lands see Appendix II, Exhibit E, *Arizona Claim Refuted; Records of Land Office Show Water Rights of Colorado River Reserved to Government*, an exclusive dispatch to the Los Angeles Times from Phoenix, Arizona, based upon a study of the records in the United States Land Office at Phoenix and claiming to expose an error of notation on the tract books covering the Colorado River area.

<sup>197</sup>"Under this reservation the United States could proceed with the proposed development as though Arizona were still a Territory. In a Territory Congress has the entire dominion and sovereignty, national and local, Federal and State, and has full legislative power over all subjects upon which the legislature of the State might legislate within the State. (*Simms v. Simms*, 175 U. S. 168.) Congress has the power to amend the acts of a Territorial legislature. Congress may not only abrogate laws of a Territorial legislature but may itself legislate directly for the local government. (*National Bank v. Yankton County*, 101 U. S. 133.) In view of this situation, I cannot see how Arizona could feasibly object to the proposed Boulder Canyon program."—*Hearings*, H. R. 2903, Part V, p. 913, March 25, 1924.

ference. Had it been intended to reserve the stream bed of the Colorado River for the federal government, the enabling act would have said so plainly, but that it was not done and could not have been done is manifest, since it is essential that the equality of the States be preserved in accordance with the requirements of the Constitution. In all of the other 47 States the ownership of the water and the beds of the navigable streams is in the State, and I do not believe Arizona would accept less in this respect than the rights enjoyed by our sister States."<sup>198</sup>

Having these data before us concerning the basis of state participation in Colorado River development, our conclusion is that the separate states have effective grounds of action in their power to regulate rates and to levy taxes, and that there is not much danger that the states will be curtailed in the exercise of their powers because of so-called reservations to the federal government of certain rights by enabling acts.

Our study in preceding pages has shown that the respective spheres of authority of the state and federal governments in the control of the use of Colorado River water are marked out or delimited according to certain definite bases or grounds of action. These areas within which the two governments are to operate sometimes seem to overlap, and often there is a real need for delicate adjustment of the administrative machinery of each to that of the other. We now approach the question of the effect of the adoption of the Compact. Would there be any change in the respective spheres of authority of the state and federal governments in the control of the use of the water of this stream in case the seven state compact were adopted? What would be the effect of the Compact upon the system of cooperation be-

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<sup>198</sup>Hunt, George W. P. *Excerpt from Message to the Seventh State Legislature, January 12, 1925, with Accompanying Correspondence*, Hearings before the Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress, Second Session, on S. 727, a Bill to Provide for the Protection and Development of the Lower Colorado River Basin, Part II, pp. 306-312, 310, January 23, 1925, Washington, Government Printing Office, 1925.

Whatever the rights of the federal government may be by reason of these provisions in the enabling act, "these reservations and restrictions are not peculiar to the State of Arizona but are found in the enabling acts of many other states."—Hamele, Ottamar, Chief Counsel, Reclamation Service, *Memorandum for Mr. Stetson, Executive Secretary, Colorado River Commission, June 12, 1923*. See also *Hearings*, H. R. 2903, Part V, p. 897, March 25, 1924.

In the memorandum just cited Mr. Hamele also states that, "The provisions of an enabling act and a constitution made pursuant thereto make a compact between the United States and a State. These limitations relate to property and not to the political rights or obligations of the people. An agreement in reference to property involves no question of equality of political status, and is valid. *Searns v. Minnesota*, 179 U. S. 223. Admission on an equal footing with the original states in all respects whatsoever is met if there is an equality of constitutional right and power."

tween the state governments? What would be the effect of the Compact upon property rights in appropriated and unappropriated water? Likewise, what would be its effect in creating preferred uses for the water of the Colorado River area? To these questions we now address ourselves.

"If the Colorado River Compact is ratified in its present form without any interpretations or reservations," said Mr. Hamele, Chief Counsel of the Reclamation Service, "it will make uncertain the rights of the Federal Government. It will be urged by some that the Federal Government has lost whatever right it did have to the unappropriated waters of that basin, and that it must now go to the States and must make appropriations under State laws and be entirely subservient to the direction of the States."<sup>199</sup> While asserting that this would be the position taken by many, Mr. Hamele declared that he did not think that it was a necessary interpretation. "It is my opinion," he added, "that it would be unwise for Congress to ratify the Compact without a provision to the general effect that the ratification is not intended to deprive the United States Government of any right it now has."<sup>200</sup>

Definite references in the Compact to the activities of the federal government or its agents will also give us some assistance in answering the question of whether or not the field of action of the federal government would be extended or limited by the adoption of the Compact. These provisions of the interstate agreement will be considered in several of the following paragraphs.

The preamble, after naming the Commissioners of the seven states participating in the negotiations, contains a reference to the representative of the United States, Mr. Hoover, but states merely the fact of his participation in the negotiations, the agreement upon the articles being an agreement between the representatives of the states. It is clear, therefore, that although the federal government was represented in the negotiations, the

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<sup>199</sup>*Hearings*, H. R. 2903, Part V, p. 898, March 25, 1924.

"MR. HAMELE: I would suggest that if the Colorado River Compact were ratified and the allocation of water made under it, it might be that Arizona, for instance, would have the idea that she controlled all appropriation rights within her State and would refuse to acknowledge any appropriation made by the Federal Government in Boulder Canyon."—*Ibid.*, p. 899.

<sup>200</sup>*Hearings*, H. R. 2903, Part V, p. 898, March 25, 1924.

The following remarks may be cited:

"MR. BAKER: Well, there is another viewpoint. Have you given your attention to the viewpoint that, if the Compact is ratified by the States and by the Federal Government, the Federal Government loses its control over the waters of that stream, outside of the navigability feature?"

"MR. MAXWELL: I think so, absolutely." *Ibid.*, Part VI, p. 1341, April 17, 1924.

Compact which was drafted was not intended as an agreement between the federal government and the states but only as an agreement between the states.<sup>201</sup>

The federal government in its dealings with Mexico is not in any way embarrassed or limited by the terms of the Compact. This treaty between the states provides that any right to the use of any waters of the Colorado River System which might be recognized as a matter of international comity, in the United States of Mexico by the United States of America subsequent to the coming into effect of the Compact, shall be supplied from certain specified volumes of water.<sup>202</sup>

A definite limitation of the powers of the federal government with respect to the Colorado River, would result from the application of Article IV, paragraph (a), which provides that, "Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its Basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes." A provision was added, however, which specified that if Congress

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<sup>201</sup>"The States of . . . have through their Governors appointed as their Commissioners: . . . who, after negotiations participated in by Herbert Hoover appointed by the President as the representative of the United States of America, have agreed upon the following articles:—" Preamble, *Colorado River Compact*, Nov. 24, 1922.

<sup>202</sup>"III, (c) If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d)."—Article III, par. (c), *Colorado River Compact*, Nov. 24, 1922.

For the text of the paragraphs referred to, see Appendix II, Exhibit A, *Text of Compact*.

"Question 9. Does paragraph (c) of Article III contemplate a treaty between the United States and the Republic of Mexico under which one-half of a deficiency of water for the irrigation of lands in Mexico shall be supplied from reservoirs in Arizona?

"No. Paragraph (c) of Article III does not contemplate any treaty. It recognizes the possibility that a treaty may at some time be made and that under it Mexico may become entitled to the use of some water, and divides the burden in such an event, but the quantity to which that country may become entitled and the manner, terms, and conditions upon which such use may depend, can not be foreseen. It is a certainty that no such treaty will be negotiated and ratified which is unfair to the United States or any State or detrimental to their interests. . . ."—Hoover, Herbert, *Replies to Questions on the Compact and Colorado River*, Congressional Record, Sixty-Seventh Congress, Fourth Session, *The Colorado River Compact*, Extension of Remarks of Hon. Carl Hayden, of Arizona, in the House of Representatives, Tuesday, January 30, 1923, p. 2.

does not consent to this paragraph, the other provisions of the Compact should nevertheless remain binding.

We come now to the question of the effect of the Compact upon the system of cooperation existing between the state governments. Article VI of the Compact is as follows: "Should any claim or controversy arise between any two or more of the signatory States: (a) with respect to the waters of the Colorado River System not covered by the terms of this Compact; (b) over the meaning or performance of any of the terms of this Compact; (c) as to the allocation of the burdens incident to the performance of any article of this Compact or the delivery of waters as herein provided; (d) as to the construction or operation of works within the Colorado River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or (e) as to the diversion of water in one State for the benefit of another State; the Governors of the States affected, upon the request of one of them, shall forthwith appoint Commissioners with power to consider and adjust such claim or controversy, subject to ratification by the Legislatures of the States so affected." It was also provided in the same article that nothing contained in the Compact should prevent the adjustment of any claim or controversy such as those enumerated in Article VI, "by any present method or by direct future legislative action of the interested States." In case this article, or an article with similar provisions, forms a part of some compact which is finally adopted by the seven states, it is quite evident that an additional means for the determination of interstate controversies relating to the designated subjects, will have been provided. This plan for the settlement of interstate difficulties does not contemplate the presence of a federal representative in deliberations involving interstate disputes as in the negotiations for the reapportionment of the water of the Colorado River System to be made after October 1st, 1963. In the reapportionment conferences a representative of the federal government is expected to be present.<sup>203</sup>

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<sup>203</sup>"III, (f) Further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October 1st, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).

"(g) In the event of a desire for a further apportionment as provided in paragraph (f) any two signatory States, acting through their Governors, may give joint notice of such desire to the Governors of the other signatory States and to The President of the United States of America, and it shall be the duty of the Governors of the signatory States and of The President of the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin

The question of the effect of the Compact upon property rights in appropriated and unappropriated water may be approached from the point of view of its effect upon vested rights in the use of water, its effect as manifested by the creation of new rights owing their existence to the application of the provisions of the Compact, and its effect upon the present system of creating rights in the use of water.

The first of these, the question of the effect of the Compact upon vested rights, need not detain us. It may be disposed of by quoting the first sentence of Article VIII which reads, "Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this Compact."<sup>204</sup>

The question of the effect of the Compact as manifested by the creation of new rights owing their existence to the application of the provisions of the Compact, is not so simple. Article III contains several paragraphs, (a), (b), and (d), which are in point here. The first of these reads as follows: "(a) There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin respectively the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist." The second provides: "(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum." The third declares: "(d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact."<sup>205</sup>

In these paragraphs we have an apportionment of the water of the Colorado without respect to the actual use of the water. This raises the question of whether or not a state, by the exercise of its political power, may create within itself on behalf of its people, title to water before that water is put to beneficial use. It would seem that this is properly within the power of

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the beneficial use of the unapportioned water of the Colorado River System as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America."—*Colorado River Compact*, Nov. 24, 1922.

For the text of the paragraphs to which reference is made in the material quoted above, see Appendix II, Exhibit A, *Text of Compact*.

<sup>204</sup>See Appendix II, Exhibit A, *Text of Compact*.

<sup>205</sup>The text of Article III, and of the whole Compact, may be seen in Appendix II, Exhibit A, *Text of Compact*.

the state.<sup>206</sup> The Compact, therefore, may be said to give certain states the right to use definite portions of water and to give other states the right to use other definite portions of water.

There is nothing in the Compact to indicate whether or not that agreement, if ratified, would have any effect upon the present system of creating new water rights. Mr. Bannister of Colorado is uncertain concerning the effect of ratification of the Compact. He declares that the question of whether or not its adoption would change materially the rights to the waters of the Colorado River, depends upon which of the two cases, *Kansas v. Colorado* or *Wyoming v. Colorado*, applies to the Colorado River situation.<sup>207</sup> Mr. Davis of New Mexico is more positive in his statements. When commenting upon the effect of the Compact, the record shows that his remarks were as follows: "It does not revolutionize anything and it does not change anything. As far as the relations between the States are concerned it adopts the principle of the United States Supreme Court in

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<sup>206</sup>See the discussion in this chapter dealing with the grounds of state activity in Colorado River development.

<sup>207</sup>"MR. BAKER: Then your theory is that the ratification of the Compact would change and does change materially the rights to the waters of the Colorado River at the present time?"

"MR. BANNISTER: We do not know for a certainty whether it does or not. It all depends on which of those two cases I have cited applies to this situation. Perhaps I had better take that question up.

"But in *Kansas v. Colorado*, we had a controversy between two States, one of which was a simon-pure appropriation State, Colorado, and the other of which was a hybrid State, Kansas, as is California; and the court held in that case that there was no such thing as a priority to be gained by one State as against another. It also held that the lower State, by reason of being the lower State on the stream, did not have the right to have all the water come to it, undiminished in quantity. It also held that Colorado, by reason of being the State of origin, did not have the right to have all the water which originated in Colorado retained within its own borders. The court regarded those positions as positions of extreme State selfishness, and held that the principle to be applied was what the court called, in its own language, 'equitable division'; in other words, a fair amount of water delivered in each State, without any conclusive regard to the relative dates of use within the two States.

"And when it came to the case of *Wyoming v. Colorado*, which involved the Laramie River, and where the contest was between two simon-pure appropriation States, the principle laid down was that equitable division would not apply, Mr. Justice Van Devanter saying that in *Kansas v. Colorado* one of the States was not a simon-pure appropriation State, but had as its fundamental water law the law of riparianism; and then he applied this rule of interstate priority, the rule of which you have been speaking, as between the States for the use of the river with the burden of reservoir construction thrown on the lower state.

"Now, it is the contention of the people in our State, and I think of the other upper States as well, that inasmuch as California has exactly the same kind of water law as has Kansas—in other words, a State whose fundamental water law is riparianism, with such appropriation rights as there are carved out of previously existing riparian rights, that the rule to be applied to that river would be exactly the same as the rule laid down in *Kansas v. Colorado* for the Arkansas River."—*Hearings*, H. R. 2903, Part I, p. 188, February 20, 1924.

the case of *Kansas v. Colorado*. As far as the recognition of the doctrines of riparian rights and prior appropriation for beneficial use are concerned, it says absolutely nothing about them, but leaves the question to be determined by each individual State in accordance with its own laws and its own policy. The States are not today in agreement upon these doctrines. The Compact leaves the situation as it finds it."<sup>208</sup>

The Compact contains definite provisions concerning the question of preferred uses of water of the Colorado River. If ratified, this interstate agreement would create a hierarchy of priorities in the use of the water of that stream. The manner in which this would be accomplished will become evident as we proceed.

Article IV contains three paragraphs as follows:

"(a) Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its Basin, the use of its waters for purposes of navigation shall be subservient to the uses of such water for domestic, agricultural, and power purposes. If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.

"(b) Subject to the provisions of this compact, water of the Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

"(c) The provisions of this article shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water."<sup>209</sup>

According to this article the use and consumption of water for "agricultural and domestic purposes," constitutes a preferred use of the water. Water used for the generation of electrical power ranks next, and the use of the waters of the Colorado River for the purpose of navigation constitutes a use subservient to its use for all other purposes. This is the hierarchy of priorities created by the Compact stated without reference to its practical application.

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<sup>208</sup>*Hearings*, H. R. 2903, Part VIII, p. 1773, May 15, 1924.

<sup>209</sup>*Colorado River Compact*, Nov. 24, 1922.

For the statement of the Executive Secretary of the Federal Power Commission, Mr. Merrill, showing why power development was made subservient to agricultural and domestic uses, see Appendix II, Exhibit F, *Power Development Should be Secondary to Other Uses*.

Let us now suppose that the system of creating water-rights by prior appropriation continues to be in effect in the states interested in the Compact. With this as the effective means of creating property rights in the use of water, we may ask what will be the effect of the application of those provisions of the Compact which specify that the use of water for "agricultural and domestic purposes" is to be preferred to its use for power development, and which declare that the use of water for all these purposes is to be preferred to its use for navigation.

In order to make these provisions effective, an appropriator who is prior in time but is using the water for an inferior purpose, may come into conflict with a subsequent appropriator who wishes to use the water for a preferred use. What weight is to be given to priority in time as compared with ability to use for preferred purposes? Any tribunal or court which attempts to adjust competing claims on the basis of the terms of the Compact providing for these preferences and at the same time endeavors to keep in mind the principle of priority, will be forced to adopt some standard of evaluating ability to use for preferred purposes as compared with priority in time.<sup>210</sup> It is probable that this can best be done by some group of men who have become expert by reason of experience in the handling of questions involving water rights.<sup>211</sup>

Reviewing our consideration of the question of the effect of the Colorado River Compact, we find that although the belief in some quarters is that the Compact will make the rights of the federal government uncertain unless Congress in ratifying it specifically provides that the ratification is not intended to deprive the federal government of any right it now has, its provisions do not materially alter the respective spheres of authority of the federal and state governments in the development of this stream.

Our answer to the second question, that of the effect of the Compact upon the system of cooperation between the federal and state governments, was that an additional means for the determination of interstate controversies would be provided by the ratification of the Compact. Upon the three phases of the next question, that of the effect of the Compact upon property rights in appropriated and unappropriated water, we found as follows: First, that vested rights were not affected; second,

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<sup>210</sup>A number of excerpts from the minutes of the meetings and of hearings of the Colorado River Commission indicating some of the discussion on this point, are included in Appendix II, Exhibit G<sup>1</sup>, *Hierarchy of Priorities*.

<sup>211</sup>Another part of this thesis is devoted to the consideration of a suggested Colorado River Authority which would handle these issues as they arise.

that the states have been given the right to use definite portions of water; third, that the effect of the Compact upon the present system of creating new water rights is uncertain. The fourth subject which we have considered, that of the effect of the Compact upon preferred uses of water, led to the conclusion that the terms of the Compact would substitute a hierarchy of priorities for the relatively simple priority system as the basis of determining rights in water in the Colorado River Basin.

## CHAPTER VI

### POLITICAL ISSUES

The phrase "political issues" as used in this connection means a definite series of subjects. Those subjects are six in number. They may be listed as follows: one, sectionalism; two, the issue between public and private ownership of natural resources involved in the Colorado River; three, the political questions centering around the relation of Mexico and land owners of that nation to the Colorado River; four, the political questions arising between the Upper Basin and the Lower Basin within the United States; five, questions of a political nature between the separate states; and six, those issues which are related to the question of the coercion of one unit of government by another. The detailed application of the phrase "political issues" to each one of these subjects will become clear as we proceed.

As the development of the Colorado River is of interest to seven states of the United States, it is undoubtedly true that any steps for the development of that stream which involve the expenditure of national funds will be taken only if an agreement is reached between the senators and representatives of the Southwest and the senators and representatives of other parts of the United States. That period of our history when it was possible for a man by his own efforts to improve a piece of land has passed. The frontier lines disappeared about 1890, and since that time the less desirable pieces of land have been occupied. At the present time it is true that a large part of the land in the United States which is susceptible of improvement by the application of water lies in the Colorado Basin or in adjacent areas.

In the contest for the development of this stream there will be brought in to play all those factors which have been considered from time to time as population advanced across the continent. Arguments similar to those which were advanced in times past are found in the minutes of proceedings dealing with the present problem. "The Eastern manufacturer and the Eastern merchant and the worker know that every acre of land developed in the West creates a greedy market for his products," said Arnold Kruckman, Secretary and Treasurer of the League of the Southwest, in a letter to Secretary Hoover in 1922.<sup>1</sup>

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<sup>1</sup>The letter is written on stationery of the Raleigh Hotel, Washington, D. C., and is dated Jan. 31, 1922. Across the bottom is a written request to Mr. Stetson, by Mr. Kruckman, that the letter be filed with the records of the Colorado River Commission.

A map showing the origin of 674 car load shipments of manufactured prod-

There are those who believe, however, that the lands of the United States which have not yet been improved for agricultural purposes should still remain unimproved. The statement that there is an over-production of agricultural products is the stock argument of this group of people. As a part of their case they advance such statements as have been mentioned by Mr. Thomas H. Means, a civil engineer of note associated with numerous construction enterprises in irrigation districts, to the effect that there are from 100,000 to 150,000 acres of land in Imperial Valley under the ditch, and formerly cultivated, which now are lying idle, largely on account of economic conditions. But whatever may be the opinion of individuals and groups concerning the wisdom of increasing the agricultural acreage of the United States, it is expected that opposition arising from such sources will be overcome by the unanimity of belief that flood control to protect areas already reclaimed, is a proper object of federal activity.

The implications of the argument of sectionalism as applied to the Colorado River problem, are more detailed than is the meaning of that term when reference is made to the United States as a whole. Not only do we have different points of view between the East and the West, but there is also a certain sectional feeling within the Colorado River watershed itself. This is made the more acute by reason of the manner in which the Colorado Compact attempts to deal with the problem. In that agreement two divisions of the area are made—the Upper Basin and the Lower Basin. The evidence concerning the relative rapidity of development of these two basins, the Upper and the Lower, is conflicting.<sup>2</sup> Naturally, the representatives of each Basin wish to retain for their respective areas an amount of water sufficient to meet all present and all future requirements.<sup>3</sup>

Not only is there an attitude of sectionalism between the different sections of the United States on the one hand and

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ucts that go annually to one of the irrigation projects of the West is included in the Congressional Record, Sixty-Seventh Congress, Second Session, as part of the remarks of Representative John W. Summers, Washington, Saturday, June 3, 1922. Statistics of the same nature showing tons of freight moved into Southern California over transcontinental lines from territory East of Chicago, were included in a letter from Mr. Guy E. Marion, Manager of the Research Department of the Los Angeles Chamber of Commerce, Feb. 14, 1924, to Mr. Burdett Moody of the Bureau of Power and Light, City of Los Angeles.

<sup>2</sup>See Appendix II, Exhibit R, *Rate of Development of Upper and Lower Basins*.

Data relating to economic factors which comprise the basis of sectionalism are presented in Chapter IV, *Economic Background*.

<sup>3</sup>See the discussion in Chapter II, *Analysis of Compact*, dealing with Article III of the Compact.

between the Upper Basin and the Lower Basin within the Colorado River area on the other hand, but we find that within a single state itself—Colorado—a distinct spirit of sectionalism exists. When we consider the geography of Colorado we recall that the Eastern portion of that state lies within the Mississippi slope of the Rocky Mountains and outside of the Colorado River Basin. The Western portion of the state, however, lies within the Colorado River Basin. It has been estimated that 96 per cent of all the undeveloped or unappropriated water of the state of Colorado is found on the Western slope.<sup>4</sup> The Continental Divide separates the Eastern part of the state with such centers of population as Denver from the Western slope where there is but a comparatively sparse population. The problem then, from the point of view of Colorado, is to tunnel through the Continental Divide to bring the waters from the Western slope to the centers of population on the Eastern slope. In executing the details of this plan, jealousy between the two areas of the state abounds.<sup>5</sup>

Many of the most acute issues of a political nature relating to the Colorado River and its improvement arise out of the controversies between the advocates of public ownership of natural resources and those who believe in private ownership of such resources. Those who support public ownership assert that the rapidly decreasing natural resources of the United States should be held in trust for the people and be made useful through public enterprise. Those who take the opposing view believe that the natural resources of the nation are properly a subject of private

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<sup>4</sup>Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 10, March 31, 1922. The statement was made by Mr. R. I. Meeker, Irrigation Engineer and Special Deputy State Engineer of Colorado.

There is also jealousy between cities and communities more sparsely settled. See Appendix II, Exhibit EE, *Opposition between Cities and Country Areas*.

For a discussion of the problem of representation presented by the centralization of population, see Holcombe, Arthur N. *The Political Parties of Today, A Study in Republican and Democratic Politics*, pp. 63-64. (New York and London, 1924.)

<sup>5</sup>"MR. TOBIN: . . . I do not believe you will ever get the legislature of Colorado to pass a proposition, unless you add a full and conclusive proof that they would not be interfered with; because the people of the Eastern slope know there is no chance there for them to do any more in development than by return of water, and they cannot give up a drop of water; they want water from the Western range to help irrigate Eastern Colorado.

"MR. NORVIEL: You don't want to say that you people in Colorado are not sports enough to take an even chance with us?

"MR. TOBIN: I didn't say that: I said the point of Colorado is, if Western Colorado alone was interested in it, all question of State lines might be wiped out, and they might do it, but I would say that Eastern Colorado has not love enough for Western Colorado, to be bound by any contract of that kind; that is my opinion of it; it would be different if it were the Western Slope alone."—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, pp. 101-102, March 29, 1922.

ownership and that the interests of the people will be served best under a system of private ownership.<sup>6</sup>

Inasmuch as the four major purposes for which the Colorado River may be used are flood control, municipal water supply, irrigation, and power development, we find the power companies taking a pronounced activity and interest in all plans for Colorado River control. The leading power companies interested in this development are the Southern California Edison Company and the Southern Sierras Power Company. There may indeed be numerous other smaller organizations taking an active interest in the subject, but these are the two largest companies involved.

In the Federal Water Power Act of June 10, 1920, there was included a provision which gave a preference to public bodies in the granting of licenses for the development of power.<sup>7</sup> Whether or not this legislative policy declared in the act is actually followed in practice is another question, but the policy was definitely stated. Since that time the power companies in the Southwest have been active to protect their interests so that no undue share in any further development of power may be granted to municipalities or other public bodies.<sup>8</sup>

In the contest which is going on between the public ownership group and the private ownership interests, large sums of money are spent for purposes of advertising and lobbying. During the last year court action was successful in stopping the Imperial Irrigation district from maintaining a representative at Washington for the purpose of lobbying for the Swing-Johnson Bill. It was held that the funds of the Irrigation District could not legally be used for that purpose.

There is also evidence to show that the Boulder Dam Association, an organization of the public officials of practically all the Southern California cities and towns, has contributed large sums of money for the purpose of carrying on publicity and propaganda for the Swing-Johnson Bill. This bill comprises a plan for the construction under government auspices of the Boulder Dam, and is distinctly a government enterprise. The funds voted by the Boulder Dam Association for carrying on this publicity and propaganda come from taxes raised by the different cities, notably Los Angeles. Other items of expense include a contract for the services of Representative Phil Swing

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<sup>6</sup>Hearings, H. R. 2903, Part IV, p. 805, March 21, 1924.

<sup>7</sup>41 U. S. Statutes at Large, 1063, Sec. 7.

<sup>8</sup>See Appendix II, Exhibit GG, *Activities of Private Power Companies in Colorado River Development*.

as a lecturer on behalf of the Swing-Johnson Bill at the rate of \$25.00 a day.<sup>9</sup>

The American Legion is on record as supporting the Swing-Johnson Bill. This organization is interested in the legislation as a means of securing a large acreage of land for ex-soldiers and sailors. The present action of the ex-service men is in line with similar action of ex-service men throughout the history of the United States. Whenever there has been a call for Western lands, the ex-service man has been ready to give hearty support.<sup>10</sup>

One of the political issues which has caused bitter and heated controversy relates to the claims of Mexico in the Colorado River.<sup>11</sup> Although there may not be a fear at the present time on the part of many of those on the American side that there is insufficient water to supply all needs, nevertheless there appears to be a suspicion that if development continues in Mexico, the time will come when there will not be sufficient water for lands in the United States.<sup>12</sup>

The situation which obtains in Mexico is peculiar in that American owners own the larger part of all irrigable Mexican land. We have the words of Harry Chandler, editor of the Los Angeles Times, to the effect that he and his associates of the Colorado River Land Company own 832,000 acres south of the border.<sup>13</sup> The total number of irrigable acres in Mexico is said to be only 800,000. The fact that Americans own the larger portion of the land in Mexico which may be irrigated from the Colorado does not decrease the opposition of American owners of American lands to the development of Mexican lands at the expense of the development of United States land. Thomas C. Yager, a representative of the Coachella Valley County Water District, declares that the people of his section are anxious to see their lands developed under American laws rather than to stand by and see the gradual increase and growth in Mexico.<sup>14</sup> Mr. George H. Maxwell, long interested in irrigation problems, declares that a great part of the trouble encountered in present plans for de-

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<sup>9</sup>See Appendix II, Exhibit HH, *Activities of the Boulder Dam Association and Other Public Ownership Groups in Colorado River Development*.

<sup>10</sup>Imperial Irrigation District, *The Boulder Dam and All-American Canal Project*, p. 12, (pamphlet) January, 1924. *Hearings*, S. 727, Part I, p. 157, Dec. 23, 1924. *Hearings*, H. R. 2903, Part I, p. 5, Feb. 9, 1924.

<sup>11</sup>See Appendix II, Exhibit Z, *Political Aspects of Mexican Claims to Colorado River Water*.

<sup>12</sup>*Hearings*, H. R. 2903, Part V, p. 857, March 25, 1924; *Hearings*, S. 727, Part I, p. 167, Dec. 23, 1924. See Appendix II, Exhibit Y, *Relation of Mexican Claims to the Division of Water in the United States*.

<sup>13</sup>Letter of August 27, 1924. Mr. Chandler states that 165,000 acres are under cultivation, 125,000 acres being in cotton.

<sup>14</sup>*Hearings*, H. R. 2903, Part IV, p. 546, March 14, 1924.

velopment of the Colorado River, arises from the fact that much is now being done to attempt "to nail the Colorado River down for Mexico."<sup>15</sup>

It is quite evident that the American owners of Mexican lands have been vigilant in protecting their interests. In 1904 Harrison Gray Otis, founder of the Los Angeles Times, wrote to President Roosevelt asking "just consideration" of the United States Government, but not its "direct aid" in protecting his interests.<sup>16</sup>

The Mexican question is one of particular political importance by reason of the contract or concession under which the Imperial Valley of California gets its present water supply. By the terms of this concession the Mexican government grants to the Imperial Irrigation District the right to conduct its water through canals on Mexican soil from the Colorado River into the Imperial Valley.<sup>17</sup> The topographical conditions of the country are such that water cannot be taken from the Colorado River and conducted to the Imperial Valley without going through sand hills. No canal has been built through these sand hills at the present time, but plans are being considered for the building of an All-American canal. Until an All-American canal shall have been constructed it will be necessary for the Imperial Valley to get its water through Mexico.<sup>18</sup>

The concession to which reference has already been made under which the Imperial Valley takes its water through Mexico provides that no foreign government shall be interested directly or indirectly in the same. For that reason the stock in the Mexican corporation which holds the concession is held individually by the members of the board of directors of Imperial Irrigation District. The concession further provides that when a foreign government becomes interested in the concession automatically it will be cancelled.<sup>19</sup>

The fact that all the water which enters Imperial Valley of California at the present time must enter through Mexico would give ample reason for the Mexican question to become a political issue in Colorado River development.<sup>20</sup> But there are still other

<sup>15</sup>*Hearings*, H. R. 2903, Part VI, p. 1298, April 17, 1924.

<sup>16</sup>*Letter of April 9, 1904*, (from mimeographed copy of letter in the files of the Secretary of Commerce, Washington, D. C., Feb., 1925.)

<sup>17</sup>*Hearings*, H. R. 2903, Part IV, p. 651, March 19, 1924.

<sup>18</sup>See Appendix II, Exhibit CC, *The All-American Canal*.

<sup>19</sup>*Hearings*, S. 727, Part I, pp. 151-152, Dec. 23, 1924.

<sup>20</sup>Among the items which Mr. Mark Rose of the Imperial Irrigation District mentions as being particularly inconvenient are the following: Whenever anything is checked out of the warehouse on the American side of the line for use in Mexico it can be taken across the line only with the permission of Mexican officials. Similarly on each carload of rock used to keep the levees in condition,

points of contact between Mexico and the United States with respect to the Colorado. A contract provides that one-half of the water flowing in the canal which supplies the Imperial Valley may be used on Mexican soil for the purpose of irrigation. Consequently, if the flow of water in the canal is increased, the amount of water which ultimately reaches the Imperial Valley for use there is only one-half of the amount by which the flow of water is increased at the point of diversion.<sup>21</sup>

There are several ways of avoiding the difficulties which arise from the possibility of Mexico's using more than her share of water from the Colorado River and the fact that the Imperial Valley at the present time conducts her entire supply of water through Mexican territory. In the first place, a treaty might be entered into between the United States and Mexico definitely determining the amount of water to which Mexico would be entitled and definitely setting forth the requirements and duties of the respective parties on both sides of the boundary line. There seems to be no desire, however, on the part of the South-western states to believe that Mexico will carry out the details of any treaty. The treaty method, therefore, is not considered as a satisfactory solution of the difficulty.<sup>22</sup>

In the second place, both the difficulties arising from fear that Mexico may use more than her share of the water and the difficulties now encountered by reason of maintaining long canals in Mexican territory for the service of American lands may be

duty must be paid.—Hearings, *Committee on Irrigation and Reclamation*, United States Senate, Sixty-Eighth Congress, Second Session, S. 727, Part I, pp. 172-173, Dec. 23, 1924.

<sup>21</sup>“MR. SWING: The capitalists who first undertook the reclamation of Imperial Valley found themselves in the situation of having 60 miles of their main canal in Mexico; and they formed a Mexican corporation, because required by the Mexican Government; which refused to recognize an American corporation for operating any irrigation option in Mexico. This Mexican company is a private Mexican corporation, which has a charter from the Mexican Government, and in that charter this Mexican Corporation is authorized to divert from the river, up to 10,000 second-feet of water, one half of which—so the Mexican Government tells the Mexican private corporation—must be used, on demand, in Mexico; the other half may be disposed of elsewhere.”—*Hearings*, H. R. 2903, Part I, p. 23, Feb. 9, 1924.

See, also, the statement of Mr. Mark Rose, Chairman of the Imperial Irrigation District, *Hearings*, H. R. 2903, Part II, p. 250, Feb. 23, 1924. Other references are: *Hearings*, H. R. 2903, Part II, pp. 260-261, Feb. 23, 1924; *Ibid.*, Part VII, pp. 1584-1594, May 7, 1924.

<sup>22</sup>The Arizona legislature has urged that a treaty be negotiated. In the regular session of the Seventh Legislature, President Coolidge was memorialized to the effect that this subject be brought to a determination to the end that any increase in the low water flow caused by improvements or impoundment of flood waters on the Colorado River in the United States should not carry title if and when said waters may be put to beneficial use upon lands in the Republic of Mexico.—*Senate Joint Memorial No. 3*, Seventh Legislature, State of Arizona.

met by the construction of an All-American canal.<sup>23</sup> Mr. Mark Rose of the Imperial Irrigation District, states that in Mexico cattle are not kept off the banks of the canals as is true of the area within the United States. In fact, he is authority for the statement that it is nothing unusual to find the dead bodies of cattle and horses in the canal in Mexico.<sup>24</sup> Weeds and plants of various kinds, detrimental to farming in the United States, are allowed to grow on the banks of the canal in Mexico, thus contaminating the water supply and transplanting the seeds upon American soil. When objections have been made to these conditions through the Secretary of State, Mr. Rose declares that all that has been secured has been a statement that the only way to handle the situation would be to withdraw from Mexico.<sup>25</sup> Representative Swing has also mentioned the fact that the Imperial Irrigation District under the present system loses control of the water for sanitation and that the amount of water required is too large for filtration to be economically applied. To these charges Mr. J. C. Allison, a lessee of Mr. Harry Chandler<sup>26</sup> of the Los Angeles Times, enters a strenuous denial.<sup>27</sup>

It is said that the All-American canal is opposed by the majority of landowners on the American side of the line. Mr. Chandler, in addition to being interested in Mexican land, owns extensive acreage in the Imperial Valley in the United States. These lands are also served by the Colorado River. Mr. Chandler declares that he is opposed to the All-American canal on the ground of his ownership of land in the United States.<sup>28</sup> It is

<sup>23</sup>See Appendix II, Exhibit CC, *The All-American Canal*.

See Appendix IV, Exhibit C, *Map of Colorado River Delta Region*; Appendix IV, Exhibit E, *Map of the All-American Canal*.

Mr. Sellew, the engineer who designed and built the siphon under the Colorado River by which the lands on the Eastern side are served, has ordered a survey to determine the feasibility of driving a tunnel through the mountains and reaching the Imperial Valley by a route 165 feet higher than that already surveyed.—*Hearings*, S. 727, Part II, pp. 233-234, Jan. 23, 1925.

<sup>24</sup>*Hearings*, H. R. 2903, Part II, pp. 270-273, Feb. 23, 1924.

<sup>25</sup>*Ibid.*, p. 254, Feb. 23, 1924.

<sup>26</sup>*Ibid.*, Part VIII, pp. 1641, 1707-1708, May 8, 1924.

<sup>27</sup>"MR. ALLISON: . . . At no place is there any sewerage emptied into either the river or into the canal leading to Imperial Valley by any Mexican community. The Mexican Government maintains the same strict supervision over the matter of keeping the stock from grazing on the canals and over the matter of maintaining the purity of water supply that the authorities on the American side do; the direction of this work being under the supervision of the Government of the State of Lower California, as verified by Gov. A. L. Rodriguez of Lower California in his official communication dated March 21, 1924. . . ."

"The restriction in Mexico, and the eradication work on Johnson grass and obnoxious plants are the same as in the United States, if not more strict, as exhibited in the affidavit of R. Armendariz, Secretary of the National Chamber of Commerce of the Northern District of California."—*Hearings*, H. R. 2903, Part VIII, p. 1682, May 8, 1924; *Ibid.*, pp. 1736-1737.

<sup>28</sup>*Hearings*, H. R. 2903, Part IV, p. 608, March 18, 1924.

his belief that the tax rate upon his United States lands would be increased unduly by the building of the All-American canal.

Many people do not take this statement of Mr. Chandler's position as truly indicative of all the reasons for his position. They ascribe to Mr. Chandler and other owners of Mexican land the desire to irrigate their farms from the canal which is now used to supply the Imperial Valley. If this canal were not used for the Imperial Valley the land adjacent to it in Mexico would not so readily be supplied with water. The conclusion which many people draw from all the circumstances is that the owners of Mexican lands wish to have the water conducted to American lands via Mexico in order that half of the flow may be used upon Mexican lands.

Against the expense of building an All-American canal must be balanced the expense of maintaining the long canal in Mexico which serves the Imperial Valley at the present time. An elaborate system of patrol has been worked out and locomotives and cars are kept available for use at all times. A railroad yard is also maintained and whenever floods threaten the lower regions a crew of men and a trainload of rock is sent out to reinforce the levees.<sup>29</sup>

A third means of avoiding the difficulties incident to securing water over or through foreign territory is the purchase of such foreign territory from Mexico. At a Colorado River Conference of real estate dealers at Long Beach, California, which the writer attended during the summer of 1924, Mr. C. C. Tatum, president of a local organization of realtors of that state, declared that from that time forth he would advocate the purchase of Lower California in order that the area affected by the Colorado River delta might be within the jurisdiction of the United States.

One of the legislatures of Arizona is on record as favoring the annexation of Mexican territory in order to solve the question. The Fourth State Legislature of Arizona in 1919 advocated that Congress purchase the state of Lower California, the Coronado Islands, and the tract of land in the state of Sonora approximating in area 10,000 square miles and lying north of the parallel 31 degrees, 20 minutes north latitude. The reason for the action taken was stated to be that the business interests of the United States of America and especially of the Southwest portion thereof required the acquisition.<sup>30</sup>

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<sup>29</sup>See Appendix II, Exhibit G, *The Urgency of Colorado River Development. I. The Flood Danger.*

<sup>30</sup>Fourth State Legislature of Arizona, *Journal of the Senate*, p. 52, Jan. 17, 1919.

In his testimony before the Senate Committee on Irrigation and Reclamation, Mr. Mark Rose declared that to purchase Mexican territory at the present time would play into the hands of persons in the United States who now own areas of land in Mexico. The action, if taken at all, should have been taken thirty or forty years ago.<sup>31</sup>

Still another method of meeting the difficulties arising from conducting water through foreign territory to be used in the Imperial Valley has been suggested in certain quarters. This plan contemplates diverting the water of the Colorado at such an elevation, that the entire available supply would be needed to serve land within the United States. By withdrawing the water from the main stream at the 2,000 foot contour, or by raising it to that elevation, a vast acreage in Arizona which will not be reached by water diverted at lower levels, would be served. This is also true of lands lying west of the Colorado River.

Mr. Maxwell, long prominent in irrigation and reclamation work, suggested that a high line canal be built in Arizona. It was his idea that the water might be diverted from the Colorado River at a point approximately 2,000 feet above sea level. He estimated that a large portion of Arizona land which would not otherwise be irrigable might be served with Colorado River water by a system of tunnels through mountainous regions. Two Arizona engineers, Messrs. Sturtevant and Stam, made a survey of the engineering problems involved and reported that the plan was feasible. With this plan outlined, the question was raised as to whether or not it was regarded as feasible by engineers outside of Arizona. The Reclamation Service ordered an investigation and it was declared to be impracticable. The Los Angeles Chamber of Commerce also made an investigation and likewise determined that it was impracticable. However, during the latter part of 1925 when further engineering data had been made available, it appeared that the scheme was not so fantastic as certain interests made it out to be at the time that it was first proposed.

Mr. Walter G. Clark, a civil engineer of New York, is authority for the statement that water may be diverted from the Colorado River at a point high enough to permit gravity flow to Los Angeles, San Diego, and other areas between the river and the coast. Although this plan would involve the construction of seventy-mile tunnels through mountain ranges and would cost about one million dollars for each mile of the entire system, Mr.

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<sup>31</sup>*Hearings before the Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress; Second Session, S. 727, Part I, p. 175, Dec. 23, 1924.*

Clark takes the position that it is financially feasible if the water is needed for municipal purposes.<sup>32</sup>

Another factor of prime importance in the political situation involving Mexico is the apprehension which is felt in certain quarters in the United States that there will be a great danger of an Asiatic settlement at the headwaters of the Colorado River in Mexico and along the banks of the stream in Mexico in case the flow of the river is regulated and sufficient water is allowed in the river to improve vast areas of land in that country. The leader in this sentiment is Mr. Maxwell. For a number of years he has appeared at different hearings concerning the Colorado and has always asserted that there is grave danger of the agricultural interests of the United States, and particularly of the Southwest, being prejudiced by the competition of cheap Asiatic labor upon the land just south of the border.

In support of this position it is stated that Mr. Chandler in 1910 contracted with 300 Chinese to labor upon his lands in Mexico. However, though the contract may have been made with the 300 Chinese, only seventeen of them came into Mexico.<sup>33</sup> And when a proposed purchase by Asiatics became known to members of the State Department the transfer was discouraged. This being the situation, the sale was not completed.<sup>34</sup>

x There are certain political issues connected with Colorado River development which concern the relation between the Upper Basin and the Lower Basin. These issues seem to place these areas at odds, one against the other. By the terms of the Colorado River Compact the definition of the "Colorado River Basin" is such as to include all of the drainage area of the Colorado River System and all other territory of the United States to which the waters of the Colorado System shall be beneficially applied. The Compact also defines the Upper and the Lower Basins respectively as those parts of certain states within and from which waters naturally drain into the Colorado River System above or below Lee Ferry, and also all parts of certain states located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted above or below Lee Ferry respectively. These defini-

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<sup>32</sup>See Appendix II, Exhibit JJ, *High-Line Canals for American Lands*.

See Appendix IV, Exhibit F, *Map of the Arizona High-Line Canal*.

<sup>33</sup>*Hearings*, H. R. 2903, Part VII, p. 1623, May 7, 1924. See, also, Utley, Ernest R., District Attorney, Calexico, Calif., *Letter to Mr. J. C. Allison, Calexico, April 3, 1924, Hearings*, H. R. 2903, Part VIII, pp. 1728-1729, May 8, 1924; Clark, H. H., General Manager, Colorado River Land Company, *Letter to Mr. Harry Chandler, Los Angeles, March 18, 1924, Hearings*, H. R. 2903, Part VIII, p. 1738, May 8, 1924.

<sup>34</sup>*Hearings*, H. R. 2903, Part VII, pp. 1616-1618, May 7, 1924.

tions are framed in such a manner that they show that the Commissioners contemplated transmountain diversion.<sup>35</sup>

This fact of transmountain diversion afforded another occasion for discontent to spring up between the Upper and Lower Basins. The two most important centers of population outside of the watershed of the Colorado River System, are Denver and Los Angeles. If the amounts of water to be diverted to each are not approximately equal, there will be real cause for disagreement between the Upper Basin and the Lower Basin regardless of the legality or illegality of such diversion. Denver contemplates taking water through the Moffat Tunnel; Los Angeles contemplates taking water from the Colorado River near Blythe. Both of these areas are outside of the Colorado River watershed and contribute nothing to the flow of water in that stream.<sup>36</sup>

The states of the Upper Basin are anxious that the Compact be ratified. This is not true of the Lower Basin states. The latter regard the Santa Fe argument as a harmless expedient, the ratification of which may possibly help them to enlist the support of the states of the Upper Basin in securing legislation by Congress for further development. That is the only reason to be given to explain the measure of support which the Compact has enlisted in the Arizona and California legislatures, and its ratification by the Nevada legislature.<sup>37</sup>

<sup>35</sup>See Appendix II, Exhibit PP, *Diversion from the Colorado to the Mississippi Watershed*.

See, also, Appendix II, Exhibit L, *The Legality of Transmountain Diversion*.

<sup>36</sup>Mr. W. F. McClure, Commissioner for California, does not for a moment concede that Imperial Valley is outside the Basin. His argument is that the mere incident of the Colorado River having built a temporary barrier, does not eliminate the valley from the Colorado River watershed.—Colorado River Commission, *Cheyenne Hearing*, Senate Chamber, State Capitol Building, Cheyenne, p. 48, April 2, 1922.

<sup>37</sup>

“Department of the Interior  
United States Reclamation Service  
Washington, D. C.

“October 26, 1922.

“Office of the Chief Counsel”

“Mr. Clarence C. Stetson

Executive Secretary

Colorado River Commission

“ . . . It will be noted that the upper States are much more concerned in securing such a compact than are the lower States. As a matter of fact, the lower States have little to gain by a compact, while the upper States have much to gain. Accordingly, it would seem that any substantial concessions to be made in the way of a compromise in order to arrive at such a compact should be made by the upper States rather than by the lower States.

(signed) Ottamar Hamele

Chief Counsel.”

Concerning the proposal made by Mr. Carpenter for the division of the water between the Upper Basin and the Lower Basin, Mr. Hoover remarked, “Does not your proposal reach to the end that an equitable division of water is

The one fact underlying all controversy between the Upper Basin and the Lower Basin of the Colorado River region, is the fact that prior appropriators of water secure a better right to the continued use of that water than do subsequent appropriators. This being the status of the present legal system as set forth in the case of *Wyoming v. Colorado*, each Basin is determining its steps of procedure in accordance with the fact. The desire to feel secure in their rights, the belief that they will be deprived of their rights if no special agreement is entered into between the states of the Upper and Lower Basins, led to the drafting of the Compact, and has conditioned all subsequent action.<sup>38</sup> Security of future development is a thing of vital concern to each Basin; it cannot be enjoyed by the Upper Basin without an agreement such as the Compact. This being the condition, every possible argument is used to secure the ratification of the Colorado River Compact. The states of the Upper Basin are therefore very active in attempting to secure its complete and unqualified adoption. This is to be expected, and is exactly the point of view which would be taken by the other states if they occupied the position of the Upper Basin states.<sup>39</sup>

In line with this point of view, Mr. Bannister at the Denver hearings in 1922 asserted that there would be no hope of securing the consent of Congress to any scheme for the development of the Colorado River without an agreement similar to the terms incorporated in the Compact.<sup>40</sup> This has been reasserted on numerous occasions by representatives of the Upper Basin. In December of 1925 representatives of the Upper Basin states went to the extent of arranging a special conference with President Coolidge for the express purpose of declaring that they would oppose any plan for the development of the Colorado River until

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for you to perpetually take all the water you want."—Colorado River Commission, *Minutes of the Seventh Meeting*, Department of Commerce, Washington, D. C., p. 116, Monday, 2:30 P. M., Jan. 30, 1922.

<sup>38</sup>See Appendix II, Exhibit N, *Origin of The Compact*.

<sup>39</sup>See Chapter V, *Constitutional Questions*.

See, also Appendix II, Exhibit MM, *Protection to Upper Basin States by Provisions in Federal Legislation*, and Appendix II, Exhibit Z, *Political Aspects of Mexican Claims to Colorado River Water*, 4. *Deleted Portions of the Minutes of the Colorado River Commission Concerning Mexican Claims*.

<sup>40</sup>"It would be unfortunate for the Colorado River Commission not to reach an agreement. Without an agreement the lower states could have no hope of obtaining the consent of Congress to the construction of government projects on the lower portion of the river and the lower states would be opposing any proposed projects on the upper portion. It is best for all the states that development by both public and private agencies should go ahead."—Colorado River Commission, *Denver Hearing, State Senate Chamber*, Denver, pp. 140-141, March 31, 1922.

the seven states had agreed to be bound by the terms of the Santa Fe agreement.<sup>41</sup>

Another angle of the political issues between the Upper Basin and the Lower Basin relates to storage. Whenever adequate storage shall have been provided to meet the needs of all parties interested in the river there will not be the grounds for differences which now exist. But until that time, each state will be uncertain as to whether or not the water which was allotted to them under the terms of the Compact will prove sufficient for their needs.<sup>42</sup>

That this fact is realized is evident from the Finney Resolution by which the California legislature adopted the six-state compact with reservations. These reservations provide that the consent of California is given to the six-state compact only if and when storage is provided by a high Boulder Canyon dam.<sup>43</sup>

There is a marked tendency to over-estimate the amount of water required by the states comprising the Lower and the Upper Basins. This tendency to declare that more land is irrigable than is actually the case also results in controversy between the Upper and the Lower Basins. Mr. G. E. P. Smith, Irrigation Engineer of the University of Arizona, asserts that the Reclamation Service surveys indicate that it is feasible to irrigate only 1,500,000 acres in addition to the acres now irrigated. Notwithstanding this, he points out that the states of the Upper Basin are demanding water rights for 5,000,000 acres of land.<sup>44</sup>

Not only are there political issues between the Upper and the Lower Basins, but there are similar questions between the separate states of the Lower Basin. The original purpose of the

<sup>41</sup>It has been suggested that the necessary protection may be afforded to the Upper Basin states in any legislation which is desired by Congress if there is incorporated in that legislation a provision to the effect that the rights to water from the Colorado River shall be conditioned according to the terms of the Colorado River Compact whether that Compact be adopted or not. This method of attempting to give the Upper Basin states protection was incorporated in the second draft of the Swing-Johnson Bill. However, it has not the active support of the representatives of the Upper Basin States. The reason why they do not support this method of giving protection to the Upper Basin states is that it is not clear that the federal government by a legislative act can interfere with the system of water rights and the vesting of water rights in the different states.—See Chapter IV, *Constitutional Questions, B 2, The Source of the Right to Use the Water of Interstate Streams.*

See, also, Appendix II, Exhibit MM, *Protection to Upper Basin States by Provisions in Federal Legislation.*

<sup>42</sup>See Appendix II, Exhibit T, *Storage as a Condition Precedent to Division of the Water*; Exhibit AA, *The Question of Storage in the Negotiations of the Colorado River Commission.*

<sup>43</sup>See Appendix II, Exhibit KK, *The Six-State Compact.*

<sup>44</sup>Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, p. 138, March 15-17, 1922.

Colorado River Commission was to apportion the water among the separate states. That purpose could not be realized but what was considered to be the next best thing was done. The water of the stream was apportioned between the two divisions of the Colorado River area, the Upper Basin and the Lower Basin. The question, however, could not be avoided in this simple fashion, and it has shown its head since that time in negotiations between the states of Arizona, California, and Nevada.<sup>45</sup>

There was some indication during the meetings of the Colorado River Commission prior to the agreement upon the final draft that supplementary compacts would be desirable between a limited number of the seven states concerned. Strange to say, the minutes of the eighteenth meeting at Santa Fe indicate that a supplementary agreement between Arizona, Utah, and Nevada was given serious attention.<sup>46</sup> Subsequent events have shown that the states most active in negotiations designed to lead to a supplementary agreement, are Arizona, California, and Nevada. Proposals relative to the adoption of a tri-state treaty of this nature, followed the suggestion that six of the seven states adopt the Santa Fe pact.

The proposal that six of the seven states engage to carry out the terms of the Compact originally drafted for the ratification of seven states, was made by Mr. Carpenter of Colorado when it was found that Arizona would not adopt the Compact in the form in which it was drawn. The Colorado representative suggested to Mr. Hoover and others that the eleventh article of the Compact be changed to read that that agreement should become binding and obligatory when it had been approved by the legislatures of six of the signatory states and by the Congress of the United States. The interstate compact commissioner from Colorado made his suggestion in the early part of 1925. State legislatures meeting that year considered the six-state provision. All the legislatures of the different states consented to the six-state compact without reservations, except California. In that state the

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<sup>45</sup>See Appendix II, Exhibit LL, *Supplementary Tri-State Agreements*.

<sup>46</sup>"MR. CARPENTER: I would rather suggest, if these three states wish to agree, they may agree now among themselves, and submit their separate pact. Even though ultra vires at this time, if approved by their legislatures, it would become binding. But to here inject a clause for a specific case might open the door for clauses for other specific cases. I know of none at present. We have no objection (unless it is an opening of the door) to these three states agreeing on anything they may wish, so long as it does not destroy the general plan or interfere with the machinery here provided."—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, p. 45, Thursday, 10 A. M., Nov. 16, 1922.

See, also, Appendix II, Exhibit Z, *Political Aspects of Mexican Claims to Colorado River Water, 4. Deleted Portions of the Minutes of the Colorado River Commission Concerning Mexican Claims*.

form of ratification was conditional. It was required that the consent of California should not become effective until the Congress of the United States had provided for the construction of a high Boulder Canyon dam.<sup>47</sup>

It was perhaps intended by the sponsors of the movement that this method of procedure would leave Arizona to her own resources and perhaps cause her to ratify. The representatives of Arizona countered with a proposal that a supplementary compact be arranged between Arizona, California, and Nevada. This idea was taken up by California and Nevada whose representatives immediately applied themselves to the problem of drafting a compact. The agreement was submitted to Arizona December 1, 1925.

The reasons for the suggestion of Arizona are not difficult to find. Opposing the Compact because of the belief that its terms did not allow Arizona ample opportunity for future development, Arizona now wished to make its terms more specific by declaring the exact amount of water to be allocated to each of the states designated as Lower Basin states in the Compact. There is nothing in the original terms to indicate what these different equities in the water of the Colorado River should be.<sup>48</sup>

Various suggestions were made concerning the terms of a supplementary tri-state compact. One of the proposed drafts provided that Nevada should have all the water which could reasonably be applied within Nevada to domestic and agricultural uses. One-half of the remainder was allotted to California and the other half to Arizona. The proposed supplementary agreement also declared that any storage which was provided should accrue to Arizona, and that the burden of delivery of water to Mexico should fall upon the Upper Basin. The total result at the present writing is that no supplementary agreement has been adopted, although several proposals and counter proposals have been made.<sup>49</sup>

Events which have taken place during the last few years in connection with various plans for Colorado River improvement have been instructive with respect to the coercion which one group may exert upon another through the agencies of government. Since the time that the Compact met strenuous objection by the legislature of Arizona, that state has been compelled to

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<sup>47</sup>See Appendix II, Exhibit KK, *The Six-State Compact*.

<sup>48</sup>The possibility of arranging trades between the different states has been suggested by Mr. Hovland of Arizona. He declared that Arizona might allow Utah to have water for 1,000,000 acres if Utah would let Arizona put a dam in the river in Arizona close to the Utah line thereby impounding the larger portion of the water in Utah.—*Hearings*, H. R. 2903, Part V, p. 859, March 25, 1924.

<sup>49</sup>See Appendix II, Exhibit LL, *Supplementary Tri-State Agreements*.

bear the brunt of a deal of coercive action. The word "coercion" is one whose meaning is very distinct and clear, but no other word will suffice to explain the situation existing in Colorado River development with respect to Arizona's refusal to ratify the Compact.

At the time that the Compact was first presented to the seven state legislatures and met some opposition in each legislature, we find Mr. Bannister communicating with authorities at Washington for the purpose of determining whether or not permits for projects in the Lower Basin might be withheld by the Federal Power Commission.<sup>50</sup> A specific instance of this may be cited. Mr. James B. Girard of Arizona had for years been negotiating with the state authorities at Phoenix to secure a permit to develop power at Diamond Creek. The necessary authority was granted by the state of Arizona. However, as the site involved was one which affected the Colorado River over which the Federal Power Commission has jurisdiction under the Federal Water Power Act of 1920, a license from the Federal Power Commission was also required. The issuing of this license was the point where the upper states might effectively combat the development of the lower states and it was accordingly accomplished. No license has yet been issued.<sup>51</sup>

In a statement made July 12, 1925, Secretary of Commerce Hoover, chairman of the Colorado River Commission, called attention to the fact that the Eastern senators and representatives were in no humor to tax their constituents for reclamation

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"L. Ward Bannister,  
Counselor at Law  
801-7 Equitable Building  
Denver, Colo.

"May 1, 1923.

"Mr. Clarence C. Stetson,  
Commerce Building,  
Washington, D. C.

"My dear Mr. Stetson:

"Re: Colorado—Interstate Streams.

"This morning I received from the Secretary of the Federal Power Commission a letter, the body of which is as follows: "At its meeting on April 23 the Commission, after careful consideration of the matters presented at the hearing on April 19 concerning the Colorado River, decided to withhold action for the present on all Colorado River applications."

"Is there not going to be some public statement given to the Press all over the country, including Arizona, to the effect that until the compact is ratified no licenses are to be granted? It seems to me that a flat declaration of that kind from an authoritative source is what is needed to bring pressure for the ratification of the compact.

"Sincerely yours,  
(signed) L. Ward Bannister."

B.F.

See, also, Appendix II, Exhibit WW, *Federal Power Commission to Withhold Licenses until Ratification of Compact.*

<sup>51</sup>See Appendix II, Exhibit NN, *The James B. Girard Project.*

work and that the opposition of Upper Basin states to development in the Colorado River would be damaging.<sup>52</sup> Reference has already been made to the conference of Senators and representatives of the states of the Upper Basin with President Coolidge, December, 1925, for the purpose of securing his aid in opposing any development upon the Colorado River until such time as the Compact shall have been ratified by the seven states.<sup>53</sup>

Still other events show that the main purpose of the Upper Basin states has been to secure the ratification of the Compact.<sup>54</sup>

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<sup>52</sup>*Hoover Urges Colorado River Action*, Arizona Republican, Phoenix, July 14, 1925, p. 1.

It has been suggested that flood control would be sanctioned by Congress more readily than the expenditure of funds for other purposes.

"MR. MAXWELL: But my experience with legislative bodies—and I have had considerable experience with both California and Arizona legislatures and with Congress—is that flood control, or the direct appropriation of money for the protection of the property and lives of existing communities, is a recognized, legitimate avenue for public expenditure, as illustrated over and over again by the tens of millions of dollars that have been spent on the Mississippi River without any purpose of ever getting it back or any thought of ever getting it back, and we invoke the same principle on the Colorado River."—*Hearings*, H. R. 2903, Part VI, p. 1292, April 17, 1924; *Ibid*, p. 1288.

MR. MAXWELL: Now I am firmly convinced, gentlemen, and I want to say that to you as western men, that you will make a great mistake if you lose the opportunity to form a combination with the great forces that are now forming a national combination for a policy of national flood control, eliminating everything else, eliminating power, eliminating reclamation—just centering your minds on flood control, river control for the purpose of stopping these devastating floods. If you join that combination you can go right into Congress and have a triangular combination that would take in practically the whole South, because the whole South will go with the Mississippi Valley, the whole central West, because the whole central West will go with the Ohio Valley, and if we have the whole Southwest in this combination you can put through within two years from today, in my judgment, and perhaps in one year, a policy that will give you the money to build such a great work as, for instance, the Glen Canyon Dam."—Colorado River Commission, *Santa Fe Hearing*, pp. 27-28, Nov. 9, 1922.

President Coolidge has taken the stand that each project presents a distinct problem and should stand on its own merit.—*Log-rolling Must End, Coolidge Ban on River "Trades,"* Los Angeles Times, Dec. 13, 1925.

Portions of the following material included within parentheses, afford some reason to believe that the flood control requirement was regarded as a good political issue. I am of the opinion that Mr. Hoover deleted the portions indicated. The page in which the statements occur is part of a manuscript from which twenty pages have been crossed by lead pencil. The initials "H. H." occur on the manuscript.

"MR. SCRUGHAM: 'To protect the lower part of the basin from floods.'

"MR. HOOVER: (It sounds a little impressive—I tried to make it that way.)

"MR. NORVIEL: Why not add 'protection of lives and property'?"

"MR. HOOVER: Any other comment (on this piece of oratory)?"—Colorado River Commission, *Minutes of the Twentieth Meeting*, Bishop's Lodge, Santa Fe, p. 31, Sunday, 3:45 P. M., Nov. 19, 1922.

<sup>53</sup>*River Pact Demanded, Upper Basin Men See Coolidge*, Los Angeles Times, Dec. 15, 1925.

<sup>54</sup>Mr. Clarence C. Stetson, Executive Secretary of the Colorado River Commission, found it convenient to communicate with Mr. Mullendore, Mr. Hoover's private secretary, in code telegrams on numerous occasions. See Appendix II, Exhibit DD, *Code Telegrams*.

They seem to regard the means used as of secondary importance. The idea of the representatives of the Upper Basin states appears to be that ratification must be secured at all costs. Consequently, when the legislature of Arizona proved adamant, a new scheme was hit upon by Mr. Carpenter of Colorado. The six-state compact idea was suggested. This would threaten to leave Arizona outside the circle of congenial and cooperating states and undoubtedly bring that state to terms. But still the main purpose remained unaccomplished and the situation was complicated by the trend which events took in California. There the legislature decided that they would withhold their consent to the six-state compact until the federal government had provided for a high storage dam at Boulder Canyon.<sup>55</sup>

But there were still various ways of applying pressure to Arizona. Under the Work plan introduced by the Secretary of the Interior in January of 1926, the federal government was to undertake the building of the necessary structures, but only on condition that the seven-state compact were first ratified by at least six of the states. In the report to the Senate Committee on Irrigation and Reclamation, Secretary Work declared that benefits accruing from the power plants should be available only to those states which had adopted the Compact without qualification.<sup>56</sup> Reports from Washington during the last days of January, 1926, indicate that this method of dealing with Arizona will be no more successful than the others heretofore tried. Representative Hayden stated that the State of Arizona was prepared to carry the issue into the United States Supreme Court, and also asserted his belief that Arizona will not be disposed to ratify the compact in its present form.<sup>57</sup>

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<sup>55</sup>See Appendix II, Exhibit KK, *The Six-State Compact*.

<sup>56</sup>For the provisions of the Work plan, see 67 Congressional Record, No. 25, p. 1790, Sixty-Ninth Congress, First Session, Jan. 15, 1926.

<sup>57</sup>*Opposition to River Bill Gains Despite Revision*, Los Angeles Times, Jan. 23, 1926.

See Appendix II, Exhibit RR, *Proposed Litigation*.



## CHAPTER VII

### CONCLUSION

The introductory chapter of this thesis dealt with the physical features of the Colorado River area and the history of cooperative plans for bringing this stream under man's control. The second chapter consisted of an analysis of the terms of the Colorado River Compact. Chapters three and four gave an indication of the engineering and economic background of the Compact, one chapter being devoted to each subject. Constitutional and legal questions were discussed in chapter five. Chapter six was devoted to a consideration of the political issues involved in proposed developments under the Colorado River Compact. In the present chapter, the concluding one of this study, a suggestion will be offered of the manner in which the engineering, economic, constitutional, legal, and political difficulties discussed in the preceding chapters relating to Colorado River development, may be met. The creation of a Colorado River Authority by the seven interested states will be proposed.

The proposed Colorado River Authority has been suggested to the writer by developments of the Port of New York Authority.<sup>1</sup> The latter interstate agency resulted from cooperation

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<sup>1</sup>Governor James G. Scrugham, Nevada, referred to the Port of New York Authority in his testimony before the Senate Committee on Irrigation and Reclamation—*Hearings before the Committee on Irrigation and Reclamation, United States Senate, Sixty-Ninth Congress, First Session, pursuant to S. Res. 320, (68th Congress, 2nd Session) Directing the Committee on Irrigation and Reclamation, or a Duly Authorized Subcommittee thereof, to Make a Complete Investigation with Respect to Proposed Legislation Relating to the Protection and Development of the Colorado River Basin*, Part IV, p. 462, Las Vegas, Nevada, Nov. 2, 1925, Washington, Government Printing Office, 1925. Some months prior to November, 1924, Governor Scrugham had suggested the formation of an interstate power and irrigation district to plan and carry out the Colorado River project.—Grunsky, C. E., 50 *Proceedings of the American Society of Civil Engineers*, No. 9, p. 1482, November, 1924; See, also, *Hearings*, S. 727, Part II, pp. 299, 305-306, Jan. 23, 1925.

See Chapter V, *Constitutional Questions*, for additional references to interstate agencies. Legislation establishing the Port of New York Authority may be found in Laws of New York, 1921, Chapter 154; 1922, Chapter 43, and Laws of New Jersey, 1921, Chapter 151; 1922, Chapter 9. See, also, a note by G. H. Elmore, 39 *Harvard Law Review*, 499, March, 1926, on the Port of New York Authority.

See Appendix II, Exhibit D, *The Untaxable Port Authority*.

Attention may be called to the action of New York and New Jersey in 1900 in enacting statutes "authorizing the appointment of ten commissioners by each Governor, and creating this commission into a 'body politic' with power to acquire and condemn land for the purposes of the Palisades Interstate Park. Out of these ten commissioners, only five are required to be residents of the State, and each Governor is thus at liberty to appoint five commissioners who are residents of a different State . . . The practical result is that each Governor appoints

between the states of New York and New Jersey which enacted legislation establishing a centralized body for the purpose of administering the business of the port of New York. It was provided by this legislation that commissioners should be appointed by the two states for the purpose of conferring and drawing up plans for the administration of the harbor. After due deliberation it was decided that the Port of New York District should be created. This district was defined by definite boundaries and the New York Port Authority, a body corporate and politic, was created with certain enumerated powers and jurisdiction. Six commissioners made up the Port Authority. These commissioners were to be three resident voters of each state.

Among the enumerated powers of the Port Authority were those of purchasing, constructing, leasing, and operating any terminal or transportation facility within the Port of New York District. In order to accomplish this major purpose the New York Port Authority might own, hold, lease, or operate real or personal property, borrow money, and secure the same by bonds or mortgages upon any property held by the Port Authority. Provision was also made for additional powers and duties to be delegated and imposed upon the Port Authority from time to time by the action of the respective legislatures. An Annual Report by the Port Authority to the Legislatures of each state was required. This report was to include in detail the operations and transactions conducted by the Port Authority pursuant to the agreement between the states of New York and New Jersey.

The first duty of the Port Authority was to suggest a plan or plans for the comprehensive development of the Port of New York. This comprehensive plan was then to be submitted to the two state legislatures and if adopted by the legislatures, the Port Authority was to carry out the terms of the comprehensive plan.

The manner in which the problems relating to the Port of New York were attacked by the two states concerned is of particular interest to the seven Southwestern states interested in Colorado River development. This is especially true at the present time when the terms of the definitive Compact of November 24, 1922, have failed of ratification. That the terms of this interstate agreement have not been ratified by the seven legislatures is not

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five members to the commission from the other State, who have already been appointed by the other Governor. This, a single commission of ten members constitutes the administrative body with control over the area of the park embracing a section of both New York and New Jersey."—Frankfurter, Felix, and Landis, James M. *The Compact Clause of the Constitution, A Study in Interstate Adjustments*, 34 Yale Law Journal, 685, Note 22a, pp. 690-691, May, 1925.

surprising. The Compact attempted too much. It was not possible to provide for the division of the waters between the seven states concerned. This plan, as has already been pointed out, was abandoned in the early days of the negotiations.<sup>2</sup> Nor was it possible to divide the water between the Upper Basin and the Lower Basin in a manner satisfactory to all.<sup>3</sup> It is quite unlikely that the Colorado River Compact signed by the representatives of the states in Santa Fe in November, 1922, will ever be ratified by the seven states. A new method must be adopted, and if it is to secure the support of the different states, its first concern must be the development of a governmental instrumentality in which the sections of the Colorado River area will have confidence.

It is in this connection that the method followed by the states of New York and New Jersey is particularly instructive. Although numerous railroads would ultimately be affected, there was no attempt, as a first step, to determine the exact lines which should be consolidated to form a certain "Belt Line". The acts of the different legislatures provided only that a compact should be entered into between the states which would give an official capacity to delegates of the respective states. These delegates then determined that a comprehensive plan should be drawn up by the body created by the legislative action of the two states. When the comprehensive plan was determined upon, it was submitted to the legislatures. If satisfactory to these bodies they would then provide that the comprehensive plan be put into effect. Only one step was taken at a time. This is the method which should be followed in Colorado River development.

It is evident that some kind of a permanent body was contemplated by the members of the Colorado River Commission prior to the time that they drafted the Compact signed at Santa Fe in 1922. Mr. Hoover, chairman of the Commission, submitted a resolution at the sixth meeting of the body to the effect that no division of waters of the Colorado River should take place until the construction of one of the major dams had been assured.<sup>4</sup> It seems that the idea in the minds of a number of the commissioners was that there should be a permanent commission to allocate the water as needs arose. Messrs. Carpenter and

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<sup>2</sup>See Appendix II, Exhibit Q, *Allocation to States versus Allocation to Basins*.

<sup>3</sup>Failure to secure ratification led to attempts to ratify the Compact as a six-state treaty and to proposals that supplementary agreements be entered into between a limited number of states.—Appendix II, Exhibit KK, *The Six-State Compact*, and Appendix II, Exhibit LL, *Supplementary Tri-State Agreements*.

<sup>4</sup>Colorado River Commission, *Minutes of the Sixth Meeting*, Department of Commerce, Washington, D. C., p. 81, Monday, 10 A. M., Jan. 30, 1922.

Emerson of Colorado and Wyoming respectively, were of the same opinion.<sup>5</sup>

The same idea was expressed by persons who were not members of the Colorado River Commission. Representative Swing suggested a Federal Colorado River Commission in his testimony before the Colorado River Commission at its second meeting in Washington on January 27, 1922.<sup>6</sup> Among those who sponsored the idea upon other occasions during the hearings and meetings of the Colorado River Commission were Mr. Beveridge of Wyoming,<sup>7</sup> Mr. Garrison, of Utah,<sup>8</sup> Mr. LaRue of the Geological Survey,<sup>9</sup> and Mr. W. L. Hansen of Utah.<sup>10</sup>

Earlier that same year at the hearings of the Colorado River Commission in the State Senate Chamber at Cheyenne, Mr. Corthell stated that it had occurred to him that possibly the Commission should make only a tentative agreement disposing of but a part of the flow of the stream based on present knowledge, leaving for future disposition the balance of the flow of the water. He was of the opinion that a commission would have more data at hand at a later date and could work more efficiently.<sup>11</sup>

The manner in which a Colorado River Authority would contribute to help meet the engineering difficulties involved in Colorado River Development will be discussed in the following paragraph. Then the contributions which a Colorado River Authority might make to the solution of economic difficulties will

<sup>5</sup>Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 100-106, passim, March 28, 1922.

<sup>6</sup>p. 58.

<sup>7</sup>Colorado River Commission, *Cheyenne Hearing*, State Capitol Building, Cheyenne, pp. 41, 110, April 2, 1922.

<sup>8</sup>Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, p. 98, March 28, 1922.

<sup>9</sup>Kruckman, Arnold, Secretary of the League of the Southwest, *The Colorado River Riddle*, (Pamphlet published by the Southwest Digest, 403 South Hill Street, Los Angeles), p. 18.

<sup>10</sup>Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 67-68, March 27, 1922.

<sup>11</sup>Colorado River Commission, *Cheyenne Hearing*, State Senate Chamber, Capitol Building, Cheyenne, p. 20, April 2, 1922.

See, also, statement of Mr. Doremus, Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, p. 21, March 27, 1922.

There is reason to believe that commissioners were charged with the duty of determining rights to water under the Mexican regime:

"Whether the plan of Pitic is or is not a scheme in all respects applicable to every pueblo created after the date, November 14, 1789, . . . it may be conceded the provisions contained were, in substance, those having force in the pueblos established in California while it was part of the territory of Mexico. The nineteenth . . . section of the plan reads: . . . 'the commissioner shall take particular care to distribute the waters so that all the land that may be irrigable might partake of them.'"—*Lux v. Haggin*, 69 California Reports, 255 (1886).

also be considered. Following these subjects the contributions of a Colorado River Authority to the solution of constitutional and legal questions will be examined. Finally, the contributions of a Colorado River Authority to the solution of political difficulties which at present form a large part of the entire question, will be explained.

A Colorado River Authority would aid in meeting engineering difficulties by making it possible for a continuing body to determine whether or not a particular dam should be built. The Colorado River Authority would keep among its records all data bearing upon the question of whether or not a particular project would serve the best interests of the entire region, and would determine whether or not such a project would be adaptable to a comprehensive plan.<sup>12</sup> Furthermore, a Colorado River Authority would make it possible for power distribution to be equalized. In case a peak water flow were found to occur during the same months of each year for several years, provision could be made for the distribution of the load in accordance with the physical facts. In short, if there were a Colorado River Authority, the solution of individual questions could be taken up in due order and proper time and consideration allowed for each.<sup>13</sup>

The solution of economic questions would be promoted by a Colorado River Authority. Its creation would provide the means for determining economic questions upon an impartial basis. Thus, if there were a difference of opinion with respect to whether or not a large amount of water is required in the Lower Basin states and only a small amount of water in the Upper Basin states due to the alleged difference in the rapidity of development of the respective Basins, representatives of the Colorado River Authority might make a study of the facts concerning the relative rapidity of development of the two areas.<sup>14</sup>

Another question of an economic nature with which a Colorado River Authority might deal is the question of the return flow from irrigated lands. The minutes of the Colorado River Commission contain a number of statements by representatives of the Upper Basin states to the effect that the water which they

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<sup>12</sup>The statement has been made that plans should be drawn to provide for future development over a period of at least fifty years.—Department of the Interior, *Memorandum for the Press*, March 17, 1924.

<sup>13</sup>"The only element . . . that requires immediate action, . . . the control of floods sufficiently to save the lower valleys from annihilation, is almost smothered in the haste to solve all the problems of the river at one stroke."—Allison, J. C., 50 *Proceedings of the American Society of Civil Engineers*, No. 9, p. 1436, Nov., 1924.

<sup>14</sup>Emerson, Frank C., Colorado River Commission, *Cheyenne Hearing*, State Senate Chamber, Capitol Building, Cheyenne, p. 32, April 2, 1922.

divert from the Colorado River for use upon their fields is not in fact finally consumed. They state that the water which is diverted and kept within the Basin in the upper region of the stream percolates through the soil and finally returns to the stream at a lower point. If this is the case then the question of the amount of return flow is quite an important factor which enters into the determination of the volume of particular portions of water to be allotted to the different basins.<sup>15</sup>

Still other factors affecting the economic situation include the question of transmountain diversion of water.<sup>16</sup> If it be assumed that the water is capable of division upon an equitable basis at a particular period of time it does not necessarily follow that that division will continue to be an equitable one. By reason of new transmountain diversions or by reason of a host of other changing conditions, the apportionment of water which may be an equitable apportionment at one time, may not continue indefinitely to be an equitable apportionment. The Colorado River Authority, a continuous body charged with safeguarding the interests of the entire area, would serve the very essential purpose of constituting a permanent agency of the seven states to observe the changing conditions of an economic nature which underlie an equitable division of the water.

Still another duty of a Colorado River Authority in the field of economics would be to conduct a series of studies showing the extent to which crops produced in the Colorado River area compete with crops produced in other sections of the country. It may be that most of the crops produced in the Colorado River Basin are of a different kind and reach the market at a different period of time than crops raised in other states. That this is true is the opinion of Dr. Walker.<sup>17</sup>

We now turn to the question of the manner in which a Colorado River Authority would affect the constitutional and legal difficulties which press on every hand in Colorado River development.

In the first place, the presence of a Colorado River Authority actively doing business in the Colorado River area would contribute to the solution of constitutional and legal difficulties in that the activities of such a Colorado River Authority would make it possible to determine the proper degree of centralization of power in a regional commission. As a part of this determination of the proper centralization of power in a regional body,

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<sup>15</sup>See Appendix II, Exhibit ZZ, *The Question of Return Flow*.

<sup>16</sup>See Appendix II, Exhibit PP, *Division from the Colorado to the Mississippi Watershed*.

<sup>17</sup>*Hearings, H. R. 2903, Part IV, p. 789, March 21, 1924.*

the Colorado River Authority would conduct studies of the proper relation between the United States Government and the regional commission. These studies need not be formal in nature, but might consist of the scientific consideration of whether or not certain questions should be handled by the separate states, by a regional body as agent of the seven states, or by the federal government. It is submitted that the argument which one finds on every hand in the hearings and minutes of the Colorado River Commission to the effect that because the Colorado River is a stream which concerns more states than one it must necessarily be a national question, is fallacious. We have at the present time too much of this type of reasoning. It should not be said that a certain problem is a national one because it is larger than a state problem. A more nearly correct statement would be that the problem which is larger than the interests of one state but of less than national importance, should be regarded as a regional problem to be administered by a regional body.<sup>18</sup>

A Colorado River Authority would also contribute to the solution of constitutional and legal questions involved in Colorado River Development in that it would open the way for the development of a needed substitute for the present appropriation system of water rights in the states concerned. It has already been pointed out in preceding paragraphs that the present system of determining water rights in the waters of streams, the prior appropriation system, is a survival from the time when the factors in production did not occupy the same position which they hold at the present time.<sup>19</sup> The prior appropriation system works very well so long as there is ample water. But as soon as scarcity comes to be the predominating condition the prior appropriation system breaks down and there must be a conscious control of the vesting of water rights in accordance with other principles. To the determination of these principles a Colorado River Authority might properly direct its attention. Their development is not the concern of anyone at the present time. Perhaps an interstate body could formulate, upon the basis of data gathered by its special committees, the principles which should control in determining the rights of opposing claimants. With a number of years of experience and study it is quite likely that the time will come when the Colorado River Authority will have determined the basis upon which concessions to the water in the Colorado River may properly be granted.

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<sup>18</sup>See Appendix II, Exhibit AAA, *Proper Centralization Required in Colorado River Development*.

<sup>19</sup>Chapter IV, *Economic Background*.

The whole question of determining the relation between state commissions of the seven states regulating public utilities in each of the states, is one which might properly come within the scope of activity of a Colorado River Authority. In the chapter on constitutional questions the problem which is raised by the interstate transmission of electrical energy was discussed in some detail. It is in this connection that a Colorado River Authority might render invaluable service. It is not suggested that such a body should replace or supersede the state commissions but it is undoubtedly true that a centralized body acting as agent of each and all of the seven states might very well control any corporations engaged in the interstate transmission of electrical energy. If the control of such corporations is properly within the sphere of action of the federal government under the interstate commerce laws, the Colorado River Authority would still give valuable service in cooperating with the federal government.<sup>20</sup>

The proposed Colorado River Authority would serve as a clearing house for complaints registered by any section of the Colorado River area. The Colorado River District which it would represent would be the area over which it would have jurisdiction in the cases specified in the legislation setting up the Colorado River Authority.<sup>21</sup>

Still another method in which a Colorado River Authority would contribute to the harmonious development and administration of the proposed Colorado District would be by allocating to different private companies the duty of serving certain specified areas. At the present time there is no centralized regional body which is charged with the responsibility of taking into consideration all phases of the problem or of looking at a specific project from the point of view of the interests of the entire basin. It is quite probable that after several years experience the Colorado River Authority would be able to make definite

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<sup>20</sup>Chapter V, *Constitutional Questions*.

See, also, Appendix II, Exhibit AAA, *Proper Centralization Required in Colorado River Development*.

<sup>21</sup>"It is not necessary that the two states concur in the delimitation of the jurisdiction of the courts within each state. This is the exercise of the police power of the state, in accordance with its agreement with its sister state. Nothing in Chapter 623 of the Laws of 1924 (State of New York) requires concurrence of New Jersey."—Before the Legislative Committee on Grade Crossings. In the Matter of New Facilities for the New York Central Railroad Company on the West Side of the Borough of Manhattan in the City of New York, *Memorandum Prepared for the Use of the Committee by the Port Authority in Response to the Memorandum Filed by the New York Central Railroad Company as to the Jurisdiction of the Port of New York Authority*, p. 11, Dec. 19, 1925.

suggestions concerning the allocation of the duty of serving certain areas.<sup>22</sup>

A Colorado River Authority would render valuable service to the Colorado River area by the work which it would be in a position to do in connection with rate regulation. There are several phases of this problem. In the first place, as was pointed out in the chapter on constitutional questions, the problem of rate regulation may be viewed from the point of view of the individual consumer. If we follow the suggestion of Mr. Philip Wells of Pennsylvania, such regulation of retail rates should be left entirely to the states in which the consumer lives. That seems to be the preferable manner. In the second place, however, we have the problem of regulating the corporations engaged in the development of electrical energy. These corporations may properly be controlled by the states in which the power plants are located. The third corporation is the transmission corporation. This, he suggests, should be a federal corporation or subject to federal control. It is possible, however, that such a transmission corporation might be created by the joint action of the seven states concerned and administer, in the capacity of an interstate corporation, the business involved in the interstate transmission of electrical energy in the Colorado River area.<sup>23</sup>

We now turn our attention to the question of the manner

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<sup>22</sup>"Whether the building of reservoirs on the Colorado River is accomplished by public or private agencies, our company will expect to have allocated to it such portion of the power to be developed in connection therewith as will reasonably be required for the service of the territory dependent upon it for electric light, heat and power, and to meet the cost thereof either by directly participating in the expense of developing such power or by purchase of the power so allocated to it at the rates and upon the conditions as may be prescribed by the regulating authorities."—West, A. B., President and General Manager, Southern Sierras Power Company, Riverside, California, *Hearings*, H. R. 2903, Part IV, p. 616, March 19, 1924.

<sup>23</sup>" . . . It thus appears that the original corporation with the name of the New York, New Haven & Hartford Railroad Company was an association of two artificial persons to which each of two sovereigns, by appropriate legislation designed to have a concurrent effect, had offered a franchise to become an artificial judicial person by that corporate name, with power to act and contract and sue and be sued, and that they effected an organization in 1872 in substantial conformity with its terms. Legislation of such a nature mutually concerted by different states does not, in the absence of legislation by Congress to the contrary, come within the prohibition of agreements or compacts between states contained in the Constitution of the United States, Const. Art. 1, Par. 10, *St. Louis and San Francisco Railway v. James*, 161 U. S. 545, 562, 16 Sup. Ct. 621, 40 L. Ed. 802."—*Mackay et al. v. New York, New Haven and Hartford Railroad Company et al.*, Supreme Court of Errors of Connecticut, April 14, 1909, 72 Atl. Reporter, 583.

See, also, Appendix II, Exhibit AAA, *Proper Centralization Required in Colorado River Development*.

in which a Colorado River Authority might be of use in meeting the political difficulties arising in Colorado River development.

At the time that the Colorado River Compact was drafted, provision was made for the appointment of a commission at any time that it might be necessary to settle controversies arising under the Colorado River Compact. It is specified in Article VI of that instrument that the governors of the states involved in any controversy may appoint commissioners with power to consider and adjust such claims or controversy subject to ratification by the legislatures of the states concerned. This was an important part of the Compact, but not sufficient attention was paid to its provisions. As was indicated in Chapter II, Analysis of the Compact, major attention was given to the definitive apportionment of the water of the Colorado River between the Upper and Lower Basins. The idea which underlies the plan for adjudication of disputes outlined by the Compact, was worthy of detailed consideration. It will find its more nearly complete expression in a Colorado River Authority.

The failure of the Colorado River Commission to provide a continuing body constantly in session for the purpose of hearing conflicting claims which might be asserted by different interests, is one of the serious deficiencies of the Santa Fe agreement. A number of the arguments which were advanced in the recent discussion in this country in favor of the entry of the United States into the World Court, are in point here. If it could be argued that the World Court is more efficient than the Hague Tribunal by reason of the fact that the World Court is constantly available whereas the Hague Tribunal is only a panel of judges from which a judicial body may be selected to hear the particular case presented, it may also be asserted that a Colorado River Authority will be more efficient than the Commissioners proposed under the Colorado River Compact because of the fact that the proposed Colorado River Authority will be a continuing body always in session and ready to hear controversies, whereas the plan contemplated by the Colorado River Compact does not contain this element of permanence. Lacking in this respect, it is quite probable that many causes of controversy will remain hidden, there being no adequate means of expression and the process of securing a hearing being a complicated one.<sup>24</sup>

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<sup>24</sup>"Reference to legislatures and to Congress for settling controversies is probably the most unsatisfactory that could be devised in view of California's well known ability to maintain a lobby at Washington."—Appendix II, Exhibit LL, *Supplementary Tri-State Agreements, 2. Arizona's Analysis of Proposed Compact of December 1, 1925.*

With a Colorado River Authority established as an administrative agency to deal with Colorado River problems there will be no occasion for the definitive apportionment of Colorado River water among the seven states to remain in effect for a long period of years. When such an apportionment is undertaken it means that rights are created in water before such water is put to beneficial use. This method of dealing with the problem causes apprehension on the part of those persons to whom the water was not apportioned. They become fearful lest they may some day have need of the water. Under a Colorado River Authority no rights would be created before the time that the water would be put to beneficial use. Perhaps this result constitutes the greatest contribution which may be expected from the creation of a Colorado River Authority.

It will be recalled that a definitive apportionment was attempted in the Colorado River Compact. In that agreement it was sought to divide the water of the stream for a period of forty years. Assuming that this division could be made at the present time to the absolute satisfaction of all interests concerned, there is every reason to believe that numerous controversies would arise before the forty-year period had expired. Causes of dissatisfaction by reason of changing conditions may have been engendered in various sections.

A Colorado River Authority would avoid these difficulties. It is realized that what is necessary is a governmental agency created by the several sovereign states which will contribute to the confidence and good will of each of the states concerned. Such confidence and security is lacking the moment a definitive compact affecting all the waters of the stream, is entered into for a period of years. On the other hand, the moment that a trusted governmental agency becomes a reality and is in session to hear any controversy which may arise, there is an increased sentiment of confidence and security.

The Colorado River Authority could apply uniform principles in determining justice in particular cases. It does not help much to say that what is needed is an equitable division of water between the states. What is needed is a standard which may be applied in order to determine what is an equitable division. It is submitted that a Colorado River Authority, by hearing a number of cases from time to time and by dealing with subject matter relating to problems which center around the use of the water in the Colorado River, will develop the technique essential to efficient administration.<sup>25</sup>

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<sup>25</sup>"The Supreme Court has said that they will not be controlled by the laws

Another material service which a Colorado River Authority could accomplish would be to provide for a uniform scheme of financing proposed projects.<sup>26</sup> In this connection, such an interstate agency might determine the amount of money which ought to be contributed by the Upper Basin states for the purpose of providing storage in the Lower Basin in return for which they secure the right to 7,500,000 acre-feet of water each year.

The Colorado River Authority would be in a position to take definite problems of development out of the field of departmental jealousies and give them to the region concerned. This is not to be relied upon too completely, however, because it is quite possible that in addition to the departmental jealousies which now exist there would be added another jealousy, namely that of the Colorado River Authority. However, it is reasonable to suppose that something of real value could be contributed by a body representing the entire Colorado River area and having at hand the information necessary to determine wise policies.<sup>27</sup>

The creation of a Colorado River Authority would add another body susceptible to political influences. For that reason, perhaps, the Colorado River Authority will be opposed in certain quarters. At the present time there is reason to believe that the municipal bodies and the private power companies have their lobbies at Washington and in the different state legislatures quite well organized. They would not favor, therefore, the necessity of organizing lobbies to secure the favorable action of another body, the Colorado River Authority.<sup>28</sup>

A compromise between the extreme view of those who are in favor of public ownership of natural resources and the extreme view of those who favor private ownership would be represented by the organization of a Colorado River Authority. It is obvious that some sort of governmental control must be exercised over the remaining natural resources of the nation. This follows by reason of the rapid depletion of such resources. The present day involves considerations in addition to those which had to be taken into account in years past. New interests press and unless we are ready to centralize a distinctly regional problem in Wash-

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of any one of the states, that they will make use of any principles of justice that may be necessary to the question."—Miller, Judge N. C., Colorado River Commission, *Grand Junction Hearing*, Grand Junction, p. 131, March 29, 1922.

<sup>26</sup>Fowler, Frederick H., and Smith, G. E. P., 50 *Proceedings of the American Society of Civil Engineers*, No. 9, pp. 1463, 1497, November, 1924.

<sup>27</sup>*Reply of Proponents of H. R. 2903 to Letter of the Federal Power Commission of March 24, 1924*, Hearings, H. R. 2903, Part VIII, pp. 1851-1854, 1853, May 17, 1924.

<sup>28</sup>Martin, Professor Charles E., *Interview of July 8, 1925*.

ington, we must take the necessary step to secure regional control because state control is inadequate.

The relation of the proposed Colorado River Authority to Mexico is one of a considerable degree of delicacy. However, the international issues could be handled better if there were a Colorado River Authority in existence than if there continues to be no such body. There is a real question as to whether or not representatives of Mexico should be allowed to participate in the considerations of any Colorado River Authority which may be created. In any event, however, this question must be handled by the federal government, and it would appear to be a reasonable conclusion that the international issues could be handled more satisfactorily by the national government cooperating with a centralized regional authority.<sup>29</sup>

There are certain minor details in which a Colorado River Authority would contribute to the solution of political difficulties. The magnitude of the question involved is such that it may become necessary for universities within the Colorado River area to establish foundations for the purpose of carrying on special research and study of the issues involved in the development of this stream. The Colorado River Authority could contribute much of value in the establishment of such foundations. In fact, the educational values which would flow from the existence of the Colorado River Authority would be one of its great benefits.<sup>30</sup>

The possible national significance of a Colorado River Authority should not be overlooked. At the present time the best known agency of this kind is the New York Port Authority created by the legislatures of New York and New Jersey. If the seven states can successfully construct a Colorado River Authority for the purpose of doing the work which may be assigned to such an interstate agency under the compact clause of the federal constitution, a distinct contribution will have been

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<sup>29</sup>Appendix II, Exhibit BBB, *Desirability of a Treaty with Mexico*.

See, also, Appendix II, Exhibit Y, *Relations of Mexican Claims to the Division of Water in the United States*, and Appendix II, Exhibit Z, *Political Aspects of Mexican Claims*.

<sup>30</sup>"It has been necessary for the State of Colorado since the beginning to conduct campaigns of education and it is the educational value of this Commission from which we will derive the greatest benefit. Except to one who has grown up and has had a lifetime of experience in irrigation this process of education is slow and difficult. Colorado has been particularly unfortunate of late in that those judges of the Supreme Court who are the more experienced and who had received the benefit of our campaigns of education have passed away, and others inexperienced and uninformed on this subject have taken their place."—Field, John E., Consulting Engineer, Denver, *Colorado's Relation to Interstate Water Problems*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 52-53, March 31, 1922.

made to the science of American government. It has been suggested that during the next quarter century the compact clause of the federal constitution will be developed much as the interstate commerce clause was developed in the quarter century following the case of *Gibbons v. Ogden* decided by the Supreme Court in 1820.

More than this, it has been suggested that the day may come when in addition to the state and federal governments as the leading types of government in the United States there will be several regional legislatures organized for the purpose of controlling regional problems.<sup>31</sup> The elasticity of the federal constitution and its adaptability to changing conditions is strikingly illustrated by the undeveloped possibilities of the compact clause of the federal constitution. Let a careful plan, therefore, be worked out by the seven states interested in the Colorado River so that another contribution will have been made to the preservation of the benefits of local government at the same time that the benefits of national government are retained.<sup>32</sup> This consti-

<sup>31</sup>Munro, William B., Lecture of Jan. 5, 1926.

<sup>32</sup>"EL CENTRO, March 13.—Congressman Frederick M. Davenport, elected from the Thirty-third Congress District in New York, stopped here today while making a survey of the Imperial irrigation system. The Congressman has recently visited the Muscle Shoals Dam, and the Roosevelt Dam and stated that he will include a visit of the Columbia River, where another power project is pending, before returning to New York . . .

"Water is one of the national problems, not only from a standpoint of irrigation projects but from the power angle. Each section of the United States is at present concerned with its gigantic water project. The Northeast with the St. Lawrence, the Southeast with Muscle Shoals, the Southwest with the Colorado River, and the Northwest with the Columbia River. I have just visited the Muscle Shoals mile-long dam in Alabama and the Roosevelt Dam. Before autumn it is my intention to have made a visit to the Columbia River region with an aim to study possibilities of water development there,' Congressman Davenport said."—*Davenport at El Centro, Congressman Studying Water Conditions in Four Corners of Country*, Los Angeles Times, March 14, 1925.

"A supply of potable water is one of New Jersey's most serious problems. Communities live in dread of exhaustion of the reserves they have. Newark is the only large city of the State that feels secure for the next fifteen years, thanks to the enterprise of its Government . . . At a conference of boards and commissions in Trenton on Thursday Governor Moore advocated the State's acquiring all sources of supply for the benefit of the people. He maintained that development by private capital had not been a success. But if this plan could not be realized, he recommended a single commission to deal with the water problem . . .

"In reports of the proceedings at Trenton nothing of a favorable nature concerning the Tri-State Delaware River Treaty appears. It provided for a division of water among New York, New Jersey and Pennsylvania. The compact drafted by commissioners of the three States has never been popular in New Jersey, although Colonel Starrett of its commission has declared that ratification of the treaty would insure New Jersey against a water 'famine' for the next hundred years. According to estimates, each of the three States would ultimately receive 1,000,000,000 gallons a day for municipal purposes. That is about as much as New York City now gets from the Croton, Kensico, Ashokan

tutes the challenge of the Colorado to the present generation. It is hoped that this study of the Compact will contribute its share to a satisfactory solution.

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and Schoharie systems. Instead of ratifying the treaty, the New Jersey Legislature last year provided for a commission to study the Tri-State Compact. The commission was instructed to inquire whether relationship with any other State for the development of water resources lying partly within New Jersey was practicable. In June the New Jersey Water Policy Commission was organized. In February of this year it reported against the Tri-State compact as it stood. The commission was represented at the conference at Trenton. It had recommended that negotiations with New York and Pennsylvania be continued, but a proposal was also made that New York and New Jersey consider some kind of an agreement to use for reservoirs in common the water of other interstate streams than the Delaware. The Hackensack, Ramapo, Pochuck and Walkill rivers were named.

"Pending interstate compacts to develop water systems, Governor Moore urged that the North Jersey District Water Supply Commission take up the Chimney Rock project, but it was his judgment that when completed the State should acquire it. . . . Under present conditions the strife between communities for water would sometimes be ludicrous if the matter were not one almost of life and death."—*New Jersey's Water Problem*, Editorial. New York Times, Feb. 20, 1926.

"Colorado and Nebraska have availed themselves of the compact clause in the federal constitution for the adjustment of an important inter-state question . . . In 1923 commissioners from these two states negotiated what is known as the South Platte River Compact; Nebraska approved the agreement that same year, Colorado in 1925. The United States Senate passed one day last week the bill to grant the approval and consent of Congress to the compact, and doubtless the measure will be favorably considered in the House.

"This compact deals with one of those questions of 'the fullest possible satisfaction of the competing demands on a limited water supply by an increasing population,' which Prof. Felix Frankfurter and James M. Landis of the Harvard Law school said a year ago must be 'an ever-present concern in the daily lives of the people in one region' in this big country, 'while hardly touching the imagination, let alone the lives, of millions of people in other parts of the country.' The compact represents also their dictum that 'no one state can control the power to feed or to starve, possessed by a river flowing through several states.'

"The great Colorado River Compact, not yet ratified by one of the participating states, attracted such nation-wide attention that various other states seized upon the compact method for the solution of their own irrigation difficulties. This South Platte river agreement is a case in point.

"The two states at joint expense are to maintain a stream-gauging station on the river to ascertain the amount of flow from Colorado into Nebraska. Colorado is to maintain, operate and extend within Nebraska the Peterson Canal and other canals of the Julesburg irrigation district, and to continue to exercise control over these canals. Nebraska obtains the right to construct and operate a canal for the diversion of water from the river within Colorado for irrigation of lands within Nebraska. These are the essential items in the agreement, which contains much detail respecting the amount of flow and the apportionment of water.

"The compact system is a convenient and effective method for the adjudication of what might be called 'regional disputes' within the territory of the United States, disputes that do not lend themselves readily if at all to the jurisdiction of the supreme court. Thus the states of the great Colorado basin hope to reach an agreement as to the division of the waters of that mighty river for the reclamation of vast areas of arid lands. Governor Pinchot proposed several weeks ago that the anthracite-burning states should resort to this compact proviso for the solution of their fuel problem. It would seem that such a distinct 'region'

What, then, is the most urgent need of the Colorado River area? Confidence and trust between the states. How may this spirit be promoted? By wise and judicious men patiently and carefully manipulating the machinery of interstate cooperation. It is submitted that a Colorado River Authority is worthy of trial as a means to this end.

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as New England might readily obtain thus that unification of method in dealing with important issues that has been sought at times of emergency when the common interests of these six states obviously was involved. Perhaps a New England waterpower policy might thus be constructed."—*Another Inter-State Compact*, Editorial, Boston Herald, Feb. 25, 1926.





PART II  
APPENDICES

# APPENDIX I

FAC-SIMILE AND PHOTOGRAPHS



WARREN G. HARDING,

President of the United States of America.

To all who shall see these Presents, Greeting:

KNOW YE, That reposing special trust and confidence in the Integrity and Ability of Herbert Hoover, of California, I do appoint him, under the provisions of the Act of Congress approved August 19, 1921, entitled "An Act To permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes", to participate as the representative of and for the protection of the interests of the United States in the negotiations to be conducted pursuant to the aforesaid Act, and do authorize and empower him to execute and fulfil the duties of this commission with all the powers, privileges and emoluments thereunto of right appertaining.

IN TESTIMONY WHEREOF, I have caused the Seal of the United States to be hereunto affixed.

GIVEN under my hand, at the City of  
Washington, this seventeenth  
day of December in the year of  
our Lord one thousand nine  
hundred and twenty-one, and of  
the Independence of the United  
States of America the one  
hundred and forty-sixth.

*Warren G. Harding*

By the President:

*Charles E. Hughes*  
Secretary of State.

APPENDIX I--EXHIBIT A

FAC-SIMILE OF PRESIDENT HARDING'S APPOINTMENT OF HERBERT HOOVER TO  
REPRESENT THE UNITED STATES IN COLORADO RIVER NEGOTIATIONS



APPENDIX I--EXHIBIT B

PHOTOGRAPH OF THE COLORADO RIVER COMMISSION

Front Row (left to right): Governor Emmet D. Boyle, Nevada; Governor Oliver H. Shoup, Colorado; Secretary of Commerce Herbert Hoover, Chairman; Governor Merritt C. Mechem, New Mexico. (The governors are not members of the Commission.)  
Back Row (left to right): Delph E. Carpenter, Colorado; James G. Scrugham, Nevada; R. E. Caldwell, Utah; Frank C. Emerson, Wyoming; Stephen B. Davis, Jr., New Mexico; W. F. McClure, California; W. S. Norviel, Arizona.



APPENDIX I--EXHIBIT C

PHOTOGRAPH OF COMMISSIONERS UPON SIGNING COMPACT

Seated: Secretary of Commerce Herbert Hoover, Chairman of the Colorado River Commission

Standing (left to right): Frank C. Emerson, Wyoming; Stephen B. Davis, Jr., New Mexico; W. S. Norviel, Arizona; Delph E. Carpenter, Colorado;



OFFICIAL PHOTOGRAPHS

COPY OF ORIGINAL

“Information Division  
LDS/tn

“WAR DEPARTMENT  
Office of the Chief of Air Service  
Washington

“Mr. R. L. Olson,  
8 Conant Hall,  
Harvard University,  
Cambridge, Mass.

August 18, 1925.

“Dear Sir:

“Further reference is made to your letter of July 30, 1925, in compliance with which the Chief of Air Service has directed me to forward you the six attached photographs of the Colorado River.

“In using these prints it is understood that they are only for the thesis which you mention, and will be used with the following caption, “Official Photograph, U. S. Army Air Service.”

Very truly yours,

H. H. Arnold  
Major, Air Service.

“1 incl. (consolidated)  
Photographs.”





APPENDIX I--EXHIBIT D  
OFFICIAL PHOTOGRAPH OF THE COLORADO RIVER, U. S. ARMY AIR SERVICE



APPENDIX I--EXHIBIT D  
OFFICIAL PHOTOGRAPH OF THE COLORADO RIVER, U. S. ARMY AIR SERVICE

## APPENDIX II

MINUTES OF THE COLORADO RIVER COM-  
MISSION AND DOCUMENTARY DATA



APPENDIX II—EXHIBIT A

TEXT OF COMPACT

No. 6241  
UNITED STATES OF AMERICA  
DEPARTMENT OF STATE

To all to whom these presents shall come, greeting:

I certify that the document annexed is a true copy of the "Colorado River compact," signed November 24, 1922, at the city of Santa Fe, N. Mex., the original of which is on file in this department.

In testimony whereof I, Charles E. Hughes, Secretary of State, have hereunto caused the seal of the Department of State to be affixed and my name subscribed by the chief clerk of the said department, at the city of Washington, this 22d day of December, 1922.

CHARLES E. HUGHES,  
Secretary of State.

(Seal.)

By Ben G. Davis,  
Chief Clerk.

COLORADO RIVER COMPACT

The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, having resolved to enter into a compact under the Act of Congress of the United States of America approved August 19, 1921 (42 Statutes at Large, page 171), and the Acts of the Legislatures of the said States, have through their Governors appointed as their Commissioners:

W. S. Norviel for the State of Arizona; W. F. McClure for the State of California; Delph E. Carpenter for the State of Colorado; J. G. Scrugham for the State of Nevada; Stephen B. Davis, Jr., for the State of New Mexico; R. E. Caldwell for the State of Utah; Frank C. Emerson for the State of Wyoming; who, after negotiations participated in by Herbert Hoover, appointed by the President as the representative of the United States of America, have agreed upon the following articles:

ARTICLE I

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.

## ARTICLE II

As used in this compact:

(a) The term "Colorado River System" means that portion of the Colorado River and its tributaries within the United States of America.

(b) The term "Colorado River Basin" means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.

(c) The term "States of the Upper Division" means the States of Colorado, New Mexico, Utah, and Wyoming.

(d) The term "States of the Lower Division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

(f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry.

(g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry,

(h) 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.

## ARTICLE III

(a) There is hereby apportioned from the Colorado River system in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.

(c) If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).

(d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.

(e) The States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water which can not reasonably be applied to domestic and agricultural uses.

(f) Further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October first, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).

(g) In the event of a desire for a further apportionment, as provided in paragraph (f), any two signatory States, acting through their Governors, may give joint notice of such desire to the Governor of the other signatory States and to the President of the United States of America, and it shall be the duty of the Governors of the signatory States and of the President of the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin the beneficial use of the unapportioned water of the Colorado River System, as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America.

#### ARTICLE IV

(a) Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes. If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.

(b) Subject to the provisions of this compact, water of the Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

(c) The provisions of this article shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water.

#### ARTICLE V

The chief official of each signatory State charged with the administration of water rights, together with the Director of the United States Reclamation Service and the Director of the United States Geological Survey, shall cooperate, ~~ex~~ officio:

(a) To promote the systematic determination and coordination of the facts as to flow, appropriation, consumption and use of water in the Colorado River Basin, and the interchange of available information in such matters.

(b) To secure the ascertainment and publication of the annual flow of the Colorado River at Lee Ferry.

(c) To perform such other duties as may be assigned by mutual consent of the signatories from time to time.

#### ARTICLE VI

Should any claim or controversy arise between any two or more of the signatory States (a) with respect to the waters of the Colorado River System not covered by the terms of this compact; (b) over the meaning or performance of any of the terms of this compact; (c) as to the allocation of the burdens incident to the performance of any article of this compact or the delivery of waters as herein provided; (d) as to the construction or operation of works within the Colorado River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or (e) as to the diversion of water in one State for the benefit of another State; the Governors of the States affected, upon the request of one of them, shall forthwith appoint Commissioners with power to consider and adjust such claim or controversy, subject to ratification by the Legislatures of the States so affected.

Nothing herein contained shall prevent the adjustment of any such claim or controversy by any present method or by direct future legislative action of the interested States.

#### ARTICLE VII

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.

#### ARTICLE VIII

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 Upper Basin shall attach to and be satisfied from water that may be stored not in conflict with Article III.

All other rights to the beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that basin in which they are situate.

#### ARTICLE IX

Nothing in this compact shall be construed to limit or prevent any State from instituting or maintaining any action or proceeding, legal or equitable, for the protection of any right under this compact or the enforcement of any of its provisions.

#### ARTICLE X

This compact may be terminated at any time by the unanimous agreement of the signatory States. In the event of such termination all rights established under it shall continue unimpaired.

## ARTICLE XI

This compact shall become binding and obligatory when it shall have been approved by the Legislatures of each of the signatory States and by the Congress of the United States. Notice of approval by the Legislatures shall be given by the Governor of each signatory State to the Governors of the other signatory States and to the President of the United States, and the President of the United States is requested to give notice to the Governors of the signatory States of approval by the Congress of the United States.

In witness whereof the Commissioners have signed this compact in a single original, which shall be deposited in the archives of the Department of State of the United States of America and of which a duly certified copy shall be forwarded to the Governor of each of the signatory States.

Done at the City of Santa Fe, New Mexico, this twenty-fourth day of November, A. D. one thousand nine hundred and twenty-two.

(Signed) W. S. Norviel.

(Signed) W. F. McClure.

(Signed) Delph E. Carpenter.

(Signed) J. G. Scrugham.

(Signed) Stephen B. Davis, Jr.

(Signed) R. E. Caldwell.

(Signed) Frank C. Emerson.

Approved:

(Signed) Herbert Hoover.

The above copy of the Compact was made from Document No. 605, House of Representatives, Sixty-seventh Congress, Fourth Session, pp. 7-12.



## APPENDIX II—EXHIBIT B

# THE RELATION OF THE CORPORATE STRUCTURE OF THE POWER BUSINESS TO PROBLEMS OF REGULATION

*Philip P. Wells*

“For the simplification of the problems of regulation as to interstate commerce in electric power, it is suggested that the corporate structure of the business, so far as it is conducted in large volume by private enterprise in public service, be segregated into three parts, generation, transmission and distribution, each conducted by a separate corporation. Generating, transmitting and distributing corporations serving substantially the same communities should be allowed to hold each other’s stock without limit. Service from the generating to the transmitting company and from it to the distributing company should be subject to state public utility regulation. Interstate commerce should be confined to transmitting corporations and be regulated by agreement of the states concerned as above stated.

“By agreements of this character regional districts embracing many states could be built up with a minimum of reliance upon Federal action in a matter touching intimately and directly the lives of multitudes of citizens in all communities throughout the conference. It would then remain to provide for the interconnection of these districts for the interchange of power among them. Perhaps, when this stage of development has been reached it may be found that the task of regulation requires direct Federal action. (Baum, in his Atlas, suggests one regional power company to conduct interchange of power throughout each of the twelve regional power districts into which he tentatively divides the United States. Interchange among these districts would then be a matter of arrangement among the twelve regional power companies. He does not discuss the problem of regulation.)”—Wells, Philip P., *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, (Giant Power Number, Large Scale Electrical Development as a Social Factor) Vol. CXVIII, pp. 163, 166-167, March, 1925.

The kind of an interstate agreement which Mr. Wells mentions in the preceding paragraphs is given a word of explanation in the following:

“When coal burned in Giant Power plants in the coal fields is the source of cheap electric current used in public service, the Federal Government has no jurisdiction over the disposal of the resource. It, therefore, falls to the producing state to see to it that the power is delivered to local distributing units free of excessive cost, and, as to such units beyond its own borders, that they be given no advantage over its own people. (It is alleged that failure to foresee and guard against such an outcome has resulted in German, French and Italian industries securing current developed at water from sites in Switzerland at rates

lower than those paid by their Swiss competitors.—The Editor.)

“This duty is obviously reciprocal and calls for an agreement between the states concerned. Failing such agreement a producing state like Pennsylvania, rich in exhaustible fuel power, but poor in perpetual water power, would be well advised to withhold grants of its sovereign powers whether by incorporation, eminent domain or otherwise, in aid of the exportation of its natural power resources to any other state refusing equal and reciprocal advantages with respect to its natural power resources. The stability which such an arrangement needs could best be supplied by a compact between the two states consented to by Congress under Article I, Section 10, paragraph 3, of the Federal Constitution. Failing this the regulation of interstate transmission and distribution of electric power seems destined to fall under direct Federal administration.

“ . . . Interstate commerce should be confined to transmitting corporations (as distinguished from generation and distribution corporations) and be regulated by agreement of the states concerned as above stated.”—Wells, Philip P., *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, (Giant Power Number, Large Scale Electrical Development as a Social Factor), Vol. CXVIII, pp. 163, 166-167, March, 1925.

## APPENDIX II—EXHIBIT C

### OPPOSES FEDERAL UTILITIES CONTROL

*Secretary of Commerce Hoover*

“WASHINGTON, Oct. 14.—Regulation of public utilities by the Federal Government was sharply opposed by Secretary Hoover at the thirty-seventh annual convention of the National Association of Railroad and Utilities Commissioners here tonight.

“In the course of his address the Secretary said:

“If we are to stretch the interstate commerce provision in the Constitution to regulate all those things that pass State lines, we shall automatically absorb to Federal authority most of the Government that lies within State lines, because our economic life has become so enmeshed that there is no longer that easy conception of our forefathers of what constituted interstate commerce. If we do not resist this extension, what becomes of that fundamental freedom and independence that can rise only from local self-government?”

“I wish to kick to local authority when the power rates are unjust. I want to kick where the searchlight of public opinion and local knowledge can be brought to bear. Far more than this, I want to live in a community which governs itself. I do not believe the people of our communities have yet become so supine or so careless of the fundamental advantages of self-government that they are ready to surrender control of their most intimate concerns to a paternal Government at Washington, however wise or however powerful.

“We can agree that a revolution is in progress in the electrical industry through the scientific discovery of long-distance transmission and the consequent economies in production and improvement in service to be gained by the consolidation of generation into central plants with the same equipment providing the night lights of cities and the day load of industries. This revolution is as necessary as the rising sun if we are to have cheaper power and greater service. The result is the creation of larger companies covering power districts surrounding these central generation plants.

“At this point I wish to emphasize a distinction that has an importance in all conception of regulation, ignorance of which has been responsible for much misapprehension. This interconnection simply means the sale of surplus power from one district to another and does not bear any more implication of ‘trusts’ and ‘giant monopolies’ than the interchange of cars between different railway systems.

“The argument is sometimes used that the power situation is parallel with the railroads, where Federal regulation has been found necessary. It differs in several profound respects. Power has no such interstate implication as transportation.

“Furthermore, there has been outrageous exaggeration of the probable extent of interstate power. For economic reasons these power districts will in but few cases reach across State lines. The interstate loading of our railway trans-

portation probably comprises 70 to 80 per cent of the total goods carried by rail. The proportion of interstate movement of power will increase, no doubt. And this interstate movement is of high importance for economy in power production.

“But interstate problems arise only where the activities of the operating companies extend beyond State lines. They fall into two classes; first, where the same company is engaged in generation and distribution over a district embracing parts of two or more States, and, second, where an operating company purchases power generated in a foreign State—the latter instance also embracing the ‘interconnection’ between districts lying in different States.

“As to the first class, it has been well established by the courts in analogous instances that the State Commissions have the power and authority to establish ‘reasonable rates’ to their consumers whether the property may be wholly within the State or not. These cases take care today of the large proportion of the two per cent passing our State lines. There remains, therefore, a small fraction of the problem, where the distributing company buys power by interconnection, or otherwise from outside the State. Here the question is simply as to whether the rate paid for the purchased power is reasonable. If unreasonable, the commission may refuse to allow its full amount in settling the rate base. It is open to the commission to fix a rate for resale to consumers within its jurisdiction based upon what the commission considers a fair price.

“It is difficult to conceive of a situation which, so far as public interest goes, could not be controlled in this simple and effective manner. If, in the passage of time and the accumulation of experience, the unexpected, either economic or legal, should happen and we find an occupied field requiring regulation, it will be time enough then to talk of Federal control. No such condition exists today or is apparent in the future.

“The third contention is that some of the States have not or will not set up adequate machinery for protection of public interest. But Federal Government for this reason is the ultimate extinction of local government.

“The fourth contention is that this evolution of the industry has developed ‘trusts’ which do or will defy public interest. I am perfectly confident that American States are not going to surrender their rights and their freedom to any ‘trust’ or ‘trusts’. The American people have not forgotten how to take care of themselves.”—New York Times, Oct. 15, 1925.

## APPENDIX II—EXHIBIT D

### THE UNTAXABLE PORT AUTHORITY

*New York Times (Editorial), November 17, 1925*

"In the opinion of Mr. Hughes neither New York nor New Jersey nor the United States has power to tax the Port Authority. Its property, its bonds and the income from the bonds are all equally exempt. This is the result of the statutes creating the Authority. It is peculiarly a case where the power to tax is the power to destroy. The existence of the Port Authority may be said to turn upon the validity of the opinion asserting exemption. It may be taken as the law, until the highest court rules otherwise, that the Port Authority is an instrument of government and not an instrument of commerce.

"There are practical as well as legal aspects of this position. The Port Authority has officially said that it is willing to pay local taxes. Now it seems that its terminals in Manhattan will be an addition to its more than three billions of exempt property. That is a more serious matter for New York City than for the local authorities at the end of these two bridges which are the subject of Mr. Hughes' opinion. They will benefit more by the bridges than they will lose by the exemption from taxation.

"There are other terminal corporations, but none like the Port Authority. It has considered an issue of \$17,000,000 in bonds, which might have been difficult but for the opinion of Mr. Hughes. Financial authorities dislike to float an enterprise which can earn nothing for years while building. Presumably, all such doubts are removed by this opinion, which declares that the law makes the Authority's bonds eligible for savings banks, trustees and all fiduciary investors. In that case the Authority ought to be able to finance itself without further cost to the States joined by the bridges."—*New York Times (Editorial), November 17, 1925.*



APPENDIX II—EXHIBIT E

ARIZONA CLAIM REFUTED; RECORDS OF LAND  
OFFICE SHOW WATER RIGHTS OF  
COLORADO RIVER RESERVED  
TO GOVERNMENT

*Los Angeles Times, December 18, 1924*

“PHOENIX, Dec.—In the United States Land Office here has been found an interesting error of notation on the tract books covering the Colorado River area, this being a statement that withdrawal of waterpower sites by the national government had been made on February 19, 1917. The real date of withdrawal has been found to have been February 9, a matter of large importance as affecting governmental ownership of all Colorado River power dam sites.

“In the Arizona Statehood Enabling Act, Section 28, due consideration was given the possibility of water power generation within the new State. The provision follows: ‘There is hereby reserved to the United States and excepted from the operation of any and all grants made or confirmed by this act to said proposed State all land actually or prospectively valuable for the development of water power or power for hydroelectric use or transmission, which shall be ascertained and designated by the Secretary of the Interior within five years after the proclamation of the President declaring the admission of the State; and no land so reserved and excepted shall be subject to any disposition whatsoever of said State, and any conveyance or transfer of such land by said State or any officers thereof shall be absolutely null and void within the period above named; and in lieu of the land so reserved to the United States and excepted from the operation of any of said grants, there be and is hereby granted to the proposed State an equal quantity of land to be selected from land of the character named and in the manner prescribed in Section 24 of this act.’

“The President issued his proclamation February 14, 1912, and the five-year limitation expired February 14, 1917. The tract book notations would indicate that the reservation had been made five days too late. It has been found, however, that the reservation actually was made and ordered on February 9, five days within the dead line date, though the letter of advice to the Phoenix Land Office bore date of the nineteenth.

“The letter of advice bears the signature of C. M. Bruce, at one time Secretary of the Territory of Arizona, but then assistant commissioner of the General Land Office at Washington. It refers to water power designation No. 7, Arizona No. 4, and informs the register and receiver in Phoenix that by departmental order, February 9, certain lands within this district had been designated pursuant to the provisions of Section 28 of the Enabling Act, ‘as actually or prospectively valuable for the development of water powers or power for hydroelectric use or transmission, and notice was thereby given that under the terms of said act the described lands were reserved to the United States and exempted from the operations of any and all grants made or confirmed thereby to the State of Arizona.’

"This action of the Interior Department, by a margin of five days, would appear to dispose of the campaign argument that Arizona has a heritage or ownership right to the Colorado River's flow and, especially, of the claim of State ownership of dam sites or control of hydro-electric generation on the stream.

"Several private or corporate claims also may be involved, notably the Stetson-Cameron locations for placer mining of large areas along the river bed of the Colorado River between Eldorado Canyon and Grand Canyon. In all, it is understood that about 330 placer or lode mining locations were recorded by these interests along the river. Possibly concerned also is the Southern California Edison Company, which, on February 3, 1922, effective December 14, 1921, received from Secretary Fall of the Interior Department certain rights in twelve or more townships under the 1200-foot contour line adjoining the Colorado River."—Los Angeles Times, December 18, 1924.

## STATE RETENTION OF NATURAL RESOURCES

Several states have taken a position in which they aim chiefly to retain their resources. Maine, for instance, has prohibited the development of hydro-electric energy for transmission beyond its borders. In New Hampshire the transmission of electric power without the state is prohibited save by permission of the Public Service Commission. West Virginia similarly requires a permit and provides also that the corporation in order to secure such a permit must agree that the state at its election may require the power generated within the state to be distributed solely within the state. Many states, including Wisconsin, New York, Pennsylvania, and Nebraska, provide for the issuance of permits as a condition precedent to the development of power sites and the maintenance of dams. Quebec has dealt with the problem in the same fashion.<sup>1</sup>

The fact that the products of one state flow into the channels of interstate commerce constitutes the basis of the interest and authority of the federal government in the control of the natural resources of a state.<sup>2</sup> Thus, in the case of *Pennsylvania v. West*

<sup>1</sup>Frankfurter, Felix, and Landis, James M. *The Compact Clause of the Constitution—A study in Interstate Adjustments*, 34 *Yale Law Journal*, 685-758, 715-716, May, 1925.

The international significance of similar issues is apparent in the discussions centering around the alleged rubber monopoly.

"Geneva, Dec. 24—The action of the American House of Representatives in instructing the Interstate and Foreign Commerce Committee to study the control of the production and exportation of raw materials has aroused tremendous interest in the League of Nations. . . .

"An inquiry similar to that desired by the American Congress was instituted by the League in 1922 at the request of Italy, but accomplished little because of the rapid changes and extraordinary conditions produced by the war as well as the failure of numerous governments to give the necessary information.

"The economic committee which carried out this investigation made a number of suggestions which should be acceptable to the United States Government under the stress of the rubber shortage, though it is doubtful if they were appreciated by any of the great producers of raw materials at the moment they were made.

"While declaring that there is no question of a State's rights to dispose freely of its national resources, it adds:

"It is not the less incontestable that the raw materials produced by one country, being in many cases necessary to the economic life of other States should not, unless in exceptional cases, be the object of restrictions or differential regulations of such a nature as to injure production in such States or to impose upon them systematic inferiority.

"It is undesirable particularly that the measure of restriction taken to meet exceptional situations should be so prolonged or altered as to change their character and from being acts of precaution or defense to degenerate into measures of economic aggression.'"—*New York Times*, Dec. 25, 1925.

<sup>2</sup>No distinction is more popular to the common mind, or more clearly expressed in economic and political literature, than that between manufactures and commerce. Manufacture is transformation—the fashioning of raw materials into a change of form for use. The functions of commerce are different. The buying and selling and the transportation incidental thereto constitute commerce; and the regulation at least of such transportation. . . . If it be held that the term includes the regulation of all such manufactures as are intended to be the subject of commercial transactions in the future, it is impossible to deny

Virginia,<sup>3</sup> a West Virginia statute requiring all persons and corporations serving the public in West Virginia with natural gas to fill at fair prices all demands from West Virginia before exporting any gas across state lines, was held void. Large populations, industries and public institutions in Pennsylvania and Ohio were dependent for heat on natural gas from West Virginia and had been so dependent for many years. These states therefore brought suit to prevent the enforcement of the West Virginia statute, the Supreme Court of the United States holding the statute void as an attempt by a state to regulate interstate commerce, and an injunction prohibiting its enforcement was granted.<sup>4</sup> But this case by no means tells the entire story of the control of natural resources, for the widest scope of state authority over the coal fields has been sanctioned by the Supreme Court, even though production within the states inevitably flows into the channels of interstate commerce.<sup>5</sup> Similarly, the point of view has been expressed that whatever natural advantages a state may have it may keep, and need give no one a reason for its will.<sup>6</sup>

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that it would also include all productive industries that contemplate the same thing. The result would be that Congress would be invested, to the exclusion of the States, with the power to regulate, not only manufactures, but also agriculture, horticulture, stock raising, domestic fisheries, mining—in short, every branch of human industry.”—*Kidd v. Pearson*, 128 U. S., 1, 20, (1888). The words are those of Justice Harlan.

Mr. Shields of Pennsylvania thinks that in the Pipe Line Cases, 234 U. S., 548, “where the Supreme Court of the United States probably reached the extreme of logic in declaring a new class of common carriers, the facts and circumstances which controlled the Court are in no wise pertinent to the transmission line of a hydro-electric plant passing from one state to another.” He believes that the statements of the Supreme Court in these decisions do not justify any assumption of federal jurisdiction over water power developments as such.—Shields, John Franklin, *The Federal Power Act*, University of Pennsylvania Law Review and American Law Register, Vol. 73, No. 2, pp. 142-157, 155, January, 1925.

The question of when electric power should be considered as transmitted in transit across the territory of a contracting state, was answered as follows in Article 2 of Convention 3 of the Second General Conference on Communications and Transit of the League of Nations, November 15 to December 9, 1923:

“Electric power shall be considered as transmitted in transit across the territory of a contracting state when it crosses the said territory by means of conductors erected for this purpose alone without being wholly or in part produced, utilized or transformed within such territory.”—*Official Instrument Approved by the Conference*, p. 38.

<sup>3</sup>262 U. S., 553 (1923).

<sup>4</sup>Wells, Philip P. *Power and Interstate Commerce*, The Annals of the American Academy of Political and Social Science, (Giant Power Number, Large Scale Electrical Development as a Social Factor), Vol. CXVIII, p. 163, 164, March, 1925.

Mr. Wells shows that the earlier case of *West v. Kansas Natural Gas Company*, 221 U. S. 229, had held void an attempt by Oklahoma to prohibit the export to other states in ordinary commerce of natural gas produced in Oklahoma. “But the Pennsylvania-West Virginia case,” he says, “went further and extended the same principle to prohibit attempted restrictions by West Virginia upon export by public service corporations peculiarly subject to state regulation.”—*Ibid*.

<sup>5</sup>“114 Cf. *United Mine Workers of America v. Coronado Coal Co.* (1922) 259 U. S. 344, 42 Sup. Ct. 587; *United Leather Workers International v. Herkert & Neisel Co.* (1924) 265 U. S. 457, 44 Sup. Ct. 623; *Heisler v. Thomas Colliery Co.* (1922) 260 U. S. 245, 43 Sup. Ct. 83; and *Oliver Iron Mining Co. v. Lord* (1923) 262 U. S. 172, 43 Sup. Ct. 526.”—Frankfurter, Felix and Landis, James M. *The Compact Clause of the Constitution—A Study in Interstate Adjustments*, 34 Yale Law Journal 685, 713, May, 1925.

<sup>6</sup>*Hudson Water Co. v. McCarter*, 209 U. S., 349, 357 (1908). The words are those of Justice Holmes.

APPENDIX II—EXHIBIT F

POWER DEVELOPMENT SHOULD BE SECONDARY  
TO OTHER USES

O. C. Merrill

"It is my judgment, personally, and I believe it will be the judgment of the Commission, although they have not taken formal action at this time, that power development throughout the Basin of the Colorado should be secondary to irrigation and flood control. There is, as I recall, only one acre in thirty that is irrigable in the basin. There is more water power than the basin can use in generations, even if it carries the surplus into adjacent markets: it seems to me, then, that the consideration of power in all sections of the River should be secondary to irrigation. That does not mean on the other hand that in the consideration of irrigation you should forget the power altogether because the location of your reservoir sites, their capacities and points at which you carry your primary storage may have a very serious effect on power development on that River, because the main power possibilities are in the Canyon section from the Arizona-Utah line down to the vicinity of Boulder Canyon. Four million horsepower can be developed in that section with the normal flow of the river, and sufficient, even with full use of the water for irrigation in the upper section, to make power development feasible in the Canyon section from water which must be released for use on the lower river."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., Thursday, 10 A. M., Jan. 26, 1922, pp. 39-40.



## APPENDIX II—EXHIBIT G

### THE URGENCY OF COLORADO RIVER DEVELOPMENT

1. The Flood Danger.
2. There is No Serious Danger of Floods.
3. The Demand for Power.
4. There is No Shortage of Power.
5. Reclamation.
6. There is No Need for Reclamation.
7. Need for Domestic Water Supply.
  - a. Los Angeles.
  - b. Denver.

A number of different opinions concerning the urgency of Colorado River development have been expressed from time to time. Questions of this kind always lead one to ask, "How urgent?" or "How important?", is a certain course of action. It would seem that the transcontinental journeys of state officials, representatives of cities, public service corporations, chambers of commerce and other organizations of the Southwest for the purpose of being present at Washington at the numerous hearings on the question of Colorado River development, would be the best evidence of the urgency of action to secure the improvement of this stream. Such journeys are good evidence of the urgency of immediate action.

The following data are submitted for the use of those who may wish to make a more extended study of this subject.

#### 1. *The Flood Danger.*

"MR. NORRIS: . . . . These farmers in the Imperial Valley keep in readiness a body of men and a railroad train; they have several engines; they have a good many miles of railroad on American soil following this river clear down into Mexico, and a good many miles into Mexico. At a moment's notice, night or day, that train from the quarry that these farmers own on the American side can be started with a train load of soil and rock—it is always kept loaded, night and day—to fill up any break that may be taking place anywhere on American soil or on Mexican soil; and they have built embankments, hundreds of miles of them on American soil. At one time—I do not think they have to do that now—at one time they had to pay the Mexican government a tariff on the rock that they carried down there to protect Mexicans and Americans alike from overflow. It comes out of the pockets of American citizens. They have to keep that up all the time, to be in readiness at any time. They have expended many millions of dollars in order to protect their homes and this great valley."—66 *Congressional Record*, No. 73, 4972-4973, Senate, Friday, Feb. 27, 1925, Sixty-Eighth Congress, Second Session.

"Political, economic and emotional considerations lie at the basis of opposition to the Pact, the equivalent of which must be agreed upon, sooner or later, as an emergency matter—protecting the Yuma and Imperial Valleys, all power and irrigation questions aside. Those who oppose the Pact are assuming a great moral responsibility which may smite them any time because of disastrous consequences to the valleys mentioned from the flood ravages of the Colorado River."—Lindauer, S. A., *Letter of March 31, 1924.*

" . . . . It is the element of risk on account of flood and water shortage that makes the investor hesitate in loaning large sums of money to finance operations in the Valley, and what loans are made are on a higher rate of interest in order to off-set the risk. For the last three years most of the loans made by Los Angeles institutions have been made only for the purpose of raising crops and are seasonal in nature. Cotton financing usually requires some portion of the loan to be advanced for 12 months, as usually one crop is not entirely marketed before preparations are being made for the new crop. Lettuce and cantaloupes require a shorter time to mature and of course these loans are of a shorter duration.

"From my experience with Imperial Valley, I feel that until such time as the flood, water and drainage problems are satisfactorily solved, it will be difficult for the Imperial Valley to reach its highest stage of productiveness."—Wickham, Loyd J., Assistant Cashier, The Citizens National Bank of Los Angeles, *Letter of October 29, 1924.*

"MR. LITTLE: Do you think that the United States did wrong in withdrawing loans for Imperial Valley for that reason (on account of floods)?"

"MR. WEST: Well, I do not know that the United States withdrew loans for that reason . . . .

"MR. LEATHERWOOD: . . . . I would be glad to know just what Colonel Little is referring to. You are referring to some action of the Federal Farm Loan Board, are you not?"

"MR. LITTLE: Yes; if the gentleman is correct in his theory, that there is no danger of flood, I should think that the rate of interest ought to be lower a good deal, and the Government ought to go in and give those fellows a show; they have the best land in the world, if there is no flood danger."—*Hearings*, H. R. 2903, Part IV, p. 624, March 19, 1924.

"DOCTOR WALKER: . . . . The situation in the Imperial Valley at the present time relative to credit is that they are tremendously handicapped because of this menace, they are not on a parity with other people in the State on developments on a basis of credit."—*Hearings*, H. R. 2903, Part IV, pp. 785-786, March 21, 1924.

"It goes without saying, that when these two problems (adequate and dependable water supply, and flood menace) are solved, general credit individually and collectively would be enhanced."—Joyce, W. H., Member of the Farm Loan Board, *Letter dated Treasury Department, Washington, May 16, 1922, to Mr. B. D. Irvine*, *Hearings*, H. R. 2903, Part IV, p. 785, March 21, 1924.

"MR. LARUE: There is not an urgent demand for an increase in irrigation development, nor does a power shortage now exist in southwestern United States. However, the need for flood control on the lower Colorado is urgent."—*Hearings*, H. R. 2903, Part V, p. 969, March 26, 1924.

"Conclusions: . . . There have been spent since 1906 on levees below Yuma \$7,500,000, exclusive of cost of closing the 1905-1906 break by the Southern Pacific Railroad Company, for inadequate protection. The delta will gradually increase in elevation so that the construction and maintenance of these levees would become progressively more costly, so much so as to become infeasible, and would be unsafe even if feasible."—Weymouth, Frank E., Chief Engineer, United States Reclamation Service, *Hearings*, H. R. 2903, Part IV, p. 716, March 20, 1924.

"The Gila floods at the present time determine the height to which the levees must be built. They run to greater heights than the Colorado floods; and it is only on account of the Gila floods that the levees along the Imperial Irrigation District, down to the junction of the C-D and Ockerson levees are necessary. The Colorado River does not get over its banks in that section; the Gila River does occasionally, and those levees must be maintained for the Gila floods, regardless of what is done on the Colorado."—Kelly, William, Colonel, Chief Engineer, Federal Power Commission, *Hearings*, H. R. 2903, Part VI, p. 1240, April 15, 1924.

## 2. *There is No Serious Danger of Floods.*

"It is a matter of fact that the Colorado River as it pertains to the Imperial Valley never was a matter of fatal danger, and at no time in history has the Valley been as safe as it is today."—Stern, Charles F., Executive Vice-President of the First National Bank of Los Angeles, the Pacific-Southwest Trust & Savings Bank, and the First Securities Company, *A Study of the Problems of the Imperial Valley*, (Pamphlet issued by the Department of Research of the First National Bank of Los Angeles, the Pacific-Southwest Trust & Savings Bank, and the First Securities Company, October, 1922—Reprinted from the *Coast Banker*), p. 10.

". . . Imperial Valley . . . is enjoying a measure of safety greater than at any time in its history. But in their effort to secure the passage of the Swing-Johnson bill, its proponents have broadcasted to the entire nation, a picture of flood and devastation, until Imperial Valley is known far and wide as an unsafe place for either man or capital."—*A Statement of Facts for the Property Owners of Imperial Irrigation District and Others Interested*, Published and Distributed by Property Owners and Taxpayers of Imperial County (undated, but subsequent to June 7, 1924, and prior to September 1, 1925).

". . . we deplore the exaggerated and misleading statements that have been broadcasted . . . as to the imminent danger."—West, A. B., President and General Manager of the Southern Sierras Power Company, *Letter of March 5, 1924, to the Hon. Addison T. Smith, Chairman, and to the Members of the Committee on Irrigation and Reclamation, House of Representatives of the United States, Submitting Views for the Consideration of the Committee with Reference to the Problem of Storage on the Colorado River, in Response to Invitation of Chairman*, *Hearings*, H. R. 2903, Part IV, p. 616, March 19, 1924.

Note: See also pp. 627-633 for data indicating that the Pescadero Cut will serve all needs for a period variously estimated at from ten to twenty-five years.

"Now, the situation is entirely different (from that of 1906); those levees (which protect the Imperial Valley) are revetted from end to end with heavy

rock; there are standard gauge railroad tracks built along the levees; there is a big quarry at Hanlon's Heading, at Pilot Knob, where they keep trains loaded all the time with heavy rock that they can rush down to any point where a break occurs . . . . Under the conditions as they exist today, the engineers will have two or three weeks' notice of a flood coming down the river. For instance, at Bright Angel Station the Government has a station from which, if a flood starts on the Colorado River, word is sent by telegraph at once."—West, A. B., President and General Manager of the Southern Sierras Power Company, *Hearings*, H. R. 2903, Part IV, p. 630, March 1924.

"Today, immediately under the first line of defense—or not beyond the second or the third line—there are thousands of acres of land being put under cultivation, and hundreds of thousands of dollars being expended in the construction of canals and in the clearing of that land. And those expenditures are being made by people who are intimately acquainted with the flood menace problem.

"For instance, the chief engineer and, in fact, one of the largest investors in this project, is Mr. Chester Allison, who was for years the head of this Imperial irrigation district; that is, he was at the head of the engineering force; and he has been in touch with the river and with the problem of handling the river for years. Yet he has put his personal fortune in this big development."—West, A. B., President and General Manager of the Southern Sierras Power Company, *Hearings*, H. R. 2903, Part IV, p. 638, March 19, 1924.

" . . . . So that I think the danger of being unable to shut the river out of there has been greatly magnified. I believe that permanent inundation could always be prevented, but the expense would be very material."—Kelly, William, Colonel, U. S. A., Chief Engineer, Federal Power Commission, *Hearings*, H. R. 2903, Part VI, pp. 1234-1235, April 15, 1924.

The different units in the system now available for use in flood protection of Imperial Valley are:

1. River levee system.
2. Secondary levee, known as the Saiz Levee.
3. Volcano Lake Levee connecting with the Saiz levee and with the Southern Pacific International Railroad levee.
4. Quarry and railroad tracks.  
 Quarry at Andrade, the head of the levee system.  
 Two steam shovels.  
 Two locomotives.  
 Thirty-nine sixteen cubic yard side-dump steel cars for hauling rock.  
 Shops provided for repairs.  
 Levee line and quarry are connected with the Southern Pacific Railroad, so it is possible to rent other cars or equipment in an emergency.
5. Personnel, 20 years' experience with the Colorado river.  
 —Means, Thomas H., *Hearings*, H. R. 2903, Part IV, pp. 672-674, March 19, 1924.

### 3. *The Demand for Power.*

"The power demand in Southern California has increased in the past 14 years at a rate of about 13 per cent compounded annually. There is a present mining law in Arizona carried by steam power that justifies the belief that 75,000 to 80,000 kw. could be absorbed from the Colorado as soon as it is available, and the development of power on the Colorado at Diamond Creek would now be under way but for lack of Federal authority to use the public lands necessary. There are mining possibilities in Nevada and Southern Utah that may create a large demand. They are too speculative at present to justify expenditure for power development, but may greatly accelerate such development once it is started. The mining load in the vicinity of Salt Lake City has grown so that development of the Flaming Gorge site on the Green River, just below the Wyoming line, is now under serious consideration by the Utah Power and Light Company."—Kelly, William, Colonel, U. S. A., Chief Engineer, Federal Power Commission, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, 795, 824, August, 1924. See also, *Hearings*, H. R. 2903, Part V, p. 830, March 25, 1924.

Mr. A. B. West, President and General Manager of the Southern Sierras Power Company, places the potential market for Colorado River power within the next three or five years, at 200,000 or 300,000 horsepower.—*Hearings*, H. R. 2903, Part IV, p. 655, March 19, 1924.

"The present demands for power in southern and central California are a little more than 500,000 horsepower; in addition to which there are pressing demands for new developments in the bordering States. The sum of these demands is, however, not sufficient to immediately absorb two large developments and duplicate investment of many millions of dollars in parallel dams."—Miller, John B., President of the Southern California Edison Company, *Memorandum of Statement before Representatives of the States of Arizona and Nevada and of the Imperial Valley relative to Development of the Colorado River*, *Hearings*, H. R. 2903, Part III, p. 532, March 12, 1924.

"My judgment is that 15 or 20 years will see the end of waterpower development in the southern part of California unless we have either the Colorado River or resort to steam plant generation."—Ballard, R. H., Vice-President and General Manager of the Southern California Edison Company, Los Angeles, California, *Hearings*, H. R. 2903, Part III, p. 504, March 12, 1924.

"Careful studies of the growth of the power load in this region indicate if work should be authorized immediately that by the time the dam can be completed and the power plant ready to deliver energy the growth of the southern California power market will require the installation of three of the twelve 100,000 horsepower generating units, after which the installation of an additional unit every nine months will be required to keep pace with the growing load."—Weymouth, Frank E., Chief Engineer, United States Reclamation Service, *Synopsis of Results of Investigation*, *Hearings*, H. R. 2903, Part IV, p. 715, March 20, 1924.

Mr. William J. Carr, Attorney of the Boulder Dam Association, gave a number of instances of gross underestimation of power demands.—*Hearings*, H. R. 2903, Part II, p. 408, March 3, 1924.

“ . . . We need the hilltops fertilized as well as we need the bottoms fertilized, and we can only do it by the newer processes, and the electric furnace is the way to tap nature's warehouse of nitrogen.”—Silver, Gray, Washington representative, American Farm Bureau, *Hearings*, H. R. 2903, Part IV, p. 800, March 21, 1924.

“ . . . And with that tremendous power that can be used in the manufacture of fertilizer we will bring to that region a prosperity that is hardly dreamed of at the present time.”—Walker, Dr. W. H., Director, American Farm Bureau Federation, *Hearings*, H. R. 2903, Part IV, p. 789, March 21, 1924.

#### 4. *There is No Shortage of Power.*

“There is not an urgent demand for an increase in irrigation development, nor does a power shortage now exist in southwestern United States.”—LaRue, E. C., Hydraulic Engineer, United States Geological Survey, Pasadena, California, *Hearings*, H. R. 2903, Part V, p. 969, March 26, 1924.

“At the present time there is no urgent need in Arizona for the development of the Colorado River. In California the need is urgent, both for power and for late summer water supply. The power projects of the Salt and Verde rivers should be further developed before the construction of an Arizona project on the Colorado, and, because of the high cost of long distance transmission, Colorado River power can not be sold in central and southern Arizona at as low prices as power from the Salt and Verde. So long as present prices of fuel oil prevail, Colorado River power cannot compete with steam power.”—Smith, G. E. P., Professor of Irrigation Engineering, University of Arizona, Phoenix, Arizona, *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, p. 145, Feb. 10, 1925, University of Arizona, College of Agriculture, Agricultural Experiment Station.

“ . . . The market does not exist for the amount (400,000 horsepower) at the present time, and it is my opinion that it will be eight years before the market does exist for a sufficient amount of power to pay the entire charges on the dam and power development.”—Clark, Walter G. Consulting Engineer, New York City, *Hearings*, H. R. 2903, Part IV, p. 775, March 20, 1924.

“A Colorado River development probably can not be completed before 1930, but should be completed by 1932. In view of the above the estimate of power-company engineers that a Colorado River development planned now should not exceed 300,000 kilowatts installed capacity appears sound. A larger development will ultimately be absorbed, but the risk of excessive carrying charges is not justifiable if the smaller development is feasible. It has become the custom to talk in such large figures concerning the Colorado that it may be pertinent to point out that the only hydroelectric developments in this country as large as 300,000 kilowatts are at Niagara Falls and Muscle Shoals, and that the total installed capacity in southern California at present is about 500,000 kilowatts.”—

Kelly, William, Colonel, U. S. A., Chief Engineer, Federal Power Commission, *Report on Colorado River*, Hearings, H. R. 2903, Part V, p. 823, 831, March 25, 1924.

"It is true that we can use some additional power from the Colorado River but no large amount can be utilized at the present time, nor is there a prospect of it being utilized in any large amounts for the next few years."—Hunt, G. W. P., Governor of Arizona, *Address at Douglas, Arizona, July 4, 1925*, *The Messenger*, Phoenix, Arizona, July 11, 1925.

### 5. *Reclamation.*

" . . . Another great problem . . . lies in the Colorado River where as a preliminary to large engineering development the Administration has endeavored to secure a settlement of the conflict of interstate rights which have so long retarded the expansion of this locality by a treaty amongst the seven states that are concerned. Six states have ratified this treaty and it is hoped that the seventh will in due time give adherence.

"Some minor criticism has been made as to the policy of our unremitting development of these projects by those who have thought we were already over-producing in agricultural products. They feel that these projects should be stayed until agricultural production has readjusted itself. These criticisms lie in the lack of understanding that these projects take many years for development, that they furnish but a small portion of the total increased food supply required even by our increase in population, that the utilization of their supplies lies in the development of the West itself. It is my purpose to unremittingly stimulate and encourage the development of these great projects by every authority of the Federal Government."—Coolidge, Calvin, President of the United States, *Letter to the Annual Convention of the American Mining Congress at Sacramento*, September 29, 1924, Mimeograph copy, pp. 3-4.

"Below Lee Ferry and above Laguna Dam are a number of valleys aggregating some 469,000 acres of irrigable lands which can be irrigated by diversion from the river but of which only 40,000 acres are now being irrigated. Such levees as have been built along these reaches of the river have been repeatedly breached and flood control as well as irrigation storage is essential if any considerable area of these lands is ever to be reclaimed."—Weymouth, Frank E., Chief Engineer, United States Reclamation Service, *Synopsis of Results of Investigation*, Hearings, H. R. 2903, Part IV, p. 714, March 20, 1924.

### 6. *There is No Need for Reclamation.*

"There is not an urgent demand for an increase in irrigation development, nor does a power shortage now exist in southwestern United States. However, the need for flood control on the lower Colorado is urgent."—LaRue, E. C., Hydraulic Engineer, United States Geological Survey, Pasadena, California, *Hearings*, H. R. 2903, Part V, p. 969, March 26, 1924.

"At the present time there is no urgent need in Arizona for the development of the Colorado River."—Smith, G. E. P., Professor of Irrigation Engineering, University of Arizona, Phoenix, Arizona, *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, p. 145, Feb. 10, 1925, University of Arizona, College of Agriculture, Agricultural Experiment Station.

"So far as Arizona is concerned, there is no imperative pressing need for the development of the river at the present time.

"Speaking from the view-point of irrigation during the next three or four years, there will be made available in Arizona for settlement some 350,000 or 400,000 acres of irrigable land, which must be colonized and developed and a market found for the products. This includes the Casa Grande project, the Paradise-Verde project, the Eastern Auxiliary, the project in the vicinity of Wellton and Palomas, and the Beardsley Agua Fria project, and several smaller projects."—Hunt, G. W. P., Governor of Arizona, *Address at Douglas, Arizona, July 4, 1925*, The Messenger, Phoenix, Arizona, July 11, 1925.

## 7. Need for Domestic Water Supply.

### a. Los Angeles.

"The depletion of the underground water supply of Los Angeles County is extremely alarming."—Regan, J. W., Chief Engineer, Los Angeles County Flood Control District, *Tentative Report to the Board of Supervisors of the Los Angeles County Flood Control District Outlining the Work Already Done and Future Needs of Flood Control and Conservation, with Tentative Estimates, Maps, Plans, and Flood Pictures, December, 1923, Hearings, H. R. 2903, Part VIII, pp. 1862-1881, 1864, Resolutions, Briefs, and Correspondence, May 17, 1924.*

"They (the citizens of Los Angeles) realize now that with the territory already in the city of Los Angeles and the development that has taken place in a very short time, they will soon not have enough water to take care of those who will live in the present confines of the city; and they are not as interested in taking in outside communities now as they were a few years ago. The water supply has assumed an immense importance in the last two years; by this I mean the potable water supply."—Lineberger, Walter F., Representative, Ninth California District, *Hearings, H. R. 2903, Part II, p. 365, March 3, 1924.*

"BISHOP, Calif., Nov. 17 (AP)—Los Angeles aqueduct waste gates, near Lone Pine were captured yesterday by a small army of Owens Valley men, who brushed aside city employees on guard and diverted Los Angeles' chief source of water supply into the Owens river.

"Determined to keep the water of the aqueduct flowing through the spillway until Los Angeles settled its long-standing water feud with valley ranchers in a manner acceptable to them, the raiders defied aqueduct authorities and the sheriff of Inyo County to drive them out. The raid today had settled into an organized occupation backed by the efforts of several hundred men and women . . . .

"The ranchers maintain that the aqueduct has robbed their farms of water necessary for irrigation.

"LOS ANGELES, Nov. 10 (Staff Correspondence) . . . . Many and varied have been the contributing causes and interests in the long struggle between the ranchers of the valley and the city officials of Los Angeles regarding the furnishing of water to the city's aqueduct. On May 6 the fact that a misunderstanding between these factions was assuming a serious aspect was brought forcibly to all concerned with the report that the aqueduct had been dynamited south of Independence by ranchers as a 'threat' to city agents to cease their activities in buying up land in the valley 'piecemeal' . . . .

"Startled into a realization of a need for action, both private and official investigations of the situation were made by those who disinterestedly sought to settle the entire affair in a manner just to all concerned. It was seen quickly that the principal cause of friction hinged about the charge that the city was 'drying up the valley', spoiling it for agricultural purposes by acquiring land to such an extent that farmers were becoming isolated and markets being destroyed with a resultant hardship coming to the towns of the district. City officials replied to this charge that it was necessary for the city to have water, and that its only available source was Owens Valley."—*Raiders Divert Los Angeles Water in Feud Over Rights*, Christian Science Monitor, Nov. 18, 1924.

"Scores of representatives from Southern California cities under the line of the proposed Colorado River aqueduct will meet in a joint conference at 2 o'clock this afternoon in the quarters of the Pasadena University Club at the Hotel Green to finally set in motion the machinery for organizing a water district and for drafting the special legislation which will be necessary to insure an adequate supply of water for domestic use from the Colorado River."—*Cities Ready to Discuss Colorado Plan Today; Pasadena Conference Will Take Up Intake Site, Water District Area, and Financing Plans*, Los Angeles Times, Sept. 17, 1924.

"An offer to provide Los Angeles for \$3,000,000 or less with all the water it needs from the Colorado River by private arrangement and without dealing with other States or the government is under consideration by the Board of Water and Power Commissioners. The offer proceeds from Jay Turley, a noted western engineer and attorney now residing in Albuquerque. Capt. Turley . . . twice has been before the board and William B. Mathews, special counsel for the body, has spent some time investigating the offer. The city has sent a survey party to examine the Turley water-rights on the San Juan River. Mayor Cryer has been acquainted with the proposal and some of the administration officials have discussed with Turley the possibility of forming a private organization to procure his rights and then negotiate with the city for its acquisition of the rights through them."—*Huge Deal for Water; City Dickers for Colorado Flow*, Los Angeles Times, Nov. 22, 1925.

b. *Denver.*

"The city of Denver has already made filing and contemplates bringing some of the head waters of the Colorado River . . . over to Denver as a municipal supply."—Bannister, L. Ward, Counselor at Law, 801-807 Equitable Building, Denver, Colorado, Lecturer on Water Rights, Harvard Law School, Columbia Law School, *Letter of Feb. 4, 1925.*

"By Section 6 of the Moffat Tunnel Act (Transcript of Senate Bill No. 3, filed in the Office of the Secretary of State, State of Colorado, the Twelfth Day of May, A. D. 1922), the Colorado legislature provided for the construction of a tunnel to divert the waters of the Colorado River into the Mississippi River watershed. There it will be used by Denver and the surrounding area."—*Milheim v. Moffat Tunnel Improvement District*, 262 U. S., 710, 717.

"MR. KEYES: . . . I have here a paper by Mr. Robert Follansbee of the U. S. Geological Survey that I desire to have read into the proceedings.

"The continued need for additional water on the eastern slope has caused

## THE COLORADO RIVER COMPACT

users of water to propose additional diversions of greater magnitude and at very much greater cost. The following table shows these proposed diversions:

Applicant	Diversion from	Elevation of Tunnel	Length of conduit in miles		Estimated annual di- version in acre-feet
			Tunnel	Ditch	
City of Denver	Fraser River	9,200	6½	31	100,000
"	Williams Fork	10,400	3	19	36,000
"	Blue River	10,300	3½	92	98,000
"	Eagle River	10,200	2	15	24,000
"	Fryingpan Creek	11,600	2	3	7,000
Total			17	160	265,000

—Colorado River Commission, *Hearing*, Senate Chamber, Denver, Colorado, March 31, 1922, pp. 77-79.

## APPENDIX II—EXHIBIT G<sup>1</sup>

### HIERARCHY OF PRIORITIES

"MR. S. B. DAVIS: Suppose a power plant obtains water priority for power purposes, would that preclude any irrigation works on the upper stream later acquiring a superior right for irrigation, over the lower right for power?"

"MR. ROGERS: That question has not been raised to my recollection; but there may be a decided case; I do not recall. I should contend that it would not."—Colorado River Commission, *Hearing*, State Senate Chamber, Denver, March 31, 1922, p. 124.

"There seems to be at present some fear in the States of Colorado, Wyoming, and Utah that injunction suits may be filed to protect priorities in the use of water for generating power in the canyon and for irrigation in Southern California, which may result in temporary or permanent legal limitations of agricultural development in those three states.

"It appears that the maximum irrigation development that is or will probably be economically feasible in Nevada, New Mexico, and Arizona will not deplete the waters of Colorado River or its tributaries sufficiently to work to the detriment of other states or interests in the basin. There is consequently no present need for a rule governing irrigation development in those states, and the present problems in the basin therefore relate to possible conflicts between the use of water for irrigation in Colorado, Wyoming, and Utah, its use for power between the mouth of Green River and the lower end of Boulder Canyon, and its use for irrigation in California."—Hoyt, John C., Colorado River Commission, *Hearing*, Federal Court Rooms and High School Auditorium, Phoenix, March 15-17, 1922, pp. 126-127.

"WASHINGTON, Dec. 30.—Possibly the forerunner of interminable litigation between the States of the Colorado River basin and inviting an era of ill-tempered reprisals between sections and municipalities whose mutual welfare depends upon cooperation and a good understanding, a suit to enjoin the State of Colorado from using the Moffat water diversion tunnel will be filed by Charles L. Childers, counsel for the Imperial Irrigation District, according to announcement here today.

"Childers . . . bases his contemplated action on the assumption that the Moffat tunnel, in diverting water from the Colorado River sufficient to irrigate 250,000 acres, jeopardizes the water supply of Imperial Valley . . .

"The Moffat tunnel, which will be completed within a few months at a cost approximating \$6,000,000, proposes to divert water from the Colorado Watershed to the Mississippi side of the watershed, and is to carry water not only for irrigation, but for domestic use in Denver . . .

"The Imperial Valley attorney proceeds: "The Imperial Irrigation District suffered a severe shortage in 1924. This is likely to occur again. Under the laws of appropriation as existing in all of the Colorado River States, the Imperial district, being long prior in point of time, can legally protect its water rights against numerous appropriators in the upper basin.

"The city of Denver is preparing to take water out of the watershed for

municipal and irrigation use in the Mississippi drainage basin. Under the law as it exists now we can protect our rights and will be bound to do so. Preliminary arrangements have already been made for starting injunction suits in the United States courts.

"Recognizing the magnitude of such proceedings we have refrained from commencing these actions, hoping that storage could be provided and actions be made unnecessary. Such actions, however, are inevitable if storage is not provided. If California had approved the six-state compact without condition, then, as Mr. Bannister very clearly stated, the upper basin would be protected against California. In other words, under these conditions, we would have ceded away our water rights to the upper basin and received nothing in return.

"Though California desires to proceed with its normal development under appropriations dating back to 1898, it would be compelled to sit by and see its water used by junior appropriators in the upper basin including the city of Denver without being able to raise a hand in defense because it had signed the compact. California has shown its willingness to be bound by the compact, but in fairness demands that storage be provided in lieu of the rights which it is giving away."

"Delph E. Carpenter, River Commissioner of the State of Colorado, who was heard at greater length than any other witness appearing before the Senate committee, and who is recognized as a foremost authority on the compact and on all aspects of the river problem, said in his testimony:

"The compact does not take away from Imperial Valley one single right whatever it may be or what it may be imagined to be. Statements that the compact gives away any rights is based on a misconception of the compact.

"Had California adopted the six-State compact as the other States did the compact would be before you now and the whole question could now be settled"—Palmer, Kyle D. *River Suits Threaten* (Exclusive Dispatch of Staff Correspondent of the Los Angeles Times), Los Angeles Times, Dec. 31, 1925.

"WASHINGTON, Dec. 14.—Representatives of the four States of the Upper Colorado River Basin have taken the aggressive in the Colorado development controversy now before Congress.

"They called in a body today on President Coolidge to emphasize their determination that no development shall occur on the river until a seven-state compact has been ratified. . . .

"Mr. Leatherwood informed President Coolidge that extensive development in the lower basin without a seven-state compact inevitably will curtail the rights of the upper basin. For that reason, he said, the upper basin States will oppose strenuously any development.

"This opposition extends to flood protection, he said, as it is contended that a flood-control dam built primarily to retard floods might actually impair the rights of the upper States just as much as a dam built for power or irrigation."—Palmer, Kyle D. *River Pact Demanded* (Exclusive Dispatch of Staff Correspondent of the Los Angeles Times), Los Angeles Times, Dec. 15, 1925.

"MR. CALDWELL: A situation, Mr. Chairman, with respect to this other matter is conceivable to me which if you don't object, I would like to point out. We want to encourage power interests in the upper division, and I would say also in the lower division. If they knew they are secondary in right within a division, there might be conditions under which they would hesitate to go ahead.

It is to be remembered that the irrigation development which would hinder them may not take place within fifty years. They may suppose it would take place within fifty years. They may suppose it would take place in ten years and it may not actually take place in fifty. In the meantime, if it had been developed it would have created value to pay for itself, and the country would be that much better off, whereas it is now hindered entirely by the mere fear that it may be interfered with. As it stands now power development may go ahead with absolute assurance of its priority in our division over everything,—subject only to proceedings by eminent domain.

“MR. HOOVER: If you adopt that line of reasoning, that line of thought, you are going to destroy the entire priority of agriculture over power throughout the basin, because power rights are going to be fixed far earlier than agricultural rights all the way down the line.”—Colorado River Commission, *Eighteenth Meeting*, Bishop's Lodge, Santa Fe, Thursday, Nov. 16, 1922, 10:00 A. M., p. 17.

MR. CALDWELL: In Colorado have agricultural rights had this preference over power which we are now providing?

“MR. CARPENTER: By the Colorado Constitution uses of water of the streams for beneficial purposes are defined in the following order: domestic, agricultural and manufacturing, and it is also said that they shall have preference in the order mentioned. Our courts have held that provision to mean, that a domestic right is a higher use, or more necessary than agriculture. For example—when a city wishes to obtain a domestic supply it can take water even to the detriment of established agricultural rights but it must condemn these rights and pay for them. The same rule applies as between agriculture and power.”—Colorado River Commission, *Eighteenth Meeting*, Bishop's Lodge, Santa Fe, Thursday, Nov. 16, 1922, 10 A. M., p. 19.

“MR. HOOVER: . . . I can conceive a situation where, if you had a purely intradivisional priority, that prior rights might be established in one division and interfere with agricultural rights in another division.

“MR. CARPENTER: No, with the exception of a reservoir to be constructed within the upper division for the benefit of the lower division, as at Lee's Ferry or any point below the mouth of the Green. With that exception, the agreement for delivery at Lee's Ferry automatically takes care of the upper situation and the burden is upon the upper territory to make the delivery; and in making that delivery, the burden and duty is upon the upper division, to control the uses above. The duty of delivery at Lee's Ferry automatically solves the question of claims from the lower as against the upper division. Below Lee's Ferry the problem becomes intra-divisional with respect to the lower territory.

“MR. HOOVER: I want to follow Mr. Carpenter's thought a minute. We have based this compact on the division of water for agricultural beneficial use, and we have made use of a quantitative basis. If we give to power an intradivisional right, we endanger the whole quantitative basis of right. For instance, we have seven and a half million feet of established right under present conditions in the upper basin, based on agricultural use. Supposing that the upper basin committed itself to ten million feet of the flow for power purposes, the southern basin would have no protection, and vice versa.

“MR. CARPENTER: At first thought it sounds possible, but I am not yet prepared to answer definitely. My own thought, in that respect, is to avoid collision. More mature thought will probably clarify the whole situation.

"MR. HOOVER: . . . . If you erect a dam at Boulder Canyon, which is both a control dam and a storage dam for conserving the high years, it will mean that a certain season of the year, of each year probably, it will have no discharge at all. There are certain seasons of the year, especially in a period of dry years, when it would be desirable to hold the entire flow of the river for perhaps months and, if a power right had priority, it would mean that there must be a continuous discharge of the reservoir throughout the year. If agriculture has priority then the reservoir need not be controlled in such a fashion. Now, from the point of view of the upper states and all states it is undesirable that there should be any super-power rights over that reservoir, or any other right which compels discharge of the water at such season of the year as cannot be applied to beneficial use in agriculture."—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 14-15, 18-19, Thursday, 10 A. M., Nov. 16, 1922.

## APPENDIX II—EXHIBIT H

# THE GENESIS OF THE COLORADO RIVER MOVEMENT—EARLY HISTORY

*Dr. Horace Porter*

"Dellenbaugh and others have compiled the exploration of the Colorado River from the first knowledge which Europeans—the early Spaniards in Mexico—had of the existence of the River. Columbus discovered America in 1492. In less than 40 years, about 1530, the Spaniards in Mexico had heard of the Colorado River. In 1539, Francisco de Ulloa sailed from Acapulco north to the head of the Sea of Cortes, now known as the Gulf of California, to the mouth of the Colorado. One year later Hernando de Alarcon sailed to the head of the Sea of Cortes and entered the Great River. He wrote of his visit, 'And it pleased God that after this sort we came to the great bottom of the bay, where we found a very mighty river which came with so great fury of a stream that we could hardly sail against it.'

"This was the first navigation and exploration of the Colorado of the West. Alarcon sailed up the river about 100 miles above the mouth of the Gila River, or well on toward the Boulder Canyon, so well known in our day.

"From 1540 to 1711 the principal explorers of the Colorado were Melchior Diaz in 1540, Don Juan de Onate, Governor of Mexico, in 1605; Zalvidar in 1618; Francisco Kino from 1680 to 1711. These and Padre Sedelmair in 1744 and Francisco Garces, 1768 to 1776, are the only recorded explorers of the Colorado in a period of about 230 years. Garces not only explored the Colorado, but in 1774 crossed from Mexico into the Colorado desert, crossed the river and made his way to the Mission San Gabriel, California, near Los Angeles. It was June 4, 1776, that Garces made another exploring expedition, discovered the Little Colorado and passed near the rim of the Grand Canyon. It was at about this time that Garces and Captain Auza made their way to the present site of San Francisco to assist in establishing a mission, passing through the region of Ventura and Santa Barbara on their way. Out of such expeditions Garces became the founder of Yuma, Arizona, about 1780, and about that time, of other of the earlier European settlements in the Colorado region. In 1808 Andrew Henry, a member of the famous Lewis and Clark expedition of the Oregon country, explored the head waters of the Colorado River in what is now the states of Wyoming and Colorado. In 1825 to 1839, we find that famous American, Kit Carson, trapping and exploring in the upper Colorado River basin. By 1830 many American trappers and scouts were crossing from the head waters of the Missouri and the Platte into the Colorado basin. By 1840 practically all the Colorado River had been explored except the great canyons. Even to our day but few expeditions have ever succeeded in passing through the greater canyons of the Colorado. In 1842 John C. Fremont crossed into the Colorado basin from the North Platte, and for four years did much exploration. From 1847 to 1852 the Mormons crossed the Colorado River basin and settled

in the Salt Lake Valley."—League of the Southwest, *Minutes of the Santa Barbara Meeting, June 7, 1923*, Santa Barbara, California, p. 17. (Note: The date of Andrew Henry's exploration, 1808, is blurred in the manuscript of the minutes.)

## APPENDIX II—EXHIBIT I

# AMERICA'S DEAD SEA IS CURBED FOREVER

*Roger W. Birdseye*

"As early as 1853 Professor Blake (Professor W. P. Blake of the Williamson Expedition of 1853) ventured the suggestion that parts of the Colorado Desert would prove wonderfully fertile if given adequate water. He even suggested the possible utilization of water of the Colorado in much the same way as was actually done nearly fifty years later. In 1896 the California Development Company was organized for the specific purpose of reclaiming that section of the Colorado Desert now known as Imperial Valley. Work began in 1900 and the following year saw water turned into the main canals. Separate companies were formed to colonize the land, and development was rapid. By 1905 Imperial Valley had a population of 12,000.

"And then the trouble began. The problem of leading water to Imperial Valley appeared to be simplicity itself. It was, as shortly developed, altogether too simple. Lying far below the level of the sea the body of the basin, of course, was even further below the level of the Colorado. The natural gradient from the river to the basin, therefore, was considerably greater than that followed by the river to the Gulf of California.

### THE WISE OLD RIVER

"The old river knew the potentialities of the situation from experience, if man did not. For many years the Colorado during floods has spilled over its banks and poured its excess waters into the Salton Sink by way of two fairly well-defined channels, the Alamo and New Rivers. These channels left the parent stream in Mexican territory and straggled west and then north into the basin, passing through the reclaimed area.

"The California Development Company, therefore, constructed its intake gap in the west bank of the Colorado near Pilot Knob, west of Yuma; led its water southward across the international boundary and thence westward and northward to Imperial Valley, saving much excavation by utilizing the old channel of the Alamo River. This plan of diversion worked splendidly while the population of the Valley remained small.

"As development continued and the use of water increased, however, greater difficulty was experienced in keeping the main and branch canals open and free from the continual deposits of silt on their beds when the Colorado was low. Accordingly, in 1904, a new intake was opened in Mexico with a more satisfactory gradient.

"Unfortunately, the efforts to provide against water shortage when the Colorado was low made inadequate provision against the gigantic power of the river when it swelled in flood. In the Spring of 1905 the great coffee-colored stream came swirling out of its upper canyons in unusual volume, carried away the dams intended to seal off the breach in the river bank and widened the breach itself.

"The situation grew alarming as the annual summer flood period approached. Too much water was being diverted toward Imperial Valley. As the big stream rose so did the torrent in the canal, which overflowed its banks into the bottom of the Salton Sink, where the sun shimmered on a growing sheet of water.

"Meanwhile, the California Development Company had become financially embarrassed, and the engineers of the Southern Pacific Company took charge of the work of controlling the river. Efforts were made to dam up the intakes, but flood followed flood and one after another the structures were torn from their foundations.

#### RAILROAD CHASED BY FLOODS

"The trackage of the Southern Pacific crossed the bottom of the Sink more than 250 feet below sea level. There the Salton Sea was expanding relentlessly, hundreds of acres in a day. Twelve times the difficult process of moving the main line to higher ground was repeated. The country was treated to the extraordinary picture of a great railroad being chased over a bone-dry desert by a flood that might not stop advancing for twenty years!

"Finally, the whole flow of the Colorado was pouring through a break hundreds of feet wide. The terrific power of a stream often discharging 100,000 cubic feet per second and more had been turned loose on an almost level, sloping plain, with little but the force of gravity to guide it.

"The old beds of the Alamo and New Rivers were utterly inadequate to carry off the flood. Great canyons were torn in the soft silt. The shallow channel of the New River became a sinuous gorge nearly thirty miles long and from 50 to more than 100 feet deep. In the Alamo River a waterfall 30 feet high and 250 to 300 feet wide was formed and this great fall ate its way backward at the tremendous pace of one foot a minute for many days.

"From the main canyons thus formed side canyons were eaten out. Homes and outbuildings were submerged or carried away. Roads were torn out, expensive railroad equipment and roadbed abandoned. Thousands of acres of carefully prepared agricultural land were hopelessly gutted and ruined.

"Finally, Congress and the President were appealed to for aid. The international nature of the country invaded raised difficulties. The Southern Pacific, therefore, continued the desperate struggle alone.

"Engineers estimated that even with the aid of desert evaporation it would take the runaway Colorado only twenty years to fill the entire basin—which was below sea level—to a point thirty feet above sea level, when the vast lake would probably spill over the ancient barrier into the Gulf of California. Beneath it would lie the new Imperial Valley, the homes and property of its twelve thousand inhabitants, its growing towns, and its tens of thousands of acres of potential farms.

"There could be no surrender where such a disaster threatened. On November 4, 1906, the break in the river bank was closed. In December another flood carried away one of the levees protecting the canal and all the work had to be done over again—but the end was in sight.

“And what of the Salton Sea? Just as its source of supply was finally cut off it had attained an area of 475 square miles. Mullet, and probably other varieties of fish, swam above the desert floor where men had died of thirst. Vast numbers of aquatic birds—ducks, geese and pelicans—darkened its surface and nested on the obsidian islands at the southern end.

“In 1919, in spite of the tremendous evaporation of more than seventy inches a year, the Salton Sea was still ten miles wide and thirty miles long. Year by year the waters had become more and more salty until they were totally unfit for domestic use or irrigation.

“It is said that when the Salton Sea is reduced to some 200 square miles inflow from the irrigation system of Imperial Valley and other sources will balance evaporation and it will remain stationary. Until then the inhabitants of one of the world's greatest reclaimed areas will no doubt continue to measure its slow recession with watchful eyes and from time to time demand fresh surveys of the uncovered land like that just completed—the fourth in ten years.”—The New York Times Magazine, March 29, 1925, p. 11.



APPENDIX II—EXHIBIT J

PREFACE TO PROCEEDINGS OF THE CONVENTION OF THE LEAGUE OF THE SOUTHWEST AT THE TRINITY AUDITORIUM, LOS ANGELES, CALIFORNIA  
APRIL 1-3, 1920

“The League of the Southwest . . . .

“It embraces civic, commercial, cultural, municipal, county and state organizations of Arizona, California, Colorado, Oklahoma, Nevada, New Mexico, Texas, and Utah.

“It grinds no axes, backs no particular schemes, represents no special interests or factions: . . . .

“Its conventions afford any one community or state opportunity to enlist the unified influence of the entire Southwest to successfully further any legitimate local project or need.

“At its first meeting in San Diego, California, the Hon. Julius C. Gunter, then Governor of Colorado, and Governor Simon Bamberger, of Utah, led the discussion which gave great momentum to the crystallization of intelligent sentiment for the development of the Colorado River basin irrigation, reclamation, water storage, river control and water power projects. Out of this meeting grew the meetings called by Governor Bamberger and Governor Davis, of Idaho, to discuss irrigation problems, and out of which evolved the federation of the thirteen Western States for the purpose of inducing Congress to enact the \$250,000,000 irrigation project now pending . . . .

“Any civic, cultural, social, humanitarian, professional, commercial, business, industrial, county, city, town, or state organization in the eight southwest States is eligible for membership. The membership fee is \$25.00 per annum per unit. Any organization may hold as many units as it desires to support. Individuals are eligible to sustaining membership and pay a fee of \$25 per annum. Individual members do not vote.

“The League is supported solely by membership fees and contributions of its members.

“It maintains offices in Los Angeles, California, from which its activities are directed by the Secretary under the supervision of the President and the Executive Committee. It employs commissioners who travel through the various States of the Southwest in order that it may function to firmly knit the different interests of the territory into a vast structure of strong and diversified but interlocking and mutually helpful enterprises.

“The League publishes occasional volumes like this Report of the Proceedings of the 1920 Convention. It has in preparation an exhaustive report by Engineer John T. Whistler, Denver, Colorado, (Adviser to the Federal Farm Loan Board

and one of the two most notable technical explorers of the Colorado River Basin), of his most recent investigations and studies with recommendations for a proposed policy for irrigation development and flood control of the Colorado River, its tributaries and contiguous territory. The League is distributing much material concerning the many phases of the development of the Colorado River basin among newspapers and periodicals of America. It attracts the attention of editors, writers, lecturers, artists and photographers to the great movement of developing the Colorado River basin, and co-operates with them in their work of collecting material. It will shortly issue the first number of a monthly publication to be called *The Southwest*, designed to keep the entire membership currently informed concerning the activities and transactions of the various departments of the League.

"It is expected shortly to maintain a permanent Commissioner in Washington, D. C."—*Preface to Proceedings*, Los Angeles, April 1-3, 1920.

Commissions on Agriculture, Mines and Mining, Timber Livestock, Irrigation and Reclamation, Industries, Transportation, Trade, Legislation, Cotton, Oil, Labor, Immigration, Colonization, Education, Citizenship, Harbors and Waterways, Aeronautics, Tourists and Propaganda, and Municipal and Civic affairs were selected with the help of the Governors of the various states. The Secretary's office was prepared to furnish data concerning the resources or any phase of life in the Southwest, or to obtain such data promptly from the proper source.—*Ibid.*

## APPENDIX II—EXHIBIT K

### OFFICERS OF THE LEAGUE OF THE SOUTHWEST

#### 1. April, 1920.

President, Gov. Thomas E. Campbell, Governor of Arizona.

Secretary-Treasurer, Arnold Kruckman, San Diego, Calif.

##### Vice-Presidents:

Frank A. Gesell, Los Angeles, California.

Dr. R. B. von KleinSmid, President, University of Arizona.

A. L. Richmond, President Arlington Hotel Co., Santa Barbara.

Gov. William D. Stephens, California.

Gov. Oliver L. Shoup, Colorado.

Gov. Octaviano A. Larrazola, New Mexico.

Gov. Emmett D. Boyle, Nevada.

Gov. W. P. Hobby, Texas.

Gov. J. B. A. Robertson, Oklahoma.

Gov. Simon Bamberger, Utah.

##### Headquarters:

Tenth Floor, Garland Building,

740 South Broadway (Telephone Pico 1919),

Los Angeles, California.

#### 2. August, 1924.

President, Hon. Thomas E. Campbell, former Governor of Arizona.

Past President, Dr. R. B. von KleinSmid, President, University of Southern California.

Secretary-Treasurer, Arnold Kruckman.

##### Vice-Presidents:

Frank A. Gesell, Los Angeles, California.

Gov. Friend W. Richardson, California.

Gov. William E. Sweet, Colorado.

Gov. James G. Scrugham, Nevada.

Gov. Pat M. Ness, Texas.

Gov. William B. Ross, Wyoming.

Gov. Charles A. Mabey, Utah.

Gov. James F. Hinkle, New Mexico.

Gov. George W. P. Hunt, Arizona.

##### Headquarters:

Ground Floor, Wright-Callender Building,

403 South Hill Street (Telephone 821166),

Los Angeles, California.

Note: The names appearing in the first paragraph are taken from the Proceedings of the Convention of the League of the Southwest at Trinity Auditorium, Los Angeles, California, April 1-3, 1920. The names appearing in the second paragraph are taken from a letter-head handed me in Los Angeles by an officer of the League of the Southwest in the summer of 1924.



## APPENDIX II—EXHIBIT L

### THE LEGALITY OF TRANSMOUNTAIN DIVERSION

At the hearing of the Colorado River Commission at Grand Junction, Colorado, prior to the drafting of the Compact, Mr. George Bullock of Grand Junction put the following question to Mr. Delph Carpenter, Commissioner from Colorado:

"In considering the needs of Colorado, is it proposed to hold to the Colorado system allowing the appropriation by one watershed, of the waters of another? Or in other words, will the claims of our Eastern Slope upon the waters of our Western Slope be recognized?"<sup>1</sup>

Mr. Carpenter responded by saying that that question had been settled in the case of *Coffin v. Lefthand Ditch Company*.<sup>2</sup>

That case involved the question of whether or not a party within the watershed of a certain stream had a better right to the water by reason of being within the watershed, than a party outside the watershed. It was held by the Colorado court, Mr. Justice Helm writing the opinion, that the party within the watershed did not have a better right.

"The doctrine of priority of right by priority of appropriation for agriculture is evoked, as we have seen, by the imperative necessity for artificial irrigation of the soil. And it would be an ungenerous and inequitable rule that would deprive one of its benefit simply because he has, by large expenditure of time and money, carried the water from one stream over an intervening watershed and cultivated land in the valley of another. It might be utterly impossible, owing to the topography of the country, to get water upon his farm from the adjacent stream; or if possible, it might be impracticable on account of the distance from the point where the diversion must take place and by reason of the attendant expense; or the quantity of water in such stream might be entirely insufficient to supply his wants. It sometimes happens that the most fertile soil is found along the margin or in the neighborhood of the small rivulet, and sandy and barren land beside the larger stream. To apply the rule contended for (riparian ownership, as against prior appropriation) would prevent the useful and profitable cultivation of the productive soil, and sanction the waste of water upon the more sterile lands. It would have enabled a party to locate upon a stream in 1875, and destroy the value of thousands of acres, and the improvements thereon, in adjoining valleys, possessed and cultivated for the preceding decade. Under the principle contended for, a party owning land ten miles from the stream, but in the valley thereof, might deprive a prior appropriator of the water diverted therefrom whose lands are within a thousand yards, but just beyond the intervening divide."<sup>3</sup>

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<sup>1</sup>Colorado River Commission, *Grand Junction Hearing*, Grand Junction, Colorado, March 29, 1922, p. 134.

<sup>2</sup>6 Colo., 443 (1882).

<sup>3</sup>*Coffin v. Lefthand Ditch Company*, 6 Colo., 443, 449, 450, (1882).

Though the magnitude of the question presented by this situation does not approach that of similar questions of more recent years, it is important to note that ability to use is the criterion by which right is determined. The barrier of an intervening divide may be overcome without the expenditure of all of one's capital, whether it be time or money or energy. If the ability to use still persists after the particular expenditure, this ability to use will be given legal recognition.

The same question of the legality of transmountain diversion has been presented in an acute form in California. The City of Los Angeles secures the major portion of its water from the Owens River country. In November of 1924 the people of Owens Valley, about two hundred miles north of Los Angeles, opened the waste gates of the aqueduct and allowed the water to flow into the Owens River.<sup>4</sup> Five months later the California legislature took steps to prevent the recurrence of such a situation. "A bill by Assemblyman Dillinger, Placerville, designed to prevent a recurrence of such a situation as the Los Angeles-Owens Valley water controversy, was passed in the Assembly today and sent to the Senate," was the tenor of news dispatches of April 13, 1925. The measure would reserve for use within a county fifteen per cent of all the water originating in that county. The amended bill, however, provides that the amount to be reserved may be increased or decreased after a hearing by the division of water rights.

"Dillinger pointed out that such legislation was an immediate necessity because of the cases where mountain and rural districts wherein water had its origin were deprived of sufficient water to meet demands."<sup>5</sup>

A governmental unit, the county, is here made the basis of the division of the available water. The difficulties of efficient administration upon any other basis perhaps constitute the reason for selecting the county as the unit; if separate valleys were politically organized it would seem that some adjustment between the areas within these different watersheds could be made. If such units were the basis of a division of the water, factors decreasing the power of transmountain diverters to use the water, that is, the cost of building tunnels, et cetera—would be susceptible of computation. True, such costs may be computed at the present time, but the situation is complicated by the fact that the county lines are not co-terminus with valley boundaries.

The fifteen per cent provision seems to be a rough estimate of what would constitute an equitable division in a large number of cases. What is the basis of this computation is not certain. Elasticity of application is secured by providing that the amount

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<sup>4</sup>New York Times, Nov. 17, 1924, p. 1.

<sup>5</sup>Los Angeles Times, April 14, 1925.

to be reserved may be increased or decreased after a hearing by a governmental body, the State Division of Water Rights.

If ability to use the water were the only criterion to be used as a basis for adjudicating water rights, the doctrine of prior appropriation would be sufficient. But this fifteen per cent measure raises another question. It suggests the possibility of the justice of a claim which rests upon the principle that a definite proportion of the water originating within a certain area, by that very reason of origin, belongs to that area.

The same point of view was urged vigorously by representatives of the Colorado River Commission, particularly by the Colorado Commissioner, Mr. Carpenter.

"At the outset, it is the physical fact that from 60 per cent to 70 per cent of the waters that pass Yuma, Arizona, originate in the mountains of the State of Colorado. If it were true that the State of Colorado were an independent nation, the State would have the inherent right of absolute dominion over that entire water supply, except as voluntarily limited by agreement or treaty with other nations. Probably no better definition of the right of a nation to the exclusive enjoyment of the waters within its borders, notwithstanding prior appropriations in lower nations, may be found than in Judson Harmon's opinion in 'Twenty-one Opinions of the Attorney General, 274, 280-283.' In other words, under the international theory, if it were possible for Colorado to make beneficial use of the waters of that river which rise within her territory and to wholly consume the same, if need be, it could legally deprive the lower river of that water with impunity, except only as to such part thereof as it might voluntarily yield. But fortunately, nature has here decreed that no such condition may ever arise."<sup>6</sup>

When merely casually considering the nature of the problem presented by the division of the waters of a common interstate stream, or inter-governmental-unit stream such as the Colorado, it may appear to be different from the problem of the division of the water upon a basis which declares that fifteen per cent shall be retained in the county of origin. But when an artificial aqueduct is constructed for several hundred miles through various counties the same problem is approximated upon a small scale although the counties affected are within the same State. Indeed, it would not be surprising to find people who own land along the aqueduct asserting the claim to use the water from the aqueduct upon the payment of a reasonable price.<sup>7</sup> They would urge that the water was near at hand, that they were willing to pay for it, that their land was encumbered with the aqueduct, that they could use it as profitably to society at large as anyone else, and that therefore the only question to be determined would

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<sup>6</sup>Colorado River Commission, *Minutes of the Seventh Meeting*, Department of Commerce, Washington, D. C., January 30, 1922, 2:30 P. M., p. 91, 108. See also pp. 116-118.

<sup>7</sup>It has been found that farmers across whose lands electric transmission lines have been run, have insisted that they be given service. In the past the power companies have been reluctant to give them due consideration. McSparran, John A. *The Need for Electricity on the Farm*, Annals of the American Academy of Political and Social Science, March, 1925, p. 50.

be the matter of price. If it were agreed to sell certain portions of water, as it actually has been agreed to sell certain aqueduct water to the San Fernando Valley near Los Angeles,<sup>8</sup> there is not much difference between riparian proprietors along a stream and "riparian" proprietors along an aqueduct, once they have secured the right to use a certain amount of water. It may also appear, upon first thought, that the division of the waters of the Colorado River between the different States concerned, is quite different from determining the rights to water as between individuals of different watersheds wishing the use of the water from a Common Stream. But the City of Denver on the Eastern side of the Continental Divide, and surrounding territory, is even now organized for the purpose of securing water from the Colorado River.<sup>9</sup> In California steps have also been taken looking toward the Colorado River as a supply of water for Southern California cities and towns and agricultural areas.<sup>10</sup> Both of these projects are of great practical importance in securing an adjustment between the states interested in the development of the Colorado River.

"The right to use water is not confined to riparian proprietors. *Gutierrez v. Albuquerque Land and Irrigation Co.*, 188 U. S. 545, 556; *Coffin v. Left Hand Ditch Co.*, 6 Colorado 443, 449, 450; *Willey v. Decker*, 73 Pac. Rep. 210, 220. Such a limitation would substitute accident for a rule based upon economic considerations, and an effort, adequate or not, to get the greatest use from all available land. Whether there are any limits of distance is a question not arising in this case."—*Boquillas Cattle Co. v. Curtis*, 213 U. S. 339, (April 19, 1909).

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<sup>8</sup>Los Angeles Times, August 21, 1924. "Van Nuys, Aug. 20.—Decision of the Los Angeles Board of Public Service Commissioners in conference with William Mulholland, Chief Engineer, late yesterday revised irrigation water schedules affecting San Fernando Valley so that alfalfa growers in this section will be enabled to procure another cutting of this important crop that will add more than \$250,000 to the valley's 1924 revenue and at the same time divert a sum of \$18,000 to the city's treasury.

"William P. Whitsett, recently appointed member of the board, upon taking office, procured a survey of the city's water relative to the reservoir supply, and following the transaction of routine business Tuesday, presented Mr. Mulholland to the body, who stated that the city was safe in sparing 3,000 additional acre feet of water this season for use in San Fernando Valley. Mr. Whitsett moved its use for the alfalfa growers, who when schedules were last revised, made connections so that the bean men might receive adequate water to harvest their crop."

<sup>9</sup>*Milheim v. Moffat Tunnel Improvement District*, 262 U. S., 710 (June 11, 1923).

<sup>10</sup>California Legislature, Senate Bill 178, January 19, 1925. An Act providing for the incorporation, government and management of metropolitan water districts, authorizing such districts to incur bonded debt and to acquire, construct, operate and manage works and property, providing for the taxation thereof, the addition of area thereto and the exclusion of area therefrom and authorizing municipal corporations to aid and participate in the incorporation of such districts.

## APPENDIX II—EXHIBIT M

### PROPOSED DRAFTS

“Following is a draft of a general stipulation for development of Colorado River, which it is believed will insure protection to the several interests concerned and also encourage development by the most economical use of water:

“It is agreed that for the next 50 years unrestricted development of Colorado River and its tributaries may be permitted; provided that no development shall be made in the States of Colorado, Wyoming, and Utah that will deplete the flow of Colorado River at the Colorado-Utah boundary or of Green River at the Wyoming-Utah boundary or at the mouth to an amount less than 65 per cent of the present flow at those places; and provided that no development in the lower basin shall be made that will give a prior right which will deprive Colorado, Wyoming, and Utah of more than 65 per cent of such flow.

“It is further agreed that at the end of 50 years the further use of the waters of Colorado River and its tributaries shall be again considered, and to the end that adequate data may then be available as a basis for a new agreement, it is urged that governmental agencies collect records of stream flow, make topographic, geologic, and soil surveys and surveys for the classification of lands, and study the possibilities of development in power, irrigation, and industry.’” —Grover, Nathan C., and Hoyt, J. C., *Equitable Division of Colorado River between the Several States*. Statement based on data collected by the Geological Survey in regard to the flow and other conditions in the drainage basin and forwarded by Mr. George Otis Smith, Director of the United States Geological Survey, to Hon. Herbert Hoover of the Colorado River Commission, by letter of Feb. 28, 1922.

“There shall be released at the Utah-Arizona State line such amounts of water as will aggregate 10 million acre-feet per annum, *Provided*, That the obligation hereunder with respect to any calendar month shall be limited to the release at said line during such month of such amounts of water as combined with the aggregate release of the preceding 23 months will equal 20 million acre-feet.

“No State below the Utah-Arizona line shall grant any rights to the waters of the Colorado River which will create any claim whatsoever upon waters in excess of said aggregate of 10 million acre-feet per annum; and no State above said line, any rights which will interfere in any way whatsoever with the release at said line of said 10 million acre-feet per annum.”—Merrill, O. C., Executive Secretary, Federal Power Commission, *Suggestion attached to Memorandum for Mr. C. C. Stetson, Executive Secretary, Colorado River Commission, from Mr. N. C. Grover, Chief Hydraulic Engineer, Department of the Interior, United States Geological Survey, March 4, 1922.*

“WHEREAS, by authority of the Congress of the United States and of the legislatures of each of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, a commission composed of a representative of the United States of America and of each of said states has been duly appointed

to negotiate and enter into a Compact respecting the future utilization and disposition of the waters of the Colorado River and its tributaries to the end that the rights of the United States and of each of said States *inter sese* with respect to said waters may be definitely fixed and determined and the proper and full development of the region included within the Colorado River Basin be advanced thereby."—Norviel, W. S., Commissioner for Arizona, Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 A. M., p. 4, Nov. 11, 1922.

"Article I. *Eleventh*. Whenever any dam and other incidental works shall be constructed on the Colorado River in whole or in part within any state for the generation of hydro-electric power, by virtue of ownership being vested in the United States, shall be exempt from taxation, said state shall be entitled to an allocation or allotment of free power generated or made possible by such works, of commercial value equal to and in lieu of the revenue such state would receive if such dam and incidental works were taxable by the state."—*Ibid.*, p. 7.

"Article II. *First*. The Congress of the United States shall provide a continuing commission to be called the Colorado River Commission, to consist of three persons, residents of the states within the Basin, to be appointed by the President. Said Commission shall be empowered and directed to make a study of all subjects that relate to the conservation and utilization of the waters of the Colorado River for beneficial uses; to investigate the use and disposition of such waters that shall be made in each of said states; to make reports from time to time as to the results of such study and of such investigations, and to make recommendations to the United States and to the several states based thereon."—*Ibid.*, p. 8.

"That the international rights and agreements between the United States and the Republic of Mexico as set forth in the treaty of Guadalupe Hidalgo, proclaimed July 4, 1848, and as recited and added to in the Gadsden treaty, proclaimed June 30, 1854, and in the Boundary Convention, Rio Grande and Rio Colorado, proclaimed September 14, 1886, and by any and all other treaties, agreements and conventions between the United States and the Republic of Mexico with respect to the Colorado River, are binding upon this Commission and the status of the river in that respect shall be regarded as having been fixed and settled."—Norviel, W. S., Commissioner for Arizona, (*First Resolution sent to Washington*, Letter of Miss Islay Caroline Rogers, Phoenix, Arizona, March 19, 1924).

"Therefore, being fully advised, the Commission makes, agrees to and promulgates the following principles and policies with respect to the use of the waters of the Colorado River and tributaries.

"1. That the Common Law doctrine of riparian rights does not obtain and shall not be recognized in the Colorado River Basin.

"2. That no state, nor any of the citizens thereof, shall obtain, nor shall any development on Colorado River in any of said states thereby create, a priority of right as to time or quantity of water by virtue of the earlier development and use of the waters of Colorado River as against any other state, or the citizens thereof; that all priorities as between said states, with respect to the

use of the waters of Colorado River, are hereby specifically waived. Provided, however, it is understood and agreed that the acreage of lands to be cultivated and irrigated in the Colorado River basin from the waters of the Colorado River or its tributaries diverted above the Boulder Canyon dam site and reservoir shall be limited, for the period of twenty years, to new acreages in the several states, in addition to the acreages irrigated and cultivated during or prior to the year 1921, as follows: Wyoming, 510,000 acres; Colorado, 777,000 acres; Utah, 444,000 acres; New Mexico, 365,000 acres; Arizona 140,000 acres, and Nevada, 15,000 acres. At the end of the period specified a new adjustment of the acreage may be made if conditions justify."—Norviel, W. S., Commissioner for Arizona, (*First Resolution sent to Washington*, Letter of Miss Islay Caroline Rogers, Phoenix, Arizona, March 19, 1924).

"4. That reciprocal arrangements or agreements shall be made and entered into between any of the said states, or any of the citizens thereof, where the diversion of the waters from Colorado River or any of its tributaries may be more advantageously made in one state for use in another state, and no request for such a permit shall be denied without just cause. Failing to reach an agreement, or the denial of the application in such case, the matter shall be submitted to this Commission on an agreed statement of facts for adjustment, as to an arbitrator, and the decision of this Commission shall be final in such matters and respected by the officers in said states."—*Ibid.*

"7. No water shall be diverted from Colorado River or any of its tributaries for use outside the Colorado River Basin, except by unanimous consent of the Commission.

"8. As soon as practicable each member of this Commission shall collect information showing all of the uses of the water from Colorado River and its tributaries, the cultivated acreage of land irrigated in his state, with maps showing same and furnish the same to the Secretary of this Commission to be by him compiled and platted, or otherwise prepared for the convenient use and information of the members of this Commission, and shall keep the Secretary of this Commission fully informed of all new applications to appropriate said waters to beneficial uses in his state, furnishing detailed information."—*Ibid.*

"The Commission makes the following recommendations:

"4. That in the event the Government of the United States, or any State or municipal corporation should construct, own and control such dam or dams, referred to in recommendations 1 and 2 above, and should such development work or improvement be not subject to taxation, then we recommend that the state, in which such development work is located, be allocated, without cost to such state, a block of electric power at the switchboard commensurate in amount and in lieu of the tax that would be assessed against such development work if done and owned by private capital.

"5. We recommend that when the Colorado River is controlled then the Government of the United States immediately proceed to improve the navigability of the river by dredging, or by other suitable method or methods, a channel in the thread of the stream from some justifiable point below Boulder Canyon to the Gulf of California to make the said river navigable."—*Ibid.*

Article VI. Subject to the provisions of Article II hereof, and as between and among the Basin States, rights to the use and control of water of or from

the Colorado River System, shall take priority of right from the date of appropriation provided that:

"1. The total and aggregate of all priorities of rights running to the Lower Basin from, or at the point described in Article III hereof, shall never be in excess of 6,000,000 acre-feet per annum. . . .

"3. Reserve storage shall be provided in an amount of not less than 6,000,000 acre-feet at a location on the Colorado River lying above the point described in Article III, to protect the Upper Basin against periodical dry years and annual waste to the Gulf of California through and past the Lower Basin."—Caldwell, R. E., Commissioner for the State of Utah, Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, Saturday, 10 A. M., p. 27, Nov. 11, 1922.

"Article II. The waters of the Colorado River and of all the streams contributing thereto within the United States of America, shall be equitably divided and apportioned among the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming and between those portions of the territory of each of said States included within the Upper and Lower Divisions of said river, as defined by Article 1, hereof, in the following manner:

"1. The flow of the Colorado River shall be divided between the territory included within the two divisions of said river upon the basis of an equal division of the mean or average annual established natural flow of said river as heretofore ascertained and recorded at Yuma, Arizona, and for such purpose it is hereby found, determined and agreed that the mean or average annual flow of the Colorado River at Yuma, Arizona, from the year 1902 to the year 1921, both inclusive, has been seventeen million four hundred thousand (17,400,000) acre-feet and that of said mean or average annual flow eighty-six per cent (86%) or fourteen million nine hundred and sixty-four thousand (14,964,000) acre-feet thereof has flowed in said river at Lee's Ferry and that fourteen per cent (14%) or two million four hundred and thirty-six thousand (2,436,000) acre-feet thereof has entered said stream through streams contributing to the flow of said river between Lee's Ferry and Yuma, Arizona.

"2. The States of Colorado, New Mexico, Utah and Wyoming jointly and severally agree with the remainder of the High Contracting Parties that the diversions from the Colorado River and its tributaries and the uses and consumption of water within the Upper Division shall never reduce the mean or average flow of the Colorado River at Lee's Ferry over any period of ten (10) consecutive years, below a flow equivalent to thirty-six per cent (36%) of the agreed established average annual flow of the river at Yuma, Arizona, as defined in paragraph (1) of this Article, to wit, below a flow of six million two hundred and sixty-four thousand (6,264,000) acre-feet, shall hereafter pass Lee's Ferry for the use and benefit of the territory included within the Lower Division of said river; and the aforementioned States do further jointly and severally agree that they will cause to flow annually in said river past Lee's Ferry, in addition to the aforesaid minimum average annual flow, an amount of water equivalent to one-half the annual requirement for delivery to the Republic of Mexico as provided in Article III of this compact.

"Article IV. A continuing joint Commission is hereby designated which shall consist of *ex officio*, the State Water Commissioner of the State of Arizona

and the State Engineers of the States of California, Colorado, Nevada, New Mexico, Utah, and Wyoming, or of the officials of said several states upon whom may hereafter devolve the duties of ascertaining the flow of streams now performed by the named State officials, and of a person to be designated by the Director of the United States Geological Survey or by the official of the United States of America upon whom may hereafter devolve the duties of ascertaining the flow of streams now performed by said named official; and it shall be the duty of said joint commission to make provision for ascertaining, determining, and publishing the annual flows of water in the Colorado River at Lee's Ferry and, if hereafter one or more reservoirs are created at or in the vicinity of Lee's Ferry by the erection of a dam or dams across the channel of the Colorado River at any point or points between the mouth of the San Juan River and a point ten (10) miles below Lee's Ferry, to make provision for ascertaining, determining, and publishing the flow of water which would have annually passed Lee's Ferry had no such dam or dams been constructed.

"Article V. "The High Contracting Parties agree that compliance with paragraph two (2) of Article II of this Compact by the States of Colorado, New Mexico, Utah, and Wyoming shall wholly relieve and exempt the states whose territory is in part included within the Upper Division and users of water within said Division from causing any additional amount or amounts of water to flow past Lee's Ferry for the benefit of the territory included within the Lower Division, and from any and every other or additional claim or assertion of right to or servitude upon the waters of the river within the Upper Division for the benefit of the Lower Division or of any users of water therein; and that no claim of prior, preferred or superior right to the use and benefit of any part of the waters of the Colorado River or of any of the tributaries thereof, within the Upper Division, other than the amounts agreed to be caused to flow past Lee's Ferry by said paragraph two (2) of Article II, shall be made, asserted or recognized on behalf or for the benefit of the territory included within the Lower Division; and, further, that, subject only to the fulfillment of the obligations expressed by said paragraph two (2) of Article II and to the third paragraph of this Article, each of the States whose territory is in part included within the Upper Division shall have, possess, and enjoy the free and unrestricted uses and benefits of the waters of said river and of its tributaries as the same may flow within its territory of the Upper Division, according to the constitution and laws of each said State.

"And further agree that all rights, claims, and privileges with respect to the use and administration of any reservoir or reservoirs hereafter constructed within the Upper Division for flood control or other benefit of the territory included within the Lower Division, shall be and remain inferior, subordinated, and subservient to the superior and preferred rights of diversion, use, and consumption of the waters of the Colorado River by the States and for the benefit of the territory included within the Upper Division, expressed in paragraph one (1) of this Article; and that all waters which may be discharged from any such reservoir or reservoirs for carriage in said river to the Lower Division and all waters stored in any reservoir created by the erection of a dam across the channel of the river at any place between the mouth of the San Juan River and a point ten (10) miles below Lee's Ferry, shall constitute and be considered as a part of

the waters which it is agreed shall pass Lee's Ferry from the Upper Division by paragraph two (2) of Article II of this compact.

"The States of the Upper Division, to wit, the States of Arizona, Colorado, New Mexico, Utah, and Wyoming do jointly and severally agree that any and all claims which now or hereafter may exist or arise between any of them with respect to the uses and benefits of the waters of the Colorado River and of any of its several tributaries within the Upper Division or with respect to any claimed, contemplated, or desired servitude or servitudes by or for any one or more of them and upon the streams or territory of any one or more of the others thereof, are specifically reserved for separate consideration, settlement or consent by those of said States so involved, and the signing and ratification of this compact shall not be construed or interpreted as a recognition of or consent to any claim, privilege or servitude upon the streams within any State of the Upper Division except to the extent necessary to fulfill the express provisions of this compact and not otherwise.

"Article VI. The High Contracting Parties agree that, subject at all times to the rights to the diversion, use, and consumption of the waters of the Colorado River and of its tributaries for the benefit of the territory included within the Upper Division but within the limitations defined by this compact, and subject to the fulfillment of the obligations expressed in Article III, and further subject to the provisions of the second paragraph of this Article, each of the States whose territory is in part included within the Lower Division shall have, possess, and enjoy under the constitution and laws of each said State, and within its territory, the free and unrestricted uses and benefits of the waters of those tributaries which enter the Colorado River below Lee's Ferry and of all waters of said river which may pass said point from the Upper Division in conformity with paragraph two (2) of Article II and with Article III of this compact.

"The States of the Lower Division, to wit, the States of Arizona, California, Nevada, New Mexico, and Utah, do jointly and severally agree that any and all claims which now or hereafter may exist or arise between any of them with respect to the uses and benefits of the waters of the Colorado River and of the several tributaries within the Lower Division, including any allocation of the burdens incident to a fulfillment of Article III, or with respect to any claimed, contemplated or desired servitude or servitudes by or for any one or more of them upon the streams or territory of any one or more of the others thereof, are specifically reserved for separate consideration, settlement or consent by those of said States so involved, and the signing and ratification of this compact shall not be construed or interpreted as a recognition of or consent to any claim, privilege or servitude by any State of the Lower Division upon the streams which enter the Colorado River below Lee's Ferry or upon said river or that part of the waters thereof by this compact agreed to be delivered from the Upper Division, except to the extent necessary to fulfill the express provisions of the compact and not otherwise.

"Article IX. The High Contracting Parties agree that the division, apportionment, and distribution of the waters of the Colorado River provided by this compact and the methods adopted and principles applied, are based entirely upon the physical and other conditions peculiar to the stream and to the territory

drained or to be served and that none of the High Contracting Parties in any way concede the establishment of any general principle or precedent by the concluding of this compact and particularly with respect to the equitable apportionment of or the rights of the States to the waters of other rivers or with respect to the disposition *inter sese*, of the waters of streams tributary to the Colorado River and common to two or more States whose territory is included within either Division; and the concluding of this compact shall not be construed as a recognition or an acknowledgment by any of the contracting States of any principle or precedent by virtue of which any State may lay claim to or establish any servitude for its use or benefit upon the territory or the streams flowing within any other State or States.”—Carpenter, Delph E., Commissioner for Colorado, Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, pp. 15-19, Nov. 11, 1922.



## APPENDIX II—EXHIBIT N

### ORIGIN OF THE COMPACT

“ . . . The degree of progress already made is far beyond the fondest dreams which I might have entertained *at the time I originally proposed the treaty procedure to the Governors and representatives of the interested states.*”<sup>1</sup> Carpenter, Delph E., Interstate Rivers Compact Commissioner, State of Colorado, *Letter of Feb. 14, 1925.*

“GOVERNOR BOYLE (Nevada): *As prime movers in the plan for an interstate pact* we felt, likewise, that our position was one which, as a matter of honor, should at all time accommodate itself to that plan which called for the largest benefits to the entire Colorado River Basin as a whole, and so we investigated the proposals of the Reclamation Service and found them, as we believe, to be sound in the engineering particulars and peculiarly designed to meet the difficulties arising out of a situation complicated by international, interstate and other involvements.”—Colorado River Commission, Hearings, *State Senate Chamber, Denver*, April 1, 1922, p. 180, 182.

“MR. HOOVER: You are aware that *Colorado initiated this Commission* because of possible interference and long continued litigation and expense with regard to her water rights?

“MR. FIELD: Yes sir.”—Colorado River Commission, *Hearings, State Senate Chamber, Denver*, March 31, 1922, p. 57.

“SECRETARY HOOVER: . . . I have the feeling that inasmuch as *Mr. Carpenter has had a great deal to do with the foundation of this Commission*, that we should hear from him first as to the basis on which he considers our work could most expeditiously proceed.”—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., Thursday, 10 A. M., Jan. 26, 1922, p. 15.

“S. B. DAVIS: . . . I do not know that one man had any more to do with it than anybody else. Possibly, *as to the actual writing of the compact, it might be said that Mr. Carpenter and myself had as much to do with it as anybody*, inasmuch as we were the two lawyers on the commission.”—*Hearings*, H. R. 2903, Part VIII, p. 1745, May 15, 1924.

“GOVERNOR CAREY (Wyoming): As regards the Colorado River, the situation might become similar to that which has developed on the North Platte River, where, through the State not looking out for its interests, we gave away one of the most valuable assets that Wyoming had. A large reservoir known as the Pathfinder was constructed on that river. We thought at the time that the waters would be used within the State, but since that time large areas have been developed in Nebraska and but a small portion of the land tributary to the river has been irrigated in Wyoming. A fight has gone on between the

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<sup>1</sup>This and other passages have been italicized for the purpose of directing particular attention to the ideas expressed in such italicized portions.

State and the Reclamation Service for over twelve years for the use of the Platte River waters and it has only been recently that we have had anything like an understanding with the Reclamation Service and have any reason to hope that we may get at least a part of the water that we are entitled to. *We do not want the same thing to happen on the Colorado that has happened on the North Platte.*—Colorado River Commission, *Hearing, State Capitol Building, Cheyenne*, April 2, 1922, pp. 2-3.

See also statements by Emerson, Frank C., State Engineer of Wyoming, Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., Thursday, 10 A. M., Jan. 26, 1922, p. 27; *Minutes of the Seventh Meeting*, Department of Commerce, Washington, D. C., Monday, 2:30 P. M., Jan. 30, 1922, p. 148; *Hearings, State Capitol Building, Salt Lake City*, March 27, 1922, pp. 41-42.

“GOVERNOR SCRUGHAM (Nevada): . . . Everyone who has had practical experience in the administration of water rights knows of the long and toilsome processes necessary in the determination of relative individual rights. The difficulties are multiplied many fold in the determination of rights as between states. Furthermore, it often happens that water can most advantageously be diverted in one state for use in another state, or that an impounding dam must be located on a stream forming a boundary between two states, one of which might accept the theory of riparian rights and the other hold to the doctrine of appropriation.

“In view of all of these complications, it became obvious to those who had studied the problem that an agreement or pact as to relative rights between the interested states was the only possible procedure to pave the way for early development of the Colorado River”—*Address before the American Society of Mechanical Engineers*, Aug. 22, 1923, League of the Southwest, Records, p. 5.

“MR. CARPENTER: . . . The pioneer of the cooperative plan of investigation and analysis and final agreement regarding interstate water problems I believe is the State of Wyoming and Mr. Emerson, I believe, was on such a Board. That was not a formal compact Commission. It was more in the nature of an agreement between the Department of the Interior upon the one hand and the State of Wyoming on the other in the matter of policy and plan, but *it may be truly said that Wyoming is largely the pioneer in that quarter, as in many other respects in our western reclamation.*”—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., Jan. 26, 1922.

“MR. EMERSON: Suppose you have a certain priority; that there are certain water users above you on the Red Lands; suppose they got an agreement for the use of say 100 acre-feet of water per year for a little project; and you agree that you never would ask them to restrict themselves below that 100 feet; they have your assurance that you would never interfere with them up to 100 feet; wouldn't the upper fellow be mighty glad to sign such a compact as that?

“MR. RUMP: I presume so.

“MR. EMERSON: Cannot the same thing apply to the bigger problem of the Colorado River?”—Colorado River Commission, *Hearing, Grand Junction*, March, 29, 1922, p. 53.

“MR. RAKER: Who first started the idea of entering into the compact?”

“MR. MAXWELL: I have an idea that Mr. Kruckman claims credit for it.”—*Hearings*, H. R. 2903, Part VI, pp. 1338-1339, April 17, 1924.

“MR. RAKER: Do you know who drew this compact? . . . .

“MR. MAXWELL: I have an idea that Judge Sloan had as much to do with it as anybody . . . . I do not know that he represented the commission; but I understand that he claims himself that he was rather instrumental in helping to draw the compact.”—*Hearings*, H. R. 2903, Part VI, p. 1339, April 17, 1924.

“While this committee was in the first instance opposed to the creation of the Colorado River Commission for the reason that it then seemed that the formation of such Commission would serve to crystallize local state claims to the use of water and create antagonisms which would continue for years, thereby preventing unification of the west in support of the projects on the lower Colorado so necessary for favorable action by Congress, nevertheless *since the Commission has been organized and is in being, we believe that if it is a possible thing, that a compact ought to be entered into* by which the benefits may be, by compact, equitably allocated between the states.”—Chase, Lucius K., 442-444 Title Insurance Building, Los Angeles, Chairman of the Reclamation and Power Committee of the Los Angeles Chamber of Commerce, *Report of May 2, 1922*, p. 7.

“MR. CALDWELL: . . . . At the present time we are trying to work out a compact between the states, and the reason for it did not grow primarily out of the fact that the upper states had to have the compact. It grew out of the necessities of the lower river which I think everybody frankly admits. We probably could go on for many years if it were not for the crying necessities in the Imperial Valley for protection and irrigation and the necessity of power. As a matter of fact, notwithstanding the needs for power, except in the very limited way, we could still go on and develop the Colorado River without a compact, and the upper states would be in a position to do so by spending their money without a compact. The upper states have entered into this thing with spirit, with zest, with all good feeling for the Colorado River basin, and even with compassion for the citizens of the United States who are now in jeopardy in the lower region of the stream. That's my chief motive for considering what I think is a correct method of developing the Colorado River to the point of agreeing to a partition of the water.

“MR. NORVIEL: One statement in reply to Mr. Caldwell. He told us a truth, but he did not tell it all, and unless we have that impression remain with us, I desire to add that the work of this Commission was initiated by the lower states; that is only a part of the truth. It came about in this way, the necessities of the lower states demand development in the lower river, for protection and development, and we were about to begin some large development when the heavy hand of opposition was laid upon us from the upper states, and I might add that that opposition naturally still rests upon us and therefore it became necessary to discuss the question that we are now discussing, so that this is not wholly the outgrowth of a desire on the part of the lower states. If we had been left with our own sweet will to do as we might, perhaps this matter would not be here at this time or for discussion.”—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, Monday, 10 A. M., Nov. 13, 1922, pp. 48-51.

"It will be noted that the upper States are much more concerned in seeing such a compact than are the lower States. As a matter of fact, the lower States have little to gain by a compact, while the upper States have much to gain. Accordingly, it would seem that any substantial concessions to be made in the way of a compromise in order to arrive at such a compact should be made by the upper States rather than by the lower States."—Hamele, Ottamar, Chief Counsel, Reclamation Service, *Letter to Mr. Clarence C. Stetson, Executive Secretary, Colorado River Commission, October 26, 1922.*

". . . . The proposal for a compact grew out of a discussion leading up to the development of the Colorado River and the desire of the State of Colorado to protect what she considers her interests in the river . . . Colorado's anxiety was caused in part by the long delay by the United States Supreme Court in rendering a decision in the so-called Colorado-Wyoming case, and her anxiety for the compact was whetted by the decision which failed to sustain the contention she made. In this case the question at issue was as to which should have the preference in the use of the waters of the Laramie River—the prior users on the lower stretches of the river in Wyoming or the prospective subsequent users in Colorado, where the water originated and later flows into Wyoming.

"The officials of the State of Colorado and its far-seeing attorney realized that this same question would arise later on between the several States concerned with regard to the use of the waters in the Colorado River, and, due to the delay by the Supreme Court in the Laramie case, the proposal for a compact originated, which resulted in the compact which was drafted at Santa Fe, New Mexico."—Hunt, George W. P., Governor of Arizona, *Excerpt from Message to the Seventh State Legislature, Jan. 12, 1925*, Hearings before the Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress, Second Session, on S. 727, A Bill to Provide for the Protection and Development of the Lower Colorado River Basin, Part II, p. 307, Jan. 23, 1925, Washington, Government Printing Office, 1925.

". . . . The negotiation of the Colorado River Compact prematurely before Arizona's case was ready for presentation has placed this State in an unfortunate position. The Compact had its origin in the demands of the four states of the upper basin; indeed, its terms were prepared largely by the representatives of those states. The legislatures of those states ratified the Compact as was to be expected. Arizona and California have no need of the Compact. The interested people of California were dissatisfied with the terms of the Compact, but they accepted it in the belief that it would lead to a speedy realization of their hope of the great Boulder Canyon project as proposed in the Johnson-Swing bill that has been before Congress during the last 3 years. That project would solve all the problems of the river so far as California is concerned. Arizona alone has refused to ratify the Compact. Some of the reasons for this refusal will be presented further on."—Smith, G. E. P., Irrigation Engineer, University of Arizona, *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, Feb. 10, 1925, p. 144, University of Arizona, College of Agriculture, Agricultural Experiment Station.

## APPENDIX II—EXHIBIT O

# PROCEDURAL TECHNIQUE OF THE COLORADO RIVER COMMISSION

"MR. NORVIEL: Mr. Secretary, inasmuch as I did not receive a copy of either of these proposed compacts or drafts until Thursday evening, and Friday morning, I haven't had sufficient time to go into the analysis of the language. I have a few questions I would like to ask to clarify some of the points raised in these compacts. I don't feel like entering into any discussion of the proposed compacts until these matters may be clarified by answer, and I would like to have the answers either in writing or transcribed so that I may study them. Then we will take up the general discussion, if it is the will of the Commission, on these proposed drafts. Until then I do not feel like entering into a general discussion of the main question."—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, Sunday, 8 P. M., Nov. 12, 1922, p. 2.

"MR. HOOVER: After discussion yesterday between the different groups, we arrived last evening at a series of rough principles upon which we felt we had secured agreement and which should comprise the basis of a compact. I would suggest that I should read the memorandum in the final form in which we left it paragraph by paragraph and see if we are now broadly, in agreement. We all understand that this is subject to drafting, that the statements here are in many cases rather crude, but so long as they convey our ideas, that is a sufficient statement. It does embrace the primary ideas upon which we are in agreement."—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, Thursday, 10 A. M., Nov. 16, 1922, p. 2.

Note: The memorandum to which reference is made evidently came into being at the caucus which continued on the afternoon and evening of November 15, the Commission resuming executive sessions Thursday, November 16, at 10 A. M.—Colorado River Commission, *Minutes of the Twenty-Seventh Meeting*, Bishop's Lodge, Santa Fe, Wednesday, 11 A. M., Nov. 15, 1922, p. 25.

### TABLE SHOWING COMMISSIONERS MOVING AND SECONDING THE ADOPTION OF DIFFERENT ARTICLES OF THE COMPACT

Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, Thursday, 10 A. M., November 16, 1922.

<i>Subject matter of the Article</i>	<i>Moved By</i>	<i>Seconded By</i>	<i>Page</i>
Colorado River Basin to include all territory in United States to which water of Colorado River can be beneficially applied.	Carpenter	Scrugham	3
Colorado River Basin to be divided into Upper and Lower Basin.	Caldwell	Carpenter	5

<i>Subject matter of the Article</i>	<i>Moved By</i>	<i>Seconded By</i>	<i>Page</i>
Termination of Compact	McClure	Scrugham	9
Preferred uses of water	Scrugham	Caldwell	22
7,500,000 acre-feet annually to be apportioned to each Basin	Scrugham	————	24
Rights to vest upon termination of Compact.	Scrugham	————	27
Division of water	Question put by Hoover without motion for its adoption	————	33
Burden of supplying water to Mexico	Question put by Hoover with- out motion for its adoption	————	33
Technical committee established	Question put by Hoover with- out motion for its adoption	————	36
Disputes between states to be settled by voluntary agreement.	Scrugham	S. B. Davis	51
Fifty-year period before reapportionment.	Scrugham	S. B. Davis	53, 55
Forty-year period before reapportionment.	McClure	Norviel	54
Drafting Committee to be appointed by Chairman Hoover	Scrugham	Emerson	58

"MR. HOOVER: I have one other point to bring up. I think we ought to appoint a Drafting Committee and that committee should furnish us with the paragraphs as they draft them, and the Commission should meet to consider the paragraphs one by one, so that we may get along so that we may have no delay. If the Drafting Committee can get us out a preliminary draft we will probably cut it up a lot and send it back. If it is agreeable to the whole Commission, that we should have a Drafting Committee, then the question arises as to how it should be appointed.

"MR. SCRUGHAM: I move that the Chairman appoint a Drafting Committee.

"MR. EMERSON: I second the motion.

"(Thereupon the motion having been put to vote the same was unanimously passed.)

"MR. HOOVER: I will appoint at once, Judge Davis, Judge Carpenter, Judge Sloan, Mr. McKisick, and Mr. Hamel, as a Drafting Committee.

"MR. CARPENTER: I move you that it be the express wish of the Commission that the Chairman be an ex-officio member of that committee.

"(Thereupon the motion of Mr. Carpenter having been duly seconded and put to vote, the same was unanimously passed.)

"MR. HOOVER: We might set a date for the Drafting Committee to meet. I suggest the Drafting Committee start at 3:00 o'clock and use this room. They will have stenographic help and everything furnished to them.

Thereupon the meeting adjourned to meet again at 11 o'clock A. M., Friday, November 17th.

Clarence C. Stetson,  
Executive Secretary."

Note: The Drafting Committee continued its work November 17th and 18th, the Commission resuming executive sessions Sunday, November 19th, at 10 A. M.

"Minutes approved at 27th Meeting, Nov. 24, 1922.—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, Thursday, 10 A. M., Nov. 16, 1922, p. 58.

#### STATUS OF THE ARTICLES OF THE COMPACT AT THE TWENTY-SECOND MEETING, NOV. 22, 1922.

"CHAIRMAN HOOVER: Article V now becomes Article IV; Article VI on the collation and publication of data is now Article V. The Article on International Relations goes out. The Article on Interstate Adjustment becomes Article VI. Indian Rights becomes Article VII. Article VIII isn't here. Article VIII is still to be drafted and the Article on the Preservation of Rights is yet to be adjusted. That will be Article VIII, so that the termination becomes Article IX. We have before us the question of Article VIII."—Colorado River Commission, *Minutes of the Twenty-second Meeting*, Bishop's Lodge, Santa Fe, Wednesday, 10 A. M., Nov. 22, 1922, p. 19.



## APPENDIX II—EXHIBIT P

# ADEQUACY OF COLORADO RIVER WATER SUPPLY

### 1. *The Amount of Water is not Adequate to Supply all Needs.*

"MR. BEVERIDGE: . . . . It has occurred to us that while everyone apparently is of the opinion that there is plenty of water for us all, yet there is a haunting fear that there may not be sufficient water for all, and if this is so, then the question arising in our minds, very naturally, is what are we going to do to protect the interest of future generations in the upper States."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, p. 107, March 28, 1922.

"MR. LARUE: . . . . 12. On page 167 of my report, Colorado River and its Utilization, published in 1916 by the United States Geological Survey as Water Supply Paper No. 395, will be found the following conclusions: 'Evidently the flow of Colorado River and its tributaries is not sufficient to irrigate all the irrigable lands lying within the basin. . . .'

"That is the conclusion I reached in 1916.

"Additional data collected by myself and others in recent years prove that this conclusion is correct. . . . .

"It is something that should have been broadcast six or eight years ago . . . instead of saying that there is plenty of water for all."—*Hearings*, H. R. 2903, Part V, pp. 973, 979, March 26, 1924.

Note: A statement in support of Mr. LaRue's conclusion that the flow of the Colorado River is not sufficient to irrigate all the irrigable lands lying within the Basin will be found in *Hearings*, H. R. 2903, Part V, pp. 1121-1123, April 11, 1924. Mr. LaRue filed this statement at the request of the House Committee conducting the hearings.

"COLONEL KELLY: . . . . There is sufficient land to use all the water in the river and perhaps more than enough land available for irrigation."—*Hearings*, H. R. 2903, Part VI, p. 1229, April 15, 1924.

"COLONEL KELLY: . . . . I cannot say exactly how much is going to be shy, but I am satisfied that counting the lands that can be irrigated in Mexico, there is not sufficient water to irrigate all the land."—*Hearings*, H. R. 2903, Part VI, p. 1249, April 15, 1924.

Two tables are included in the minutes of the Colorado River Commission which show the extent of irrigable areas and the amount of water requirements according to data of the Reclamation Service and of the several states respectively. The requirements set forth in the tables based upon data supplied by the states are much greater than the amount of water required

to meet all needs as calculated by representatives of the Reclamation Service.—Colorado River Commission, *Minutes of the Sixth Meeting*, Department of Commerce, Washington, D. C., pp. 70-71, 79, Monday, 10 A. M., Jan. 30, 1922.

“ . . . During the past twenty years a very prosperous community has been developed in the Imperial Valley. . . . During the low water flow of the river of three seasons within the past eighteen years, there has been a shortage of water for irrigation. A larger area of land is now being irrigated and a larger amount of water is needed, hence a much more serious condition is anticipated in the future because of the sure occurrence of other seasons of scant supply.”—Part III, *Report of the Division of Engineering and Irrigation*, a Subdivision of the Department of Public Works, State of California, to Accompany the First Biennial Report of that Department, Nov. 1, 1922, California State Printing Office, Sacramento, 1923. W. F. McClure, Chief of Division.

“MR. A. P. DAVIS: . . . . As a matter of fact, there are but few large diversions in the upper basin but what at some time normally take all the flow of the river now. The Grand Valley Project is the only one I know of in the Upper Basin that doesn't take practically all of the water that is available in the low water seasons which we have experienced. Now if an abnormal year occurred, all those projects would be short. They would be unable to consume as they want.”—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, p. 20, Sunday, 8 P. M., Nov. 12, 1922.

“MR. HAYDEN: The statement has been frequently made that the compact was drawn upon the theory that there was water enough for all. Since it was written, in each State of the upper basin and each State of the lower basin the State engineering authorities are finding new areas upon which they think they can irrigate. Since that time the Geological Survey, through Mr. LaRue and others, has strongly hinted that there may not be as much water in the river as they previously thought.”—*Hearings*, H. R. 2903, Part VI, p. 1332, April 17, 1924.

“ . . . Two years ago it was asserted by practically all authorities, that the water supply was more than adequate for all irrigable lands. It was a false assumption. It is known now that the aggregate demands for water will be much greater than the water supply of the river.”—Smith, G. E. P., *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, University of Arizona, College of Agriculture, Agricultural Experiment Station, Feb. 10, 1925.

## 2. *The Amount of Water is Adequate to Supply all Needs.*

“MR. HOOVER: . . . . The evidence before this Commission, morning, noon, and night, is that there is sufficient water for all the land that can be irrigated in the Basin, and if that is true, it is a poor situation that some declaration of equitable division cannot be arrived at.”—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, p. 144, March 29, 1922.

“If fully conserved, there would be more water in the Colorado River watershed than is needed by the practical agricultural land on both sides of the International Boundary Line. It does not require an All-American Canal to

serve the remaining agricultural lands in Southern California. A flood-control dam, built forthwith at some point on the river by the Government will solve the immediate flood problem, leaving the Federal Power Commission free to act in granting power permits to complete the development of the river after the Colorado River Compact between the States has been ratified.”—Allison, J. C., 50 Proceedings of the American Society of Civil Engineers, No. 9, p. 1461, Nov., 1924.

“In the speaker’s opinion, the conclusion drawn by Colonel Kelly and by the engineers of the United States Reclamation Service, as well as by many of the State engineers interested in the project, that there are more lands to irrigate eventually than can be served by the water available, is erroneous. Only experience will determine this issue.”—*Ibid.*, p. 1437.

“MR. FLY: Let me say this with regard to the Colorado River and the water that is in it: When I represented these gentlemen who own this land in Mexico, I took it up with somebody, I have forgotten whom, and was authorized to say we would give them \$100,000 if they would keep every drop of water out of the Colorado River; that it was a menace down there. If you will take all the water in the world, all you want in Utah, and do with it what you please, there will still be more water in that river than we can possibly use in our section of the country, or as much as we want, at any rate.”—*Hearings*, 2903, Part VI, p. 1218, April 14, 1924.



## APPENDIX II—EXHIBIT Q

### ALLOCATION TO STATES VERSUS ALLOCATION TO BASINS

“MR. CARPENTER: When you proceed to reduce the adjustment to one of a definite fixing of quantities, or limitations of use as to each state, you have to proceed to a degree of refinement that is hazardous and at this time calls for a knowledge which no man possesses.

“We do not have and cannot obtain, except by long years of study hereafter, basic data upon which to work. Between states in either of these great divisions very different principles should be applied on each different and distinct river, and may have to be applied. The facts are different. For illustration, some of the rivers rise in the mountains to wither away on the plains before they reach the lower states within a division. Others are increasing rivers as they flow out from their original source. The territory is new, the conditions will develop and if allowed to develop naturally will call for the ultimate solution between the interested states as respects any particular river.

“In preparing the draft which I have submitted, I first proceeded upon the theory of the individual allocation. My advisers and I myself found ourselves in the position of saying that, as respects a virgin territory, we would be called upon to fix an artificial limitation that might work great injustice later. The river is new, the territory is new, and, thereby, after studying stream after stream that flowed out from the mouth, it became evident that it would be unwise and imprudent to attempt to deal definitely with each detailed river—each individual tributary stream.

“Proceeding upon that hypothesis, or proceeding upon that conclusion, it became then a problem of seeing if it could not be worked out on a divisional basis, that divisional basis largely having been fixed by nature. We have a great catchment basin like the receptacle basin of a funnel; we have the funnel neck, the canyon, and below the territory that receives the water through this funnel neck with certain additional supplies arising and flowing in that territory, so, in order to attempt to work the problem out and avoid the conflict that would invariably be provoked in this council if you were to attempt to go into detail with respect to each state, it was thought by us more prudent to strike at the root of the whole problem on a divisional allocation of the waters of the river.

“The upper states cannot, should not, economically be compelled to develop, as development will proceed with a proper flood regulation. As an incident to that flood regulation there will naturally occur many developments in irrigation, growth of cities, development of power in the lower territory,—and it should so develop; it is right that it should. On the other hand, it would be a far cry to say that the upper states must be penalized if they do not keep pace, or court disaster,—if they attempt to keep pace, hence the divisional idea.”—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, pp. 37-39, Saturday, 10 A. M., Nov. 11, 1922.

“MR. CALDWELL: Do I understand that allocation would reach to the allocation between the states as well as between the basins?

"MR. EMERSON: Not necessarily. Not necessarily, no. As far as I have thought, for instance, this question of the theory of allocation between an upper and lower division is rather appealing, leaving the settlement between the states in the two divisions to be worked out later between the states affected themselves.

"MR. SCRUGHAM: I see no reason why we should not agree upon some reasonable allocation between the upper and lower division."—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, p. 30, Saturday, 10 A. M., Nov. 11, 1922.

"MR. NORVIEL: And as to the division of the basin into two divisions, it isn't, as I conceive it, what we were appointed for. It doesn't arrive at any conclusion, and, as it is stated, it leaves the two divisions to work out their own salvation on whatever plan they may choose in the future and as Colorado and all of the states have asserted that they are 'Simon Pure' appropriation states, no doubt they will follow that principle hereafter as before and the southern states, so-called in the division, are also 'Simon Pure' appropriation states, except in California, and I think insofar as the Colorado River Basin is concerned, they renounce all riparian rights and accept absolutely the law of appropriation. Therefore it leaves the two divisions of the basin to work out their own salvation which does not mean anything."—*Ibid.*, pp. 34-35.

"MR. S. B. DAVIS: . . . Finally and lastly there must be a definite allocation as among the individual states rather than among the groups. All that I see in the group idea is that we shove off to the future that much responsibility. For my own part I would much rather, if it is possible to do it, make a definite allocation of water to each one of the states and only if that becomes impossible would I say that it was wise to start in on a group basis.

"MR. EMERSON: I agree with Judge Davis on that. You get your fundamental consideration of whether or not allocation is possible, take it either, as you may, definitely for each state or between the two groups. Of course, if all seven states and the United States can agree at this time and each can be assured that his state had proper protection, it would be very desirable to get it right down to the state, individual states; but the question is, can it come that far?"—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, p. 30, Saturday, 10 A. M., Nov. 11, 1922.

"Can the water supply of the river be parcelled out among seven states and Mexico with any degree of reason or justice? I think it cannot. Possibly it can be in twenty-five years; probably it will be one hundred years before the final adjudication can be properly determined.

"Wherein is the necessity for this advance distribution of water rights? Arizona has no need of it. Colorado has no quit-claim from us now; why must she have it tomorrow?"—Smith, G. E. P., Colorado River Commission, *Phoenix Hearings*, Phoenix, p. 139, March 15-17, 1922.

"MR. NORVIEL: . . . In the last of January at Washington when your Honor appointed myself and others to find out the requirements of water I asked the various commissioners what their requirements would be between the middle of December and the 28th of January during which period the hills of

Colorado were covered deep in snow. I doubt if any further engineering measurements were taken. The amount there required was 1,825,000 acres, an increase of 810,000 acres, perhaps out of abundance of caution. I asked Mr. Caldwell what his requirements would be and he frankly told me he didn't know, but that if he must say how much, why, one million acres.

"MR. CALDWELL: In order that we may be straight, I said one million acres was the minimum below which Utah would not go."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 37-40, 39-40, Monday, 10 A. M., Nov. 13, 1922.

"The act of Congress, creating the Colorado River Commission, to consist of one representative of each state within the Basin and one representative of the Federal Government, directed the Commission to divide the water supply among the seven states. Instead of allocating a definite amount to each state, as was intended by Congress, the Commission divided the Basin at Lee's Ferry into two parts, the upper basin and the lower basin, and allocated definite amounts to each of these basins."—Smith, G. E. P., *A Discussion of Certain Colorado River Problems*, Bulletin No. 100, University of Arizona, College of Agriculture, Agricultural Experiment Station, p. 144, Feb. 10, 1925.

"If State boundaries are to be considered and conflicting interests between upper and lower groups of States are to be recognized, as indicated in the pending pact, then, too, the States within the two groups may well ask, as does Arizona, 'What will be the situation 40 or 50 years from now?' Each of the States in the upper group wants to know what proportion of the water which is to be left in the river for use of the lower group of States it will be expected to furnish—just as each of the States of the lower group may desire to know at the outset what proportion of the water and what proportion of the power output will ultimately fall to its share."—Grunsky, C. E., President, American Society Civil Engineers, *Excerpts from Proceedings of the American Society of Civil Engineers*, November, 1924. *Hearings*, Committee on Irrigation and Reclamation, United States Senate, Sixty-Eighth Congress, Second Session, S. 727, Part II, Jan. 23, 1925, p. 298, Washington, Government Printing Office, 1925.

When the Commission voted upon the question of whether or not the division should be made between the upper and lower basins rather than to the separate states, all the Commissioners except Norviel of Arizona voted affirmatively.—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, p. 23, Sunday, 8 P. M., Nov. 12, 1922.



## APPENDIX II—EXHIBIT R

### RATE OF DEVELOPMENT OF UPPER AND LOWER BASINS

"A. P. DAVIS: . . . . The largest area of lands susceptible of irrigation are in the lower basin; not only the largest areas but the warmest climates and longest seasons are there."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., p. 30, Thursday, 10 A. M., Jan. 26, 1922.

"MR. HOOVER: . . . . I can state that the physical situation is such that development will probably take place more rapidly in the lower basin than the upper. That is, the probabilities are that if water were available a million and a half acres would be brought under cultivation in the lower basin comparatively soon, whereas the development in the upper basin will be very slow. If we take what has been referred to as a litigation holiday for twenty years, and one or two million acres is brought under cultivation in the lower basin in that time, it will have acquired some kind of an indeterminate right, unless there is a specific agreement ratified by all the legislatures of the various states that it does not acquire such a specific right. Now, even if there is a provision that it shall not acquire a right, there is still acquired a moral right of some kind. That is one effect of a holiday. If that 'holiday' agreement was carried out specifically in the agreement, that there should be no title attached to the water applied in beneficial use in the lower basin, then we are confronted with the problem that the financing and development of land in the lower basin would be impracticable. Supposing we make such a pact, and the people in the lower basin agree that they acquire no title during the period of twenty years to the water they may in the interim apply in beneficial use, do you think it would be possible to organize and finance the development of that land?"

"MR. MCPHERRIN: As we have considered it, we have thought that that would not be such an objection as would make the financing impossible. We may be in error about that."—Colorado River Commission, *Los Angeles Hearing*, Chamber of Commerce, Los Angeles, pp. 74-75, March 20, 1922.

"MR. HOOVER: My point is, and perhaps I have not made it clear—assume we are all agreed that all the appropriations of the titles are confirmed—and that we now contemplate the future appropriation of water. With regard to such further appropriation of water, do you think there should be any restriction at all?"

"MR. WALLACE: No, not in the State of Utah.

"MR. HOOVER: Do you think there should be any restriction in the lower States?"

"MR. WALLACE: Yes, sir—there being a reason for that, and that is this—that the lower States are very much further advanced in their development than the upper States, and we would like to have this Commission adjudicate this matter so that Utah may be protected in a development equal with the devel-

opment of the other States.”—Colorado River Commission, *Salt Lake City Hearing*, State Capitol, Salt Lake City, p. 90, March 27, 1922.

“MR. NORVIEL: Your experience is that the projects are always developed best from the upper end of the stream?

“MR. RUMP: It has been the general practice that the easiest land has been developed first with the least cost, and as we begin to run out of that kind of land, we go back further into the hills, the same as our proposition. The lower lands were developed first with the least expense; but we are running out of that kind of land.

“MR. NORVIEL: If you had an absolutely new project with low lands and high lands and were going to develop the whole thing, would you begin at the top or lower down at the cheaper lands first?

“MR. RUMP: I would start with the lower lands first, but the fact that the lower lands were developed would not hurt the development of those higher up. They would have to be served first and I would go on and make the best economical use of this water.”—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, pp. 46-47, March 27, 1922.

“MR. EMERSON: During this twenty-five year period suggested do you think the development of the lower states would be much faster than the upper states?

“MR. BANNISTER: Yes, sir. That is the crux of it; during that time we do not want to be in the position of finding another state acquiring more interest in the river than that corresponding to her acreage ratio as compared with the total acreage of all the Basin states susceptible of irrigation.”—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 144, March 31, 1922.

“MR. CARPENTER: . . . The State of Colorado could not look with favor upon any plan which would degenerate into a mere contest of speed whereby an unfortunate, an unnatural growth would be forced in one section in order to keep pace with what might be a natural development in another section. Neither can we look with favor upon a permanent control by a super-government. Priority is worthless fiction unless administered. It is a useless expression unless enforced and in order to enforce it, it will require the intermeddling of a super-power, created, if you please, by surrender of local power.”—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, p. 37, Saturday, 10 A. M., Nov. 11, 1922.

“MR. CARPENTER: Is it a fact that our development will be gradual or slow, as compared with lower States, or more rapid?

“MR. ULLRICH: It will be more gradual.”—Colorado River Commission, *Salt Lake City Hearing*, State Capitol, Salt Lake City, p. 44, March 27, 1922.

“MR. EMERSON: There is no particular apparent need in Wyoming at this time. However, we have some great interests upon the Green River, interests that will take some time to develop. We do want to go ahead with development as fast as the same may become feasible.

"While the need on the Lower River is more apparent, we can see no reason why we should not have assurance that we may go ahead with our development as it does become feasible and that is what we wish for, and what we want in connection with the consideration of the matter of the Colorado River."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., pp. 23-25, 25, Thursday, 10 A. M., Jan. 26, 1922.

"MR. EMERSON: I would like to follow the line of thought further. Do you believe we will develop as fast on the upper river as on the lower river?"

"MR. CORTHELL: I think there is a wrong impression abroad as to what has happened in the past. I believe we have developed more rapidly on the upper part than on the other parts of the river. We have, as I understand, 250,000 acres of adjudicated water rights, including territorial rights, and an equal amount of additional land, or 200,000 acres, is being irrigated under completed systems. If that is true, based on the information I have, we have really accomplished more than any other state has accomplished."—Colorado River Commission, *Cheyenne Hearing*, State Senate Chamber, Cheyenne, p. 32, April 2, 1922.

"MR. CARPENTER: You presume they will make a beneficial use of the water as rapidly as possible when they build the dam?"

"MR. GARRISON: Perhaps so, and perhaps not. Maybe we shall make beneficial use of it faster up here.

"MR. CARPENTER: Your proposition is one series of 'maybes,' but as a matter of fact you can't know in your own mind where you are at.

"MR. GARRISON: That is precisely what I have said—we none of us know where we are at."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol, Salt Lake City, p. 104, March 28, 1922.



## APPENDIX II—EXHIBIT S

### GUARANTEED MINIMUM ANNUAL FLOW

"MR. NORVIEL: Well, under Mr. Carpenter's plan, as he suggests an average of ten years, this year might be an abundance of water and he might send thirty million acre-feet. That then would satisfy for the next five or six years and he wouldn't have to send down any but how it would be administered I can hardly understand. It would leave a river in a flashy—contemplates a flashy condition of the river; contemplates in dry seasons when everybody needs water holding back all, or they could hold back all of it and then supply at some future period within the future, within the ten-year period, the amount that they had held back they would have to make up. That, it seems to me, would be a very bad method and impossible of administration and of course would not be satisfactory to the lower states."—Colorado River Commission, *Minutes of the Eleventh Meeting*, Bishop's Lodge, Santa Fe, pp. 46-47, Saturday, 10 A. M., Nov. 11, 1922.

"MR. NORVIEL: The next question: In the proposed guarantee of 6,264,000 acre feet per annum to be delivered at Lee's Ferry, is it to be understood that this amount of water is to be delivered annually, or may it be delivered during any portion of the ten-year period, as may be determined by the upper division?

"MR. CARPENTER: It is not proposed to deliver just that amount and no more or less annually. That is to be the annual average over a ten-year period. As far as the will of the upper division is concerned, it was the thought at the beginning and it is still in the mind of the author, that the natural conditions would prevent any arbitrary position, but that in the event the diminution should be beyond that, which may be possible, that the upper division should not encroach upon the flow of the stream to such an extent as to reduce it below an average annual figure of the Lee's Ferry diminution. The author of this compact makes no pretense that those figures are absolutely accurate and is not bound to the particular figures mentioned. There had to be some set of figures taken and they should be made to conform to the facts whatever they may be ascertained to be. If you mean by your question that we might withhold the water for seven years in the upper territory and then deliver enough to make an annual average of six million odd acre-feet per annum, delivered all in three years, it is not in the range of my thought that any such condition would possibly be. I might say in that regard that you may have in mind the construction of a reservoir at Lee's Ferry as a controlling factor. It was my thought that that would be essentially a lower division reservoir, or one for the benefit of the lower division, and it was not the thought that it would be possibly placed in a position of taking the whole flow of the river for a year, and depriving the lower territory of the benefit of that flow. That would be too abhorrent. The reservoir at Lee's Ferry would naturally be a stabilizing influence for the lower territory, stabilizing the matter of delivery.

"MR. NORVIEL: Let me ask the question without the amount of water. In the proposed guarantee of the certain amount of water per annum to be delivered at Lee's Ferry, it is to be understood that this amount of water is to be delivered annually or may it be delivered during any portion of the ten-year period on the arbitrary determination of the upper division?

"MR. CARPENTER: It wasn't the thought that it might be delivered under the arbitrary determination of the upper division. It was the thought that the river would flow at that point—some water—be it much or little. Naturally, some years it will be much—some years more, some less.

"MR. SCRUGHAM: Wouldn't the possible objection be solved by including with the amount, a minimum in second-feet?

"MR. NORVIEL: It isn't in the contract.

"MR. SCRUGHAM: You haven't any objection to inserting a minimum flow?

"MR. CARPENTER: Not if you made it low enough . . .

"MR. CALDWELL: Suppose the figure that you mention is 6,000,000 acre-feet just to make it easy, is it your idea that during the ten years preceding any year—we will say, that there should be delivered down the river 60,000,000 acre-feet past Lee's Ferry?

"MR. CARPENTER: That there should be an aggregate of 60,000,000.

"MR. CALDWELL: Is that a minimum which you guarantee?

"MR. CARPENTER: Yes sir.

"MR. CALDWELL: That would mean absolutely nothing. It is fallacious making an aggregate of 60,000,000 in three or four years or . . .

"MR. CARPENTER: It is fallacious to say that the river won't run or that we could use all of it. That states the impossible unless we build the reservoir away above Lee's Ferry and arbitrarily took what came and the reservoir was so large that we could utterly deprive the lower states of any water at all for a three-year period. It didn't enter my range of thought.

"MR. NORVIEL: Let me ask another question that perhaps would clear it up to me. First your statement is that any year and the preceding nine years must have delivered past Lee's Ferry ten times this amount of water, whatever may be agreed on.

"MR. CARPENTER: Yes, in the aggregate.

"MR. NORVIEL: In the aggregate.

"MR. CARPENTER: At least that much.

"MR. NORVIEL: At least that much. Suppose it should happen that the first eight years would have contributed to the lower basin 45,000,000 acre-feet and it should then be in a dry cycle of years and it would be impossible to deliver the remaining amount of water in the next two years.

"MR. CARPENTER: In such an event we would fail to keep the compact.

"MR. NORVIEL: Then what?

"MR. CARPENTER: Probably have to make it up later.

"MR. SCRUGHAM: Can't you save a lot of this discussion by agreeing upon the principle of a minimum flow at once."—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, pp. 4-8, Sunday, 8 P. M., Nov. 12, 1922.

"MR. NORVIEL: . . . The statement was a while ago that they should not take more than 50% of the flow of the stream for use in the upper states, and now his argument is that the more use they make of the water in the upper basin by the return flow of the river will be increased, or the water will be increased and stabilize a flow in excess of that which now obtains in the river. Therefore he would have no objection to including in the average of the flow for a period, the establishment of a considerable minimum flow of the river, for his argument is that the more water is used above, the greater will be the minimum flow in the river, positively established; therefore, I see no reason why we cannot include a minimum flow to be included with the average that will give some satisfaction and stabilization to the water that comes to us, and I think perhaps that ought to be discussed now and fixed upon.

"MR. CARPENTER: If it is found and considered to be advisable by us, that an assurance of the proper minimum be set, well and good. It is not within the range of my thought to even conceive of a condition where the upper states would strip the stream and deliberately paralyze the country below, but if that minimum is established then the objection to the ten-year average is immediately dissipated."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 26-27, Monday, 10 A. M., Nov. 13, 1922.

"MR. CARPENTER: Speaking of minimum, during the recess the matter of that minimum was discussed somewhat by Mr. Meeker and myself. Whenever that minimum is considered it must be realized,—and I want to reiterate it,—that the minimum, that the necessity for a minimum results from the penalty visited upon the source. It comes from a drought that strikes at the roots of agriculture in the upper section. The result of that drought afflicting that section is what produces the reduction in the stream. Therefore, the minimum should be of such a quantity that the penalty of the drought will be equally distributed over the whole river system.

"I might suggest one fact that might enter into the discussion in view of Mr. Norviel's statement this morning. Practically all of the available lands in the State of Colorado—I am excluding forest reserve and the areas withdrawn—are now settled or being settled, so that the visitation of a drought will affect the people of the entire area in that state. Hence the idea of fixing the minimum should not be to guarantee that the lower division will have enough in low years, because that would be unfair. The idea should be, in fixing the minimum, to allocate the drought, if I may so term it, among the people of the entire basin, much the same as we allocate the waters in fat years.

"MR. HOOVER: In that vein of thought, is it not feasible to determine what water is being consumed in the upper basin and to say something on this line—that an amount of water shall pass Lee's Ferry as a minimum equal to one-half the total flow of the upper basin?

"MR. CARPENTER: I fear not. It is possible, but there are so many streams that the problem becomes very complex. You have to take into consideration, as I understand, both the inflows and the diversions. This involves a pretty complicated machinery which resolves itself into a matter within the keeping and the conscience of probably a few men in the territory.

"If we had one stream, like we do after we get to the canyon, it would be a very simple matter but after you proceed above the canyon the river spreads out

like a fan, with all the fibers of a fan, and those branches in turn spread out and they in turn spread out, and so it goes. I wish it were feasible. It is possible. I might point to suggestions from these experts—not presuming to trespass upon their ground in saying what I have—but Mr. A. P. Davis and Mr. Meeker could doubtless inform us somewhat along that line.

“MR. HOOVER: I was thinking about making concrete your safety clause on famine. There might always be some hardships from some definite figures unless they are very low. (Addressing Mr. A. P. Davis) Mr. Davis, do you think there is any device by which the consumption of water could be judged in the upper basin?”

“MR. A. P. DAVIS: Not entirely. I agree with Mr. Carpenter about that. While it is possible of being presumed, it requires such a long series of observations and study of those observations afterwards that the results would be too little to be of consequence or be of use at that time. You want it at the time that you start making these measurements and you wouldn't have it for months and perhaps a year afterwards, because of the large complications and study that would be required. You have got to distinguish the diversion, the application, the return flow and all those details in order to get at the ground of consumption in the upper basin. I don't think it is practical to make that a really vital part of this compact. It is a thing that is very useful when determined. A study ought to be made right straight along and it might be that, by long experience, we would be able to foresee these things to such an extent that it could be made somewhat useful.

“MR. HOOVER: You don't see any practical way at all of spreading the famine then?”

“MR. A. P. DAVIS: The way of spreading the famine over the upper basin would have to be some such device as suggested if it could be done. But it can be done as between the two basins by fixing the minimum at Lee's Ferry.

“MR. CARPENTER: At a low enough figure.

“MR. A. P. DAVIS: At a proper figure. Too low would put all the burden on the lower basin, too high would put it on the upper basin.

“MR. HOOVER: It comes back more or less to fixing the minimum at Lee's Ferry . . . .”—Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 33-36, Monday, 3 P. M., Nov. 13, 1922.

“MR. EMERSON: . . . . But it seems to me that if the upper states agree to deliver a certain amount of water over a term of years, and possibly further agree to deliver not less than the minimum yearly amount every year, it is up to the lower states to provide means of storage.

“MR. CARPENTER: And it is up to them to provide storage as may be necessary, to be sure we deliver our minimum.

“MR. NORVIEL: Of course it is necessary that we accept the burden of providing storage below. As I look at it, it is not going to be the easiest thing in the world,—it may not be the easiest thing in the world to provide that storage, but with the assistance of the upper states, not financially, but morally, we are

in hopes that we may obtain that storage capacity in the reservoir, if there is no water in the reservoir.

"MR. EMERSON: We are going to agree to deliver the water to fill that reservoir.

"MR. NORVIEL: Yes, then unless we can have a minimum flow we may have an empty reservoir.

"MR. EMERSON: We are willing to consider a minimum flow.

"MR. CARPENTER: We are willing to consider a minimum flow."—Colorado River Commission, *Minutes of the Fifteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 28-29, Tuesday, 10 A. M., Nov. 14, 1922.

"MR. HOOVER: As a matter of progress, I have this personal suggestion to make. It is very difficult to ask one group or the other to make a proposal on this line and start a line of argument, because immediately a proposal is made it becomes a basis of bargaining. We don't want to approach the problem on that line and perhaps, if the two groups would meet separately and communicate to me their views, each one separately, I might be of some assistance.

.....

"MR. HOOVER: If that is agreeable to you, I suggest we might adjourn in two groups and consider the problem from this aspect.

Thereupon the meeting adjourned to meet again at 11:00 A. M., November 15th.

Clarence C. Stetson,  
Executive Secretary.

"The above minutes were approved at the 27th meeting of the Commission held at Santa Fe, New Mexico, Friday afternoon, November 24, 1922."—Colorado River Commission, *Minutes of the Sixteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 30-31, Tuesday, 3 p. m., Nov. 14, 1922.

"CHAIRMAN HOOVER: . . . . The editing committee makes it a point to not change the meanings. (Thereupon, a vote having been taken upon the adoption of Article III, the same was unanimously adopted in the following form.)

"ARTICLE III . . . . (d) The States of the Upper Division agree that they will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of the July next succeeding the ratification of this compact, nor below a flow of 4,000,000 acre-feet for any one of such years."—Colorado River Commission, *Minutes of the Twenty-Second Meeting*, Bishop's Lodge, Santa Fe, pp. 17-18, Wednesday, 10 A. M., Nov. 22, 1922.

"MR. DAVIS: I dislike that minimum clause, too, not because of the effect on any rights we have, but because of the implication that the rivers can get down to that point.

"MR. HOOVER: I think we will agree it disburses all over the basin.

"MR. NORVIEL: I dislike 4,000,000 acre-feet. I think I started in with six and was borne down to 4,000,000.

"MR. DAVIS: If I thought it would do you any good I wouldn't dissent at all.

"MR. NORVIEL: (Then I might be squashed clear out.)"—Colorado River Commission, *Minutes of the Twenty-Third Meeting*, Bishop's Lodge, Santa Fe, p. 25, Wednesday, 3.45 P. M., Nov. 22, 1922.

Note: There are indications that Mr. Norviel deleted the sentence in parenthesis when correcting the stenographic report of the meeting.

## APPENDIX II—EXHIBIT T

# STORAGE AS A CONDITION PRECEDENT TO A DIVISION OF THE WATER

"MR. NORVIEL: Mr. Davis, one more question. Assuming you have read this compact, or heard it read, and understand its purports, does it contemplate necessarily the construction of a large dam in the lower river and the storage of water and stabilizing the flow of the river in order that the lands in the lower basin may be served with water?"

"MR. A. P. DAVIS: Such a reservoir would be necessary if this compact were entered into, of course.

"MR. CARPENTER: And if the minimum were reached of the delivery, it would be necessary.

"MR. A. P. DAVIS: Storage would be necessary in any event."—Colorado River Commission, *Minutes of the Twelfth Meeting*, Bishop's Lodge, Santa Fe, pp. 16-17, Sunday, 8 P. M., Nov. 12, 1922.

"MR. HOOVER: I think it is obvious that the whole possibility of division rests on the promise of storage, otherwise it is quite impossible."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, p. 28, Monday, 10 A. M., Nov. 3, 1922.

"MR. CARPENTER: They, knowing they will get a certain definite quantity of water, and also knowing that by nature they will get more, isn't it incumbent upon them to fix and construct for themselves the instrumentalities by which the use of that water may be brought about? Let me say in connection with that question, in the recent controversy between Colorado and Wyoming, Wyoming contended that it was not incumbent upon Wyoming to provide any storage facilities by which the excess of the fat years might serve for the lean years in that territory; that if we interjected a new diversion upon the river and cut off the supply, it was incumbent upon us to supply the storage. The court, very rightly found that that contention was not right; that to each of these divisions should be left the method of conserving the water within its own territory. Now in some cases reservoirs will be constructed at one point and in some cases another. One factor may develop a reservoir this year and another factor, referring to public or private capital, develop a reservoir another year. It may be found as years progress that it is wise to provide a large control reservoir in the lower part of the upper division; well and good when that time arrives. . . .

"MR. EMERSON: . . . . The Supreme Court has held that the lower division must provide the storage to take care of the surplus waters of the stream and provide for their low season needs. In that way and in that phase, the Colorado decision is not favorable to the lower states, but does put upon them the burden of reservoir construction . . . .

"MR. NORVIEL: The reservoir is to be worked out with the consent and moral assistance of the upper states, with that understanding.

"MR. EMERSON: That is what you get through this compact.

"MR. CARPENTER: I think there is not a man in the upper states, and who understands the situation in the lower country, who is not hoping to see a reservoir in the lower river.

"MR. NORVIEL: I am glad the heart strings have been touched at last.

"MR. CARPENTER: They always have been.

"MR. NORVIEL: It seemed to me there was some opposition in the beginning . . . .

"MR. CALDWELL: . . . . I might vote for half of the minimum, providing reservoir storage is provided of a figure amounting to say, four or five million feet.

"MR. HOOVER: Wouldn't you accept that if this pact depended on and only became operative when this storage was provided?

"MR. NORVIEL: I will say as far as Arizona is concerned we will have no objection to that, a storage reservoir to take care of that minimum flow."—Colorado River Commission, *Minutes of the Fifteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 24-26, 32, 40, Tuesday, 10 A. M., Nov. 14, 1922.

"MR. HOOVER: . . . . I think it appears to all of us that we are really doing nothing unless there is storage, that the river isn't in a situation today to permit of any further development of any consequence unless storage is provided; that this pact, whether it refers to the matter or not, does in fact revolve upon storage, but it might loosen it up a little if we did incorporate some basis of that sort.

"MR. NORVIEL: . . . . It is conceivable to me that storage in the upper basin may be conceived and built merely for power and there would be no reserve storage in it. The same thing could happen on the lower, or it may be built for irrigation with no reserve storage in it.

"What I am trying to point out is, probably the simplest thing would be to provide for some reserve storage for the express purpose of equalizing this flow so that the minimum requirements of the lower basin may be met certainly. I may point out that in my judgment it may be many years before that reserve storage would need actually to be provided, but we should provide for it now by agreement. I say we should,—that is just a thought.

"MR. HOOVER: You mean by providing by agreement. It is utterly impossible for the seven states to make an agreement to construct storage, that is infeasible, but what the seven states could do would be to agree that this compact wouldn't be enforceable until storage had been provided.

"MR. EMERSON: I again take exception to the statement that further large development on the river is now about to cease, or must cease until we get some storage. I can't conceive but what we have the right to continue in Wyoming to develop as fast as we find our projects feasible. We have continual development up there all the time and our position has been made stronger in this regard by reason of the Wyoming-Colorado case. It is certainly a fact that a

great amount of water is now passing out through the Colorado River unused and the Supreme Court has held—when you know the opinion in the Wyoming-Colorado case—that the lower states must conserve the surplus waters of that stream before they can get action against the upper appropriators and I know of no way that development in Wyoming could be stopped by reason of the fact that there is possibly a shortage in the low water season on the lower reaches. It is my opinion we can go ahead unless the Supreme Court in other actions should reverse its position in that case.

“MR. NORVIEL: I had in mind . . . that in the early discussions of this question there was a strong impression given out that the early development of the river should be above, including the storage, and I will add that there was an objection to the development by construction of large reservoirs below because of the fear of establishing priorities there and those two things were, I might say, the incentive for what we are doing now. I doubt whether that thought has been eradicated from the minds of the upper states and, therefore, I don't think this pact that we propose should be made operative with that strong desire still existing that the reservoirs and the development of the upper states should not be made until the storage is provided below. While I feel that they would be fair with us, perhaps they might not lend that moral assistance that they would if it were necessary for us to provide storage in the lower divisions. They might not try to assist us, perhaps, in obtaining the financial aid which we must have to construct the large works in the lower basin, and the pact should not be operative until that is done.

“MR. CARPENTER: . . . To condition the vesting of the title upon the construction of the structure might meet much opposition, supported with great force by many arguments, while to clear the title now you clear the decks and leave an open field, with no objection.

“MR. HOOVER: If the decks were cleared and if when it came a question of appealing for federal support to construct your reservoirs we found a conflict between the states, it would be very regrettable, wouldn't it, and would probably destroy the hopes of the southern states to secure consummation?

“MR. CARPENTER: I may say in that respect it has been my view, and I speak only for myself, that the prompting of necessity and of insistence of humanity would justify us in adopting, not as a part of the compact but as a separate recommendation, such a resolution or memorandum as would bring to the attention of all parties the necessity of large construction of a type adequate to give protection, and permanent protection, to the Imperial Valley from inundation and I see no objection to adopting such, my thought being that we proceed upon the fundamental idea that the instrumentality by which it is constructed, the source from which the monies are drawn, should be left open so that every available resource be marshalled from whatever quarter to accomplish that great work and, as a mere incident of that stupendous duty confronting us, development of the lower valley will follow. I would be perfectly willing to commit myself to such a policy.

“MR. NORVIEL: Perhaps that sort of commitment from each of the states would take care of the situation.”—Colorado River Commission, *Minutes of the Sixteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 2-3, 5, 8-10, Tuesday, 3 P. M., Nov. 14, 1922.



APPENDIX II—EXHIBIT U

THE 75,000,000 ACRE-FEET PROVISION

"MR. HOOVER: My mind is a little mixed. In the first place, on page 5 (Senate Document 142) are given the gaugings at Laguna Dam which do not include the Gila flow. Mr. Carpenter's calculation is based on the gaugings at Yuma, which I understand include the Gila and that is the difference between Mr. Carpenter's basis and the basis of the Laguna gaugings. Is that not true?

"MR. CARPENTER: No, partly correct. I didn't deduct the loss in the river from Lee's Ferry to Laguna.

"MR. HOOVER: I was saying the difference between your calculations and the Laguna gaugings is simply the flow of the Gila. The Laguna gaugings do include water which goes into the Imperial Valley.

"MR. CARPENTER: Yes, sir.

"MR. HOOVER: So that if we take the Laguna gaugings instead of the Yuma gaugings we will exclude the Gila flow.

"MR. A. P. DAVIS: We exclude the Gila flow, but we include the diversion for the Yuma project. The measurements at Yuma on the other hand do not include water diverted for the Yuma project, but include the Gila. When you measure at Yuma you are measuring above the Imperial diversion and below the Laguna Dam diversion.

"MR. HOOVER: The Laguna Dam gaugings include water which goes to the Yuma project?

"MR. A. P. DAVIS: They do.

"MR. HOOVER: So they include the whole flow of the Colorado River at that point?

"MR. A. P. DAVIS: At that point, yes, sir. That is what they are intended to include, the whole flow there, which is above the Gila and of course excludes that.

"MR. HOOVER: Then the problem also goes into the consumptive use in the upper basin. In order to reconstruct the river the consumptive use in the upper basin must be taken into account. Is it true that the Laguna gaugings include the Imperial Valley?

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: The Imperial Valley diverts below.

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: Consequently at Laguna you have the whole flow of the Colorado River at that point?

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: Without deductions, except the Gila.

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: And if you were to reconstruct the river you must also take account of the consumptive use of the upper basin and add that to the Laguna gaugings, and ought to add also the Gila flow. Have you a rough idea as to what the flow of the Gila would be if it had not been used for irrigation, or what the consumptive use, plus the present flow, is?

"MR. A. P. DAVIS: I can estimate that fairly closely. The mean annual flow as measured during the last twenty years is 1,070,000 acre-feet. The areas that are irrigated there are given in this document, 142, and we can apply a duty of consumptive use of water on that area and approximate fairly well, I believe, the consumptive use in the Gila Basin, if that is what is wanted.

"MR. HOOVER: My only point on that is, does it approximate, possibly, the amount of consumptive use in the upper basin?

"MR. A. P. DAVIS: Oh no, it is smaller. The consumptive use in the upper basin is on that table I gave you.

"MR. HOOVER: About two million four hundred thousand?

"MR. A. P. DAVIS: In 1920 the consumptive use was about 2,400,000 acre-feet.

"MR. CARPENTER: That is a progressive increase from 0 up?

"MR. A. P. DAVIS: Yes.

"MR. CARPENTER: You would think the Gila consumptive use would be something over a million and a half feet?

"MR. A. P. DAVIS: Very likely less than a million and a half. But I am not sure about that till I figure on it a little.

"MR. CARPENTER: In other words, there might be . . . .

"MR. A. P. DAVIS: (Interrupting) There would be a good deal less.

"MR. CARPENTER: There might be, then, a million feet to go into this calculation for translating back from Laguna gaugings?

"MR. A. P. DAVIS: To include the Gila, yes. It doesn't seem like it would apply to the Little Colorado, as its contribution is offset by evaporation. There is very little outside the Gila Basin that is not thus offset.

"MR. CALDWELL: Mr. Davis, just where is the Gila measured?

"MR. A. P. DAVIS: There have been different points; one was at Dome.

"MR. CALDWELL: Tell me where it is with respect to the mouth?

"MR. A. P. DAVIS: Dome is about twelve miles above the mouth, and that was changed on account of difficulties of measurement, but not very materially.

"MR. CALDWELL: This million seventy thousand you speak of is an average flow, is it?

“MR. A. P. DAVIS: Yes.

“MR. CALDWELL: Average annual flow over how many years?

“MR. A. P. DAVIS: Eighteen years, I believe. It is all published in Senate Document 142.

“MR. CALDWELL: That is near enough.

“MR. HOOVER: On the table on page five, Senate Document 142, take 1920 for instance, you have 21,000,000. That is the Laguna flow.

“MR. A. P. DAVIS: Yes.

“MR. HOOVER: What would be added here, as a rough guess, would be the flow and consumptive use of the Gila and Little Colorado and the consumptive use of the Colorado below Lee's Ferry and above Laguna. This all comes to about a million and a half, and the consumptive use in the upper basin is 2,400,000 so it would be a credit of water to the Laguna readings of approximately a million feet, something like that.

“MR. CARPENTER: Yes. If there are others, like the Virgin and other rivers, that would be still more of a reduction.

“MR. SCRUGHAM: I thought the Imperial Valley had a heading somewhere at Laguna. What was all the disturbance by the Yuma people?

“MR. A. P. DAVIS: They have contracted for building their canal and heading it at Laguna and have agreed to do that, but never have done it. They have never taken any water out above the Yuma project. The best use of the Gila, as I said yesterday, is in its own valley and that probably will be accomplished some day.

“MR. HOOVER: Would it be possible for you to recast some figures in the light of the counteraction of deducting the Gila flow and consumption from the upper basin flow and consumption?

“MR. A. P. DAVIS: The lower basin consumptive use you mean, don't you? Make some approximation of a difference in consumptive use between the lower basin and the upper basin, exclusive of the Imperial Valley, and add that to these figures.

“MR. HOOVER: You would have to add to the consumptive use the flow of the Gila over and above its consumptive use.

“MR. A. P. DAVIS: Did you want the flow of the Gila included also?

“MR. HOOVER: It is a part of the drainage basin.

“MR. CARPENTER: You are now revolving as I revolved at one time and I decided consumptive uses had better offset one another and took the figures as printed.

“MR. A. P. DAVIS: I don't know how near they would do that. You don't mean to undertake to run that back over twenty-years,—take it as it is now; is that what you mean?

"MR. CALDWELL: Run it back over twenty years.

"MR. A. P. DAVIS: If given time I could make an estimate that would be worth something. The present consumptive use we practically know. How that has grown is a matter of history.

"MR. HOOVER: I might phrase it in another way perhaps. On page 5 of Senate Document 142 your mean flow at Laguna is 16,400,000. Now if you went into this elaborate calculation to account for the Gila consumptive use below and consumptive use above it might add a certain amount to that mean flow—it might add between 500,000 and a million feet. That is just a guess that might be the result of such an elaborate calculation.

"MR. A. P. DAVIS: That is true.

"MR. HOOVER: And if you took the low years as being 500,000 less than that, it probably wouldn't vary materially or affect the mean?

"MR. A. P. DAVIS: No.

"MR. HOOVER: So that you would get somewhere around 17,000,000 feet as the Lee's Ferry flow?

"MR. A. P. DAVIS: Yes, 17,000,000 would be a correction in the right direction, probably not very far wrong.

(Lacuna)

"MR. HOOVER: I should think for matters of discussion we could take it that the reconstructed mean at Lee's Ferry is a minimum of 16,400,000 and perhaps, with this elaborate calculation, half a million above, i. e., 17,000,000. Therefore we would come to a discussion of a 50-50 basis on some figure lying between 16,400,000 and 17,000,000.

"MR. S. B. DAVIS: With all due respect to these eminent gentlemen I am still from Missouri, I have to be shown, but I am willing to enter into a discussion on that line.

"MR. HOOVER: I should think the result of the deliberations and of our advices on that matter have been to establish the 16,000,000 as a sort of least mean.

"MR. S. B. DAVIS: As the average mean at Lee's Ferry.

"MR. HOOVER: Yes, and that an apportionment of a minimum would be half that sum, 8,200,000 acre-feet instead of the 6,260,000 feet as suggested by Mr. Carpenter—so that this would be the question of your proposal, delivering approximately 82,000,000 acre-feet in ten-year blocks.

"MR. NORVIEL: As the minimum average.

"MR. HOOVER: That's the total they agree to deliver in ten-year blocks. Then, just to further the discussion, if the Mexican deduction is to be borne by both sides and we take the maximum Mexican position, it would mean, so far as the southern basin is concerned, their needs, as worked out by the Reclamation Service including the projects in view, are 7,450,000 feet, so that 8,200,000 covers that with a comfortable margin.

"MR. A. P. DAVIS: It includes half the water to be delivered to Mexico on the basis of 800,000 acres.

"MR. HOOVER: So the southern basin would be protected as to their end and still have a margin of about 800,000 acre-feet.

"MR. NORVIEL: That would be for possible future development.

"MR. HOOVER: Or anything that may happen to you.

"MR. NORVIEL: Delivered at the point of delivery.

"MR. CARPENTER: Delivered at Lee's Ferry; you already have figured your evaporation on the river.

"MR. NORVIEL: Not this one. We figured that for the purpose of calculation.

"MR. CARPENTER: You told us that power was many times more valuable than any other use. We are letting you tear all the fire out of that water clear down to Laguna.

"MR. NORVIEL: You have more miles above and the fire will already have been torn out.

"MR. CARPENTER: It recovers itself, it's just as good; our evaporation is already taken out.

"MR. NORVIEL: The evaporation is not taken out of the two million if it is to be delivered to us.

"MR. CARPENTER: If we use it for power above, our evaporation is already out.

"MR. NORVIEL: The evaporation has not been deducted from the million and a half acre-feet that you are going to deliver in Mexico. You have to make delivery at the point of delivery, not 600 miles above.

"MR. HOOVER: Mr. Norviel, you have a margin of 750,000 feet to take care of all needs all along. That's pretty liberal.

"MR. NORVIEL: That makes 8,200,000 acre-feet a year minimum.

"MR. HOOVER: That's the total to be delivered at Lee's Ferry. (Mr. Norviel requests time for consultation.)

"MR. NORVIEL: (After recess) As I understand the proposition Mr. Chairman, it is to divide the water so that the lower basin will receive (including the one-half to be furnished the Mexican lands) 82 million acre-feet per annum over a period of ten years average, with four and one-half million acre-feet minimum annual flow.

"MR. HOOVER: It might be worth discussion. I wouldn't want to put it in the mouth of the gentlemen from the North, that it is their proposition.

"MR. CALDWELL: There is no proposition; there is recorded a 'no' vote against that minimum yet.

"MR. CARPENTER: That's a subject of discussion.

"MR. NORVIEL: I thought when we retired we were to consider that on the basis of four and one-half million acre-feet minimum annual flow.

"MR. CARPENTER: From the last poll of the vote on the minimum there were five for and two against but the period was left undecided.

"MR. NORVIEL: Now we are fixing the period at the greatest number of years suggested, which is ten.

"MR. CARPENTER: We thought the period was left open. The minimum is for one year, an irreducible minimum predicated on no period. The low year goes regardless of period.

"MR. HOOVER: Supposing I take the onus of a suggestion for the consideration of the upper states,—the 82,000,000 ten-year block and a minimum flow for one year of four and one-half million.

"MR. CARPENTER: If you crowd us on the minimum we will have to have a protecting clause on precipitation, because we can't control that. Nature will force us into a violation, any possibility of which we should strenuously avoid in our compact, because that would provoke turmoil and strife. The mere matter of 500,000 acre-feet as the minimum is small, but it might be decisive at such a time. It is not with the idea of trying to avoid delivering the water that I am suggesting the low figure, it is to avoid that which would result from nature's forcing a minimum that we could not control; therefore we want to avoid that as nearly as we can.

"MR. HOOVER: You are seeking protection from a shortage on precipitation beyond that heretofore known."—Colorado River Commission, *Minutes of the Sixteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 19-29, Tuesday, 3 P. M., Nov. 14, 1922.

"MR. S. B. DAVIS: Mr. Norviel, in order that we may know how far apart we are in this matter (offer of 65,000,000 acre-feet in a ten-year period), would you state what you do consider a fair amount to be guaranteed to you at Lee's Ferry?

"MR. NORVIEL: I think, inasmuch as your needs are practically even, we will accept the burden of the losses below Lee's Ferry, and take a reconstructed river on an even basis at Lee's Ferry . . . .

"MR. NORVIEL: I will go back to the proposition made to us yesterday. We will accept 8,200,000 acre-feet, on a ten-year basis with a 4,500,000 minimum, while on a five-year basis a 4,000,000 minimum annual flow will be acceptable . . . .

"MR. CARPENTER: That is, for any five-year period there is to be a minimum of 4,000,000 acre-feet per year?

"MR. NORVIEL: Yes. . . .

"MR. HOOVER: What Mr. Norviel means is for any one year the minimum shall not be less than 4,000,000 for a five-year period, or less than four and a half a year for a ten-year period.

"MR. S. B. DAVIS: The difficulty with 82,000,000, as I have said, is that we have already experienced ten years in which it would have been impossible for us to comply.

"MR. HOOVER: The difficulty is in guaranteeing in the face of an unknown quantity?

"MR. S. B. DAVIS: Yes sir."—Colorado River Commission, *Minutes of the Seventeenth Meeting*, Bishop's Lodge, Santa Fe, pp. 12, 13, 14, Wednesday, 11 A. M., Nov. 15, 1922.

"MR. NORVIEL: Before we recess, perhaps, I might state another little proposition and let them give it consideration if they care to.

"The State of Arizona proposes to allocate the waters of the Colorado River between the proposed upper and lower divisions upon a fifty-fifty division as follows:

"The river is to be reconstructed annually by measuring the flow at or near Lee's Ferry in Arizona and by adding thereto the consumptive use of water in the upper basin, the total amount of water thus found to be the basis for an equal division between the two divisions, each division contributing equally to the amount that may hereafter be allotted to Mexico by international agreement or otherwise. In the event that the upper division should in any year exceed its percentage and thus deprive the lower division of its percentage the deficiency shall be compensated for during the next two succeeding years . . . .

"MR. CALDWELL: Just how would you determine the consumptive use in the upper basin?

"MR. NORVIEL: It is to be determined each year.

"MR. CALDWELL: Just a minute. Would you predetermine the consumptive use in acre-feet—or would you use the actual consumptive use?

"MR. NORVIEL: It would have to be measured.

"MR. CALDWELL: It would be very difficult, impossible practically.

"MR. NORVIEL: I think I said so in the beginning of our meetings.

"MR. CALDWELL: I think it would be impossible.

"MR. NORVIEL: Practically.

"MR. HOOVER: We will recess until three o'clock this afternoon.

Thereupon the meeting adjourned to meet again at three o'clock P. M., November 15th.

Clarence C. Stetson,  
Executive Secretary."

—Colorado River Commission, *Minutes of the Seventeenth Meeting*, Bishop's Lodge, Santa Fe, pp. 24-25, Nov. 15, 1922.

Note: The caucus continued the afternoon and evening of November 15th, the Commission resuming executive sessions Thursday, Nov. 16, at 10 A. M.

"MR. HOOVER: . . . . 'During the term of this compact the states in the upper division shall not deplete the flow of the river (at the point of division) below seventy-five million acre-feet for any ten-year period, or below a flow of four million acre-feet in any one year. Provided, however, that the lower division may not require delivery of water unless it can reasonably be applied to beneficial agricultural and domestic uses; and the upper division shall not

withhold any water which may not be applied within such divisions to beneficial agricultural and domestic use.' . . .

"MR. NORVIEL: Mr. Chairman, I can't get away from the idea that the figures are too low. While there is in it an element of a guaranty it is lower than the lowest ten-year period we have any knowledge of and it is also after the division is made—after the whole use in the upper division is taken out and would include the total use in the lower division. In other words, it is the excess over and above what the upper states have not heretofore used. It is less than half of the lowest ten-year period that has ever existed.

"MR. CARPENTER: That we have any record of.

"MR. NORVIEL: Yes, and I rather think that former years, if they had been measured, would have shown perhaps a worse condition, so I can't think that that is a fair division over a ten-year period, nor one which gives the fullest protection.

"MR. HOOVER: 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 was that we make, in effect, a preliminary division pending the revision of this compact. The seven and a half million annual flow of rights are credited to the south, and seven and a half million will be credited to the north, and at some future day a revision of the distribution of the remaining water will be made or determined.

"An increasing amount of water to one division will carry automatically an increase in the rights of the other basin and therefore it seemed to me that we had met the situation. This is a different conception from the fifty-fifty division we were considering in our prior discussions.

"MR. NORVIEL: If this includes reconstruction of the river, then, I concede it is a more nearly fair basis. But if it does not—if it is a division of the water to be measured at the point of demarcation, I still insist that it is not quite fair, because it is simply dividing what remains in the river.

"MR. HOOVER: We are leaving the whole remaining flow of the basin for future determination.

"MR. NORVIEL: What I am getting at is this: That the upper basin takes out and uses a certain amount of water, and as this reads, it proposes to divide the rest of it, seven million five hundred thousand acre-feet per annum.

"MR. HOOVER: No.

"GOVERNOR CAMPBELL: That is inclusive, Mr. Norviel.

"MR. NORVIEL: It reconstructs the river?

"GOVERNOR CAMPBELL: Yes, in effect, as I understand it.

"MR. NORVIEL: Well, if it does that, then my objection will be removed.

"MR. HOOVER: Any other comment? If not all those in favor of this clause seven as read please say 'aye'.

"(Thereupon a vote having been taken upon the paragraph numbered 7, the same was unanimously passed.)"—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 30-33, Thursday, 10 A. M., Nov. 16, 1922.

## APPENDIX II—EXHIBIT W

### EXCLUSIVE BENEFICIAL CONSUMPTIVE USE

“MR. CARPENTER: It was thought that the clause ‘apportion’ took care of itself without any unnecessary definition.

“MR. NORVIEL: I thought arrangement was made so that we had not used the term ‘apportionment’.

“MR. CARPENTER: No, we have used the term ‘apportionment’ very frequently but that was the place where it defined its own meaning.

“CHAIRMAN HOOVER: Well, it is a legal question and it does seem to me we ought to know the legal definition, where it leads to. Do we wish to go against the inherent law of practically every state and of the United States? Waters are not divided. They are divided as to use.

“MR. EMERSON: Divided for use.

“MR. CARPENTER: The statement made by the Chair is an error in this: the laws of the states proceed upon the theory that the corpus of all water belongs to the sovereignty of the state and that the uses thereof are dedicated to its people and that as among the people in their uses, they are dedicated to beneficial uses. Corpus or ownership reposes at all times in the sovereignty of the state. The constitution of Wyoming is the most explicit of all the constitutions, I believe, in that respect, stating definitely, as I recall, that the waters of the streams are the property of the state.

“MR. EMERSON: The waters of all natural streams. The Wyoming constitution states that the waters of all natural streams, lakes or other classes of still waters are thereby declared to be the property of the state.

“MR. CARPENTER: The constitution of Colorado is very much the same as that of Wyoming except it doesn’t use the word ‘state’ and the decisions of the court of that state have held that the water is the property of the state and its use is dedicated to the people of the state.

“It strikes, if you please, at the fundamental question raised here by counsel for the United States. It is their contention that the waters of the streams, the unappropriated waters of the streams are the property of the United States and are wholly removed from state control, being the opposite of the principles announced by the states. The waters of the state are the property of those states, being dedicated by them to beneficial uses, etc.

“Now this is not a compact between water users. It is a compact between States. As far as the objective to be attained is concerned, we have agreed that the waters of the river shall be apportioned for beneficial consumptive uses, using that as a measure of determining the quantity apportioned. That comports with the theory of the best use of water and avoids those practices of waste and other like objectionable features to the diversion of water. But this is a compact between States as such, and not between water users. The very au-

thority submitted to the Chairman in the note last evening holds that the property of the water itself is in the state and the use is in the people and that the title to the use is only that of a beneficial use.

"Now we will avoid running counter to all those advocates of the most extreme doctrine of the absolute domain of the state in which we do not always concur to the degree frequently urged, by simply stating the principle in the manner I have mentioned, and also confine the method of apportionment to the best adopted practice, that of consumptive beneficial use.

"CHAIRMAN HOOVER: Is the object of this change to secure from the federal government a quit-claim deed to the unappropriated water?

"MR. CARPENTER: Not at all. It is thought that the Act of Congress gives us the right we are seeking to exercise, that of equitably dividing and apportioning the water supply of this river. We are proceeding in conformity with the Act when we made the statement somewhat along the lines of the suggestion I have made.

"CHAIRMAN HOOVER: Throughout the drafting of this compact I have had one thing in view all along, and that is the situation we will have to meet in Washington when we come to get the compact confirmed. I had sought to take such wording as I could assist in, in such a way as to keep out of every dangerous field. As it stands now it doesn't confer on the federal government the contention that has been raised, that it has any right to the unappropriated water. It likewise does not confer on the state the contention that the federal government has no right to the unappropriated water. It avoids that entire issue, and therefore doesn't raise the issue. If we are going to raise that issue we can be confident of a reservation on the part of the federal government to the whole compact.

"MR. CARPENTER: Your idea is to leave that issue undetermined either way?

"CHAIRMAN HOOVER: I am trying to leave it wholly undetermined by dealing simply with the use of water, not in any way divided the corpus of the water itself, so as not to infringe on any contention of the states or any contention of the federal government, which I hope will be forgotten but nevertheless not to raise the question and have it subject to debate.

"MR. CALDWELL: Mr. Chairman, if it can be left that way it is very agreeable to me, but it is not conceivable to me, as a mental process, that we can divide something that doesn't exist. We have a lot of unappropriated water running down there and there are no uses established to it and we are now attempting to divide those uses, although we have said that 75,000,000 acre-feet of water may be applied to a use which may in the future be found to exist.

"Now I don't have any desire to ask the federal government to waive any claim which it may have to its contention, or any rights which would in any way affect its contention, but I only want to be consistent in the wording of this compact. I also want to be careful that the states should not waive anything as to any contention that any state may have, because for this compact it is just as dangerous to have it attacked by a state as it is to have it attacked by the federal government, so far as this particular compact is concerned.

“CHAIRMAN HOOVER: I would like to ask Mr. Carpenter if there is anything in the compact which reinforces or establishes the federal contention of unappropriated water? Does this wording of the compact establish a contention?

“MR. CARPENTER: It doesn't directly establish it. It comports more nearly to their contention. The government's contention proceeds upon the theory that the waters of the streams belong to the government to pass out to the individual. The state has no part in the Basin, except it be by reason of certain acts of Congress which will permit rights for the time being at least to vest under such law. The consequence would be, if that law were repealed, then the states would have no right, their laws would not be heeded but so long as the Act of '66 remains, then it is contended that that permits the rights to vest in conformity to the state laws, the theory being that in the final analysis the title to the water passes out of the government and into the appropriator direct through the instrumentality and the machinery of the state law and if the federal law were withdrawn or removed, then the states would have no more interest and their laws would be nugatory.

“CHAIRMAN HOOVER: I am sitting here between two fires; one that this compact doesn't properly protect the unappropriated waters in the sense of the federal government rights to them, the other the extreme state right that would contend that the corpus of the water title rests in the state. These are the two extremes of the situation. I have thought we could avoid the whole issue by confining this whole pact and discussion simply to the beneficial use of the water. If you wish to make the pact in the form that gives that oblique attitude to it, then the responsibility of getting it through Congress will necessarily rest with you a great deal. I am put in a very difficult situation. I would like to hear from Judge Davis on the entire matter.

“MR. DAVIS: I am once more in the same frame of mind I have been on so many of the subjects that have been discussed. I do not believe that in legal effect there is any difference whatever in saying we divide the water for beneficial use, and we divide the beneficial use of the water. I think we confuse ourselves somewhat by a discussion of final ownership of the water, which is not in any way involved in this pact, nor to my mind involved under either of the terms that are suggested. The word 'apportion' doesn't necessarily mean the transfer of the legal title, nor does the word 'divide.' You can divide or you can apportion things without affecting the legal title in the least, but I would be willing to go one step further if they wish; that if those words did import a change, that the creation of the exclusive use in a thing is equivalent to creating a legal title in that thing for it is impossible, legally speaking, to have a naked legal title in a piece of property with the exclusive right of use to that property in somebody else. In other words, you can't have what we call a naked trustee so that it becomes then a question merely of taste to my mind as between these two expressions, with no difference whatsoever in legal effect. My preference is for the use of the words 'to divide the use' rather than to 'divide the physical water.' In the first place, we don't do it. This water is going to continue to flow down the stream for many years without any physical division of it, or physical apportionment of it, still there is division of the right to use it.

“In the second place, the language comports to the Acts of the various states which authorizes the appointment of this Commission, and it agrees with the

general theory of the law that rights in water are usurpity rights rather than rights in corpus, so that I think I could summarize what I think by saying it makes no difference in effect which language is used, and that as a matter of taste I prefer the compact as it is now written.

"MR. CARPENTER: It is my thought that the issue is not raised directly by the language suggested. Furthermore, I am in harmony with the desire of the Chair to avoid raising the direct issue for the repository of the title, if you please, for the corpus of the water. However, I do not wish the expression in the compact which merely decides the water for the purpose of use to be of such a character as later may be taken advantage of by advocates of one line of thought, or may be subject to criticism as erroneous by advocates of other lines of thought.

"I do not believe it is necessary to raise the issue here, nevertheless, this language in here, used in Article III, leans more strongly in its first impression to the federal contention than it does the state contention. I am speaking of the extreme state contention, I might say, in that regard.

"As for my own views, I have always felt that while a state has a title to the water within its borders, that title is not one of exclusive dominion by which it may destroy another state and that the problem between the states is the equitable apportionment of the water in such a way—or equitable apportionment of the benefits—that the two may live and neither be destroyed. I realize that is not in harmony with the theory that the federal government owns the water and may do with it as Congress may please at the time, denying one section relief and granting it wholly to another in their will.

"The primary thought on my part is to avoid putting interpretations here that may be seized by critics as expressive of an admission against interests by the states. The matter of arriving at what is an equitable apportionment between the states is largely a matter of apportioning the benefits to be derived from the stream and must necessarily depend upon the facts of each particular river and each particular case. I believe that the language I have suggested avoids the danger of admission against interests and yet does not amount to any adverse declaration as against the government's contention.

"CHAIRMAN HOOVER: On the other hand, I understand to put it the other way leans far in the other direction.

"MR. CARPENTER: My thought is to make—

"MR. EMERSON (interrupting): How do you come to that understanding?

"MR. CARPENTER: My thought is to make this language conform to the federal act as nearly as we can.

"CHAIRMAN HOOVER: Governor Mechem, we have been milling this thing for two weeks and we probably are looking at threats in this matter. What do you think of that proposition?

"GOVERNOR MECHEM: I don't think there is any distinction. You wouldn't apportion these waters except upon use. You have got to take that as the basis of your apportionment, that is understood. It seems to me the way it stands now is proper.

"MR. EMERSON: I agree with Judge Davis in his statement, except as to this. The State of Wyoming grants an appropriator a right to use water but when it comes to the division of the water of a stream they apportion a certain definite amount of water to be dedicated to that use. The expressions of the states are that we are apportioning uses. It seems to me we are apportioning certain definite blocks of water for use. The same thing that is happening in the State of Wyoming would happen as between these two divisions. If we have the water of a certain stream in Wyoming to distribute among users in some instances we have certain stations where we deliver a certain definite amount of water; not any certain definite amount of use. We are not dividing the use or delivering use, we are delivering water and while the whole thing is founded upon use, we are dealing in quantities of water and to my conception it would not bring up the question as to the ownership of the corpus of the water if Article III was amended in its first two paragraphs by stating an apportionment of water for beneficial consumptive use.

"I am interested to know if there is a nigger in the woodpile here if it shouldn't come out and we take a look at it; if we are going to make a statement dividing uses and then find that the federal government later can come in and uphold its contention to the ownership of the water itself, where have we arrived at in this compact? I am definitely for the statement 'apportionment of water for beneficial consumptive use.'

"MR. DAVIS: With reference to the last remark, possibly the difficulty between yourself and myself on that would be this: If I had the exclusive and perpetual use of an article I care not who owns it. If I acquire the definite perpetual and exclusive use of 7,500,000 acre feet of that water it makes not the slightest difference to me whether that ownership is in the State of Wyoming or the State of New Mexico or the United States of America or in some individual. All I want to do is use it; all the owner of it could do would be to use it, if the use had not parted from it. So I think really you and I are in perfect agreement, that practically there is no difference in these expressions, it becomes merely a matter of language.

"MR. SCRUGHAM: Are you willing to submit to a majority vote on it, in order to settle which terms will be used?

"MR. CALDWELL: Personally, as far as I am concerned, I don't want to convey the impression that I was in any attitude to wreck the compact here if this language were not changed, but I think it is worthy of consideration here in order that it may not be a bone of contention, which in my judgment it will be if this is not left.

"Now I don't think we ought to leave this to a majority for this reason. Somebody may go away from here with a bad taste in his mouth. I think it is highly important that we all be for this pact, with just as few mental reservations as possible, and enthusiastic for it on the big main issue and if by discussing this we can get a harmony of opinion on it, get an expression which will cover all of our views sufficiently, I think it would be very much worth while, I am going to say, so far as I am concerned, there seems to have developed some little difference of opinion here—I don't think it is much—between Judge Davis and Mr. Carpenter as attorneys. As far as I am concerned, I am

quite well satisfied that these two gentlemen can frame an expression which will be satisfactory to both of them. I am willing to commit myself in advance to such an expression if they get together on the proposition.

"CHAIRMAN HOOVER: The whole proposition here is whether you are going to divide the corpus of this water or whether you are going to divide the use. If you are going to divide the corpus of the water you are going to be in a mighty lot of trouble before the federal government. If you are going to divide the use of the water, I don't see any difficulties in the matter at all. Now if you are going to divide the corpus of the water you are going to adopt the extreme state view. If you are going to the other extreme and adopt the extreme federal view you would acknowledge in this pact the unappropriated water belonged to the federal government and that by this act the federal government consented to transfer its rights to the states and it would never get through Congress.

"The question is to find a medial ground which does not have either extreme, and finding that ground on the ground of use has struck me all along as being the medial ground which doesn't raise the question. If you are going to take Mr. Carpenter's view you are going to divide the corpus of the water. That is a contention I don't think the federal government would be inclined to stand for. It is not for me to decide, it is purely for you.

"MR. DAVIS: It seems to me we have reached the point where somebody has got to go away with a bad taste in his mouth. It is a question of how many of us. I have got an awful bad taste in Article VIII but have reached the frame of mind where I am going to say I like it, nevertheless, and I think the only way out is to take a vote on this article and let it be controlled by a majority.

"CHAIRMAN HOOVER: I don't want anything in the pact that leans toward the federal contention, any more than it leans toward the state contention. I am perfectly prepared to adopt any medial ground, Judge Davis, that anyone can draft that doesn't lean either way.

"MR. CALDWELL: I agree with that expression, Mr. Chairman, as far as I am concerned.

"MR. CARPENTER: Then let it be agreed that it be the sense of this Commission that whatever compact is turned out as adopted does not comport with either extreme view, the extreme view of the federal government or of the states, and shall not be taken as an admission against the interests on either side.

"MR. DAVIS: You don't want to put that in the compact?

"GOVERNOR MECHEM: It doesn't affect the right of the states as it stands, or of the federal government as it stands, does it?

"MR. CARPENTER: That is a question upon which there is a division of opinion. It more nearly approaches the medial ground, probably, than more extreme expressions on either side, but as far as I am concerned I don't want it to be said by an advocate of the federal government that this compact accedes to their view, an argument in which none of us representing the states, concur. On the other hand, I don't believe that medial ground can be reached where it may not be said that the states yielded to such a view.

“CHAIRMAN HOOVER: Well, now, we have got the extreme federal government view here. Let's ask Mr. Hamele if he considers this in any way supports his contention?

“MR. HAMELE: I fully agree with what Mr. Carpenter has just stated about the medium ground. The only objection I have raised at any time here upon that point is that the United States would not be willing to have this compact construed as a quit-claim deed of its rights. I think the language as used is accurate. I think it expresses the intention particularly of the statutes of the states under which this Commission operates, and also I think under a reasonable interpretation of the federal statutes. Moreover, I think it is in strict accordance with the fundamental principles of our law that have been laid down from Blackstone down to the present day by every writer on the subject and I feel that its adoption would not infringe upon the rights of either the states or the federal government.

“MR. CARPENTER: Leave that question open for later determination without prejudice?

“MR. HAMELE: Without any prejudice, that is my view.

“MR. EMERSON: The constitution of the State of Wyoming is referred to, which declares specifically that the water belongs to the state. However, in our administration of water supply one commissioner in a district may turn down to a lower commissioner a certain definite block of water. He is turning that definite block of water down for consumptive use. The state has relinquished no right that it has as to the ownership of that water when it does allow a certain practice of that kind, but they are turning down a certain definite block of water without relinquishing their ownership. It seems to me the way it now stands is a foolish expression and is adverse to the present expression of our law. You are apportioning uses. It seems to me you are apportioning a certain definite amount of water for beneficial use, upon which all water law is founded, of course. The Wyoming law states the beneficial use is the measure of the basis, but it does not preclude the operation of turning certain definite amounts of the state's water from one district to another, and we are carrying it here into a larger way by delivering for use certain blocks of water in one division and another block in another division.

“MR. DAVIS: I suggest, Mr. Chairman, that Mr. Carpenter, Mr. Caldwell, Mr. Emerson and myself consult a moment.

(Thereupon the four above mentioned commissioners retired for consultation.)

(After consultation.)

“CHAIRMAN HOOVER: We have had some discussion on Article III and I will entertain a motion from Judge Davis.

“MR. DAVIS: Before making the motion, the States of the Upper Division wish to state affirmatively for the record that it is the understanding that the use of the language in Article III constitutes no waiver on their part or on the part of any one of them to any claim of ownership which they may have to the corpus of the waters or any recognition of any right or claim on the part of

the United States to the corpus of any of the unappropriated water of the stream, it being the understanding of those states that the language used is a middle ground which in no way raises or affects the title of ownership.

"MR. SCRUGHAM: On behalf of the State of Nevada I desire to adopt the statement made by Judge Davis for the record.

"MR. McCLURE: California assents to that statement.

"MR. SCRUGHAM: Could we alter the statement and make it on behalf of all commissioners present? That might simplify the record.

"CHAIRMAN HOOVER: I think that might be done.

"MR. DAVIS: I move that Article III as at present prepared be amended as follows: Strike out the first three lines, which covers everything down to the sub-paragraph lettered (a). In the first line of sub-paragraph (a) strike out the words 'to each' at the end of the line. Insert in lieu of those words these words: 'To the Upper Basin and to the Lower Basin respectively.' Strike out the word 'Basin,' the first word in the next line, and insert the word 'the' so that the first two lines of paragraph (a) will read as follows: 'There is hereby apportioned in perpetuity to the Upper Basin and to the Lower Basin respectively the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum.'

(The motion of Mr. Davis having been duly seconded by Mr. McClure, the same was unanimously carried.)

"MR. EMERSON: There is one little matter there; that should read 'There is hereby apportioned from the waters of the Colorado River System in perpetuity to the Upper Basin.'

"CHAIRMAN HOOVER: There is one other little point raised here on Article VIII which I would like to have your approval on and that is to introduce after the words 'may be stored' the words 'not in conflict with Article III.'

(Thereupon, a vote having been taken upon the amendment to Article VIII, as above, the same was unanimously adopted.)

"CHAIRMAN HOOVER: I will now entertain the motion that was made for the engrossment of the pact as it is now agreed.

"MR. McCLURE: I renew the action.

(Thereupon, the motion of Mr. McClure having been duly seconded by Mr. Scrugham, the same was unanimously carried.)

"At this time adjournment was taken until 2:30 P. M."—Colorado River Commission, Minutes of the Second Part, *Meeting of Nov. 24, 1922*, Bishop's Lodge, Santa Fe, pp. 1-17, Friday, 10 A. M.

## APPENDIX II—EXHIBIT Y

### RELATION OF MEXICAN CLAIMS TO THE DIVISION OF WATER IN THE UNITED STATES

1. Correspondence Asserting Mexican Claims.
2. Upon Whom Will the Mexican Burden Rest.
3. Increase of Irrigated Acres in Mexico.
4. May Mexican Claims be Disregarded.
5. Treaty Provisions and References.

#### 1. *Correspondence Asserting Mexican Claims.*

“At a session held on the 17th of March, 1920, at the ‘Trinity Auditorium’ in Los Angeles, California, by the Chamber of Commerce of that city and attended by representatives of the so-called ‘South-Western League of the United States,’ Their Excellencies, the Governors of the States of Arizona, California, Colorado, Idaho, Oklahoma, Wyoming, and also some high representatives of banking, commerce and politics and the Honorable, the President of the Senate of the United States, it was unanimously resolved to support five motions, one of which was that the Government of this country should come to an agreement with that of Mexico to have them contribute equitably to the expenses that will be involved in the utilization of the waters of the Colorado River for irrigation purposes and motive power. The Chamber of Commerce of Los Angeles, communicated in advance with the Government of the Northern District of Lower California the desire to have the interests of Mexico represented by Mexican delegates and in compliance with that desire, in an informal manner, owing to the fact that the question being one of international interest the invitation should not have been extended through the Government of that district, the said session was attended by an agent of that district and the chief engineer of the Mexican Colorado River Irrigation Commission.

“As soon as the Mexican authorities concerned heard of the foregoing, the Secretary of the Embassy of Mexico, in compliance with instructions that had been sent to that effect on two different occasions, (the 14th of November, 1920, and the 3rd of March, 1921,) applied in person to the Chief of the Division of Mexican Affairs of the Department of State and communicated to him orally the foregoing with the request that with respect to the treaties in force and considering that Mexico holds in the distribution and the utilization of the waters of the Colorado River, rights in common with the United States, the rights of Mexico be given due consideration in any future conferences or agreements, in reply to which the Chief of the Division also orally and in his personal capacity said to the Secretary of the Embassy, first (on November 14) that the Department of State had no official knowledge of the session above referred to having been held and later (on the 3rd of March), when the Secretary gave him further particulars about that session that the Department would in due course acquaint the proper Mexican authorities with the steps that might be taken in the future

and which might affect the rights held in common by Mexico and the United States over the waters of the Colorado River.

"Later on, the embassy heard that in June, 1921, on the initiative of one of the honorable representatives from the State of Wyoming, there was introduced (act for compact).

"Inasmuch as the rights of Mexico were not taken into consideration therein, the Embassy of Mexico confirming in this formal manner the representations heretofore orally made by its secretary, has the honor to apply to the Department of State and to ask that Mexico be duly represented and given consideration as a party in the studies and projects that may be undertaken or the arrangements that may be made concerning the distribution and utilization of the waters of the Colorado River, in view of the fact that the questions relative to that river, apart from involving serious phases of a technical nature are essentially of international policy, for as long as Mexico and the United States shall not have framed a final agreement definitely stating the rights and obligations with respect to the conservation of the bed of the river, to the utilization of the waters as a way of communication, to its use for irrigation purposes and motive power, and as to the manner of protecting the land of countries from the danger of flood, neither party can particularly put into practice any project whatsoever, without a breach of the existing international treaties.

"On this occasion the Embassy of Mexico takes pleasure in renewing to the Department of State the assurances of its most distinguished consideration.

"Washington, D. C.

October 15, 1921."—Copy of a copy marked, "TRANSLATION," and bearing the heading, "EMBASSY OF MEXICO." Attached to the letter was a slip of paper with the notation: "Department of State, Bureau—Mc. Division Enclosure, Letter dated \_\_\_\_\_ addressed to the Honorable The Secretary of Commerce."

## COPY OF ORIGINAL

“DEPARTMENT OF STATE  
Washington

March 13, 1922.

“In reply refer to  
Me 711.1216 M/503

The Honorable

The Secretary of Commerce.

“Sir:

“I have the honor to enclose a translation of a communication dated February 26, 1922, from the representative in Washington of the administration now functioning in Mexico, in which he refers to several conferences said to have been held in this city during the latter part of January and attended by the Secretary of Commerce and representatives of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, the purpose of which was to discuss questions relating to the distribution and storage of the waters of the Colorado River. He also makes reference to further similar conferences which are to be held at Phoenix, Arizona, on or about the 15th instant; and he asks that he be advised as to the topics discussed and the agreements reached by the several conferences which have already been held, and requests that Mexico be given representation in future conferences.

“The Mexican representative quotes a portion of his note verbale of October 15, 1921, a translation of which is appended hereto. Special attention is invited to the statements appearing in these communications with respect to Mexico's alleged rights under existing treaties in the use of the waters of the Colorado River.

“I beg to request that you furnish me with such information as you may be able to give me with respect to the matters referred to in the Mexican communication of Feb. 26.

“I have the honor to be, Sir,

Your obedient servant,

(Signed) Charles E. Hughes.

“Enclosures:

From Mexican representative, dated February 26, 1922.

From same, dated October 15, 1921.”

## COPY OF ORIGINAL

“DEPARTMENT OF STATE  
Washington

“In reply refer to  
Me 711.1216 M/505

The Honorable

The Secretary of Commerce.

“Sir:

“Referring to the Department’s letter of March 13, 1922, File 711.1216 M/503, transmitting correspondence from the representative in Washington of the administration now functioning in Mexico, in which he referred to several conferences said to have been held in this city during the latter part of January and attended by the Secretary of Commerce and representatives of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, the purpose of which was to discuss questions relating to the distribution and storage of the waters of the Colorado River, I enclose herewith, for your consideration, a translation of a communication dated April 4, 1922, from the Mexican representative, in which he renews his request that he be advised as to the topics discussed and the agreements reached by the several conferences which have been held, and that Mexico be given representation in such conferences.

“I have, therefore, the honor to renew my request for an expression of your views.

“I have the honor to be, Sir,

Your obedient servant,

(Signed) Charles E. Hughes.

“Enclosure:

From Mexican representative, dated April 4, 1922.”

## COPY OF COPY

"April 20, 1922.

"The Honorable  
The Secretary of State  
Washington, D. C.

"My dear Mr. Secretary:

"I beg to acknowledge receipt of your communication of March 13th in respect to Mexican relations to the Colorado River.

"I enclose herewith a copy of the Congressional Act through which the Federal Government is participating in certain discussions with regard to the Colorado River. A number of hearings have been held throughout the West, and discussion is proceeding amongst members of the Commission with view to consummation of the subject matter of the Act.

"It has not occurred to me that the Mexican Government can rightly claim any representation in a Commission engaged in domestic considerations, or to have access to its records. Although subject to correction by you, it seems to me that any rights Mexico may have must be dealt with by the Federal Government and such treaty rights will override any interstate arrangements. I should not think such rights could be established by the Mexican Government through any relationship with this Commission. They must be formulated entirely by your good self.

"Enc.

Yours faithfully,

"HH-AGS

Note: The initials at the lower left-hand corner would seem to indicate that Mr. Hoover wrote this letter.

## 2. *Upon Whom Will the Mexican Burden Rest?*

"MR. HOOVER: Isn't there any hopes that the upper basin would accept the whole Mexican burden?"

"MR. CARPENTER: None at all."—Colorado River Commission, *Minutes of the Seventeenth Meeting*, Bishop's Lodge, Santa Fe, p. 18, Wednesday, 11 A. M., Nov. 15, 1922.

"MR. MAXWELL: (Quoting Article III, paragraph (3). 'and if such surplus shall prove insufficient for this purpose, then the burden of such deficiency shall be equally borne by the upper basin and the lower basin.')

"Now, they might just as well, Mr. Chairman, have written into that compact a clause that, in the event of such deficiency, the State of Arizona shall supply half of it; because there is no water in the lower basin, in the event of such deficiency, except what is in the State of Arizona rivers, or the Arizona reservoirs. California furnishes no water to the Colorado River. And in such a period of deficiency none could be furnished by Nevada. The whole burden would fall on Arizona.

". . . . In other words, Arizona has the water; none of the other lower basin states have the water. Arizona is in the lower basin; and Arizona must make good, if she agrees to do it, the obligation which rests upon the lower basin, because, from the standpoint of the Mexican owner below the line, he does not know State lines at all; he is operating under a compact or treaty between the States, in which Arizona has agreed that one-half of the deficiency shall be furnished by the lower States without qualification of any kind."—*Hearings*, H. R. 2903, Part VI, pp. 1301-1303, passim, April 17, 1914.

"JUDGE SLOAN: Suppose we develop and need that increase that we give to Mexico. That arouses a controversy between us and California immediately. It puts the burden upon the southern division immediately to take care of that Mexican situation. If some provision could be put in without mentioning Mexico at all by which you could share this burden, it would be established so that it is a recognized necessity on the part of the Imperial Valley to furnish that water—recognized through treaty or through court decree of some court binding upon them or otherwise. That would be all that I should say we could justly demand. It is against our interest to demand anything more which would be expressed in the compact.

"MR. HOOVER: I am not objecting to the partition of the water, but I don't want to embarrass the Federal Government when it comes to the Mexican situation.

"MR. McCLURE: What would be the result if we don't mention it?"

"MR. HOOVER: That the southern division will carry the burden until we get the American canal."—Colorado River Commission, *Minutes of the Twentieth Meeting*, Bishop's Lodge, Santa Fe, pp. 6-7, Sunday, 3:45 P. M., Nov. 19, 1922.

## 3. *Increase of Irrigated Acres in Mexico.*

"MR. MAXWELL: . . . . According to the LaRue report, 'Colorado River and its Utilization,' Water Supply Paper 395, page 159, in 1913 there were only

50,000 acres irrigated in Mexico. According to the Davis Preliminary Report page 13, in 1915 there were 40,000 acres irrigated in Mexico and in 1920 there were 190,000 with a potential total of 820,000 acres."—*Hearings*, H. R. 2903, Part VI, p. 1326, April 17, 1924.

"Conclusions:

"4. Under a Mexican concession, approved June, 1904, by the Congress of Mexico, the right to divert 10,000 second-feet of the water of the Colorado River was granted subject, however, to the condition that one-half of it be used on Mexican land. The right was also granted to receive this water from a canal heading in California north of the boundary line and to convey the same in canals or in natural channels through Mexico. The physical conditions are such that one-half of the water from the main or Imperial Valley Canal in Mexican territory as granted in this concession can be diverted to lands in Mexico. Consequently, the water shortage for American lands in low years will rapidly become more serious unless storage is provided, causing a heavy loss of crops on American farms, for in such low years the American lands would have for periods only about 1,750 second feet of water (and at times even less) for over 415,000 acres of land in cultivation, or only about one-half of the water needed during such period. Therefore, the water supply for lands in the Imperial Valley in the United States already in cultivation is in jeopardy regardless of upper river development."—*Hearings*, H. R. 2903, Part IV, p. 716, March 20, 1924. Weymouth, Frank E., *Synopsis of Results of Investigation*, *Ibid*.

"MR. G. E. P. SMITH: . . . . It must be confessed, that the use of water in Mexico may increase rapidly to more than the quantity agreed on by treaty, and the probable result would be another treaty granting a larger quantity."—50 Proceedings of the American Society of Civil Engineers, No. 9, p. 1494, Nov., 1924. See also, Smith, G. E. P., *Paper on the Colorado River*, Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, pp. 137, 140, March 15-17, 1920.

"C. E. GRUNSKY: In Mexico extensive areas have already been brought under irrigation with water from the Imperial Canal. There is satisfaction in the knowledge that the water in the Colorado River originates in the United States and that were it all retained and used within these borders, if possible, the nation's neighbor to the south would have to be content with a protest. This will never happen. Thus far, however, there has been no limit set to the quantity of water which is ultimately to be allowed to flow into Mexico, and the irrigated area in Mexico has been growing apace. On this subject the United States Government was warned, as already stated, in 1907, at a time when Colorado River water was used in Lower California on less than 10,000 acres. At present, the irrigated area in Lower California is about 200,000 acres. What shall be the limit and what agency other than the United States can fix the limit?"—50 Proceedings of the American Society of Civil Engineers, No. 9, pp. 1482-1483, Nov., 1924.

4. *May Mexican Claims be Disregarded?*

"*Wyoming v. Colorado*, 259 U. S., 419, June 5, 1922. Argument for Colorado.

"The fundamental rule that one nation cannot exercise its sovereign power and jurisdiction over the waters or domain of another nation without its consent

and cannot expropriate the waters of an upper nation for the use of the lower nation by claim of prior appropriation, even on an international river, has been recognized and followed by the United States in its relations with Mexico. 21 Ops. Atty. Gen. 280-283. When the United States, as a matter of international policy but not of international law, settled the differences over the Rio Grande with Mexico, it took the precaution so to word the treaty that the adjustment could never be taken as a recognition of any lawful claims by Mexico. Treaty of May 1, 1906, Article V, 34 Stat. 2953."—*Wyoming v. Colorado*, 259 U. S., 419, pp. 437-438, *Argument for Colorado*, (June 5, 1922).

" . . . Whenever this question has arisen our country, as a matter of comity between nations, has granted to the other foreign country the amount of water which they have been putting to a beneficial use."—Swing, Phil, *Hearings before the Committee on Irrigation and Reclamation*, United States Senate, Sixty-Eighth Congress, Second Session, on S. 727, Part I, p. 31, Dec. 22, 1924, Washington, Government Printing Office, 1925.

"MR. SWING: When they were going to appropriate 10,000 second-feet, which is more water than is in the river eight months in the year, Mexico filed a protest and it was referred to the Department of Justice, and subsequently a report was made, and their interpretation of this treaty happened to be that since the diversion was at a point on other than the common boundary of 20 miles that the treaty did not apply to diversions not on that 20-mile strip."—*Hearings*, H. R. 2903, Part V, p. 893, March 25, 1924.

### 5. *Treaty Provisions and References.*

"SECRETARY HOOVER: I think it will be necessary to look into the Mexican treaties and it may be necessary to make some survey of the already existing rights to clear up points formally."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., pp. 45-46, Thursday, 10 A. M., Jan. 26, 1922.

#### "3. *International Questions Involved—Treaties with Mexico. Irrigation.*

"During the years of 1912 and 1913 several forms of a proposed convention, with reference to equitable distribution of the waters of the Colorado River, were exchanged between the United States and Mexico, but it seems these negotiations were never completed, and at the present time this question is an open one between the two countries.

#### "*Boundaries.*

"By the boundary convention, Rio Grande and Rio Colorado proclaimed September 14, 1896, the boundary line between the two countries was set at the center of the normal channel of the above-named two rivers, notwithstanding any alterations in their courses from the natural course.

"Article 3 of this treaty also provides that no artificial change in the navigable course of the rivers by building jetties, piers or obstructions which might tend to deflect current or by dredging or by cutting waterways to shorten the navigable distances shall be permitted to affect or alter the dividing line.

"Article 1 of the boundary convention of 1889 provides that all differences or questions arising on the frontier between the United States and Mexico,

where the Colorado River forms a boundary line, shall be submitted to an International Boundary Commission which shall have exclusive jurisdiction over such matters.

*“Navigation.*

“By provisions of Article 6 of the Treaty of Guadalupe Hidalgo proclaimed July 4, 1848, the vessels and citizens of the United States shall in all times have a free and uninterrupted passage by the Gulf of California and by the River Colorado below its confluence with the Gila. By the provisions of article 7 it is provided that the River Gila and the port of Rio Braso del Norte (Rio de Grande) lying below the southern boundary of New Mexico being, agreeable to the fifth article, divided in the middle between the two republics, the navigation of the Gila and the Bravo below said boundary shall be free and common to the vessels and citizens of both countries; and neither shall without the consent of the other construct any work that may impede or interrupt in whole or part the exercise of this right; nor even for the purpose of favoring new methods of navigation.

“By the terms of the Gadsden treaty proclaimed June 30, 1854, which changed the boundary line as provided before in the treaty of 1846, also modified the provisions of article 6 and 7 of the latter treaty in accordance with such modification. The modification, however, does not change the substance of the former treaty and it will be noted that as far as it relates to the Colorado River it preserves only the interests of the vessels and citizens of the United States, thereby placing an inhibition on the Mexican Government from interfering with the navigation thereof but does not provide that the United States shall guarantee the same privilege to the citizens and vessels of the Mexican Government. It should be noted further that this is not true with reference to navigation of the Rio Grande.

“However, it should be noted that there is a dispute on the meaning of the last clause of the first paragraph of Article 4 of the Gadsden Treaty of 1853, the Republic of Mexico contending that this clause intended to give equal rights to the citizens of the two countries.”—O’Hara, James J., Assistant Solicitor, Department of Commerce, and Hamele, Ottamar, Chief Counsel, Reclamation Service, *Joint Memorandum for Mr. Stetson, Executive Secretary, Colorado River Commission.*

## COPY OF ORIGINAL

“DEPARTMENT OF STATE  
Washington

June 5, 1925

“In reply refer to  
Me—711.129/77

“Mr. Reuel L. Olson,  
8 Conant Hall, Harvard University,  
Cambridge, Massachusetts.

“Sir:

“The receipt is acknowledged of your letter of May 25, 1925, in which you request to be informed by what authority the American delegates to the recent conference in regard to the suppression of smuggling operations, held at El Paso, Texas, were appointed. You ask further whether questions relating to the apportionment of the waters of the Colorado River were considered at this conference and to whom correspondence should be directed for further information concerning the division of the waters of the Colorado River.

“In reply you are informed that the American delegates to this conference were appointed by the Secretary of State and that questions relating to the division of the waters of the Colorado River were not considered at the conference in question. There is enclosed, for your information, a copy of a press statement concerning the conference and its personnel.

“For information concerning the Colorado River it is suggested that you consult *Foreign Relations of the United States*, particularly the volume for 1913, pages 981 to 993 inclusive.

“In this connection, there are enclosed as of possible interest to you a copy of the Treaty of Peace between the United States and Mexico and a copy of the treaty relative to the boundary and transit across the Isthmus of Tehuantepec, in both of which reference is made to the Colorado River.

“I am, Sir,

Your obedient servant,  
For the Secretary of State:  
(Signed) H. M. Gunther,  
Chief, Division of Mexican Affairs.

“Enclosures:

1. Treaty of Peace, United States and Mexico.
2. Treaty relative to boundary.
3. Press statement of April 20, 1925.”

For letter of April 15, 1924, and other Correspondence between Secretary of State Hughes and Mr. Raker of the House Committee on Irrigation and Reclamation concerning treaty provisions in effect between the United States and Mexico, see *Hearings*, H. R. 2903, Part VII, pp. 1525-1530, April 25, 1924.

In a letter of March 26, 1923, from Mr. L. C. Hill, then American Commissioner to Mexico, Mr. Hill referred to the tentative agreement between Mexico and the United States which was being discussed about 1913 during the administrations of Taft and Diaz.—*Hearings*, H. R. 2903, Part VII, pp. 1565-1566, May 7, 1924. It appears that in 1919 the Secretary of State wrote to the Chairman of the Committee on Irrigation and Reclamation, House of Representatives, to the effect that after an exchange of several draft conventions a form of convention seems "to have been practically agreed upon in May, 1913, but apparently because of the strained relations which have been existing between the Government of the United States and the so-called Huerta administration in Mexico the convention was never signed, and the matter has been since in abeyance."—*Hearings*, H. R. 2903, Part VI, pp. 1269-1270, April 16, 1924.



## APPENDIX II—EXHIBIT Z

# POLITICAL ASPECTS OF MEXICAN CLAIMS TO COLORADO RIVER WATER

1. Fear that there will not be Adequate Water for Mexican and American Lands.
  2. A Letter Urging Mexico to Safeguard Her Rights.
  3. American Interests in Mexico Believe there will be Sufficient Water.
  4. Deleted Portions of the Minutes of the Colorado River Commission Concerning Mexican Claims.
  5. Letters of Secretary of the Interior Albert B. Fall Concerning Mexican Claims to Colorado River Water.
  6. The Asiatic Menace Argument.
1. *Fear that there will not be Adequate Water for Mexican and American Lands.*

"MR. A. P. DAVIS: . . . . In low water season nearly all the water can be used on the Mexico side, and this is the most imminent danger of the Imperial Valley. This can be cured by a high line not in Mexico, and by storage."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 158, 159, March 28, 1922.

"The Boulder Project would provide water in the Lower Basin at all seasons far in excess of present irrigation requirements. This water will pass into Mexico and there be used for irrigation. Once used, its withdrawal for use in the United States will be difficult, if not impossible. As heretofore shown, storage for flood protection will not obviate the need for maintaining levees and bank protection in Mexico, and a treaty to facilitate this work and to limit the quantity of water to be supplied Mexico should be negotiated before the quantity for irrigation in Mexico is increased."—Kelly, Colonel William, Chief Engineer, Federal Power Commission, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, p. 835, August, 1924.

See, also, *Hearings*, H. R. 2903, Part V, pp. 823, 830, March 25, 1924.

"MR. LARUE: Let me explain it this way: Take the definite project which you have in mind, the building of a 605-foot dam at Boulder Canyon to develop 600,000 horsepower. To develop that power continuously throughout the year the water must pass through those wheels. You can not use that full amount of water for irrigation below at the present time, and it will go on into Mexico as a regulated flow 12 months out of the year, and the physical conditions are such that they can put that water to beneficial use in Mexico much more easily and much more quickly than you can in the United States, and 10 or 20 years from now they would probably have over 800,000 acres or 1,000,000 acres under cultivation and would have used the water for 20 years and you could not take it away from them."—*Hearings*, H. R. 2903, Part V, p. 1126, April 11, 1924.

See, also, 50 Proceedings of the American Society of Civil Engineers, No. 9, p. 1469, November, 1924.

"MR. MAXWELL: . . . . Their (American owners of this Mexican land) scheme from the beginning has been to get the Colorado River regulated for power so low down that the water could not be got up out of the river to be used to irrigate land in the United States; and that being so, it would go to Mexico by the law of gravity."—*Hearings*, H. R. 2903, Part V, p. 1347, April 17, 1924.

## 2. *A Letter Urging Mexico to Safeguard Her Rights.*

"March 18, 1912.

"Senor Don Manual Calero,  
Minister de Relaciones, Mexico, D. F.

"Dear Sir: We received your request through Mr. Pizarro Suarez for memorandum concerning our company.

"As the value of the Del Rio grant which our company proposes to take over is entirely contingent upon whether or not it receives an appropriation of water from the Colorado River, as the lands are entirely an absolute desert, having a rainfall not to exceed two and one-half inches per annum, it becomes very evident that we are vitally interested in the position taken by the Mexican Government in its coming negotiations with the United States, with the object in view of settling the rights of the respective countries to the waters of the Colorado River for irrigation purposes, it having been practically acknowledged, at least by the Government of the United States in throwing a dam across the river at Laguna, twelve miles above Yuma, that this stream is more important for irrigation than for navigation, and the rights of the respective countries to navigation should be abandoned in the interest of irrigation. . . .

"Having in mind the experience of lower irrigators on some of the other large rivers similarly situated to the Colorado, it appears extremely important that none of these projects be permitted to proceed except in such a way as will safeguard the interests of lands in Mexico. . . . .

"It is our understanding that the United States is desirous of building all these storage reservoirs over a period of years, as the necessity for impounding more water for irrigation becomes necessary, and is willing to invite your Government to a participation in the erection of these dams, your Government standing its proportionate part of the expense according to the acreage to be irrigated; and it is of this that we particularly wish to urge your acceptance for the following good and sufficient reasons:

"1. Your Government's participation gives you an inalienable vested property right, which, more than anything else, will be the means of recognition of your claim to one-half the waters of the Colorado . . . .

"Your country should certainly strive while the opportunity is given it to secure sufficient water for the irrigation from the Colorado. The fact that storage reservoirs must of necessity be erected in the territory of the United States should certainly not act as a deterrent to your Government, in view of the well-recognized and highly honorable intention and integrity of the United States Government. The proof of this, we believe, is in the fact that did they not desire to

deal honorably with you, they would have no occasion whatever to ask or desire a treaty with you on this water question, simply allowing time and events to take their course, the result of which would be that in a very few years there would be no waters flowing in the Colorado River below the line, consequently, nothing from their point of view that they need ask from your Government in the way of a treaty on the waters of the Colorado, for there would be no waters of the Colorado. The position that they could take in such a case would be that watershed and all the waters of the Colorado originate in the United States and are subject to appropriation under State laws as they flow through the various States; so we respectfully urge your Government to lose no time in negotiating what we believe will be a very just treaty for your country, one altogether in your interest and one entered into through the generous attitude of the United States Government on this question . . . .

“Our company asks for the immediate granting of an appropriation of water on the same estimate of 5.5 acre-feet per acre as the United States appropriation of water for their projects. We ask this with the object and intent of immediately putting this water actually on the land by pumping so as to create an actual diversion of water that can be used by your Government as a basis on which to demand that much water on the ground of actual diversion and use, this being the same right that accrues according to the laws of the United States rights on the Colorado River, even to the extent of diversions to other watersheds other than that belonging to the Colorado River . . . .

“The object of our company will be to subdivide the lands, and we hereby make application to you for a right of colonization within this zone, both foreign and native . . . . We feel sure that with a guaranty of interest from your Government a corporation of landowners should be formed to finance the Mexican end of the proposed conversion and control of waters.

Very respectfully,

Compania de Terrenos el Nuevo Mundo,

By....., President.”

Letter produced by Mr. Maxwell who received a carbon copy from Mr. William B. Raymond, 1512 South Los Angeles Street, Los Angeles, *Hearings*, H. R. 2903, Part VII, pp. 1467-1471, April 19, 1924.

3. *American Interests in Mexico Believe There will be Sufficient Water.*

“ . . . . We will take our chances on getting an ample supply of irrigation water for all our lands, provided storage dams are built with a capacity to hold back all the flood waters of the river, so that no uncontrolled waters shall reach the ocean, and with further stipulation that no water shall be diverted into other watersheds on the American side of the line.”—Chandler, Harry, Editor of the Los Angeles Times, *Letter to Herbert Hoover*, Nov. 8, 1922, *Hearings*, H. R. 2903, Part VII, p. 1573, May 7, 1924.

“MR. RAKER: It shows from your testimony that your company is practically the only party interested in the waters of the Colorado River, is not that true?”

“MR. CHANDLER: Yes, sir.

"MR. RAKER: So your company was the one interested in the question of entering into a treaty, is not that right? (1911)

"MR. CHANDLER: Yes, sir. . . .

"MR. RAKER: And you want a treaty now to be entered into between the United States and Mexico relative to the waters of the Colorado River?

"MR. CHANDLER: As far as I am personally concerned, I would not ask for any treaty."—Chandler, Harry, Editor of the Los Angeles Times, *Letter to Herbert Hoover, Nov. 8, 1922, Hearings, H. R. 2903, Part VII, p. 1595, May 7, 1924.*

#### 4. *Deleted Portions of the Minutes of the Colorado River Commission Concerning Mexican Claims.*

Note: The copy from which the following material is taken was a typewritten copy bearing the initials "H. H." after the O. K., with the initials "A. M. B." in the upper left-hand corner. The notation "corrected, P. L. King," appeared a little further down from the upper left hand corner. These documents were examined in Washington, D. C., February, 1925. In this connection reference may be made to letters included as a part of the bibliography of this book.

"JUDGE SLOAN (Richard E. Sloan, Adviser from Arizona): There being no adjustment by international agreement of that situation, California will be practically compelled to deliver some water to Mexico in order to enjoy her rights.

"CHAIRMAN HOOVER: It comes to this: That if they raise that question as to the present contract that exists down there, if that is brought into discussion anywhere in this compact, we give value to it which we must keep away from with all our might. And therefore we better keep still because the infernal contract they have calls for about 10,000 acre-feet. It is one of those practical things that has to work itself out because they are as busy as bees trying to get away from that, and time will get them away because they can't expand and develop in this basin without getting their canal. And we are in a hole if we even attempt to discuss the situation here.

"JUDGE SLOAN: I think it is wise if it can be done without injustice to Arizona, for instance, or California, in their relation to the Upper States. The question is when half of the burden is to begin; under the terms of the proposed article it can't begin until those rights are established and probably by international agreement.

"CHAIRMAN HOOVER: That is the intention. Because if we established it now, we have established an acknowledgment of that situation, which is pretty difficult. (Lacuna)

"CHAIRMAN HOOVER: Whereas they get a certain amount of water now to Mexico, they can't increase their draft on the Colorado River until they have built the All-American Canal.

"MR. CARPENTER: And get the canals at a higher level.

"CHAIRMAN HOOVER: Yes. . . . You think my statement would be somewhat correct, Mr. Davis, that the Imperial Valley or Mexico cannot extensively increase its acreage without the All-American Canal.

"A. P. DAVIS: That is correct. They can increase about 10 per cent only.

"CHAIRMAN HOOVER: And that therefore the draft on the Colorado River cannot increase without the construction of the canal so that there is a matter of limitation here on the amount of water that is going into that hole?

"A. P. DAVIS: That is true. But it doesn't remove the menace. There are now about 200,000 acres of land—a little less—irrigated in Mexico, and 450,000 in the United States, making 650,000 in all. If Mexico enforces that contract and she is in a physical condition to do it, that would mean 325,000 acres would be irrigated in Mexico, which would be 100,000 acres more than she gets now, and that water would come out of the supply that the river furnishes to the Imperial Valley.

"CHAIRMAN HOOVER: Until such an All-American Canal is built. When it is built then we are free from the Mexican danger?

"ARTHUR P. DAVIS: Yes.

"CHAIRMAN HOOVER: And that it is—there may be a sequence of three events. The first is the present draft against the 7,500,000 feet. The second event, the construction of the All-American Canal which will increase the draft on the river but will put the basin in a position to defend itself from the Mexico draft. The third is an international agreement which fixes that right. The draft on the river in the second event may be an increased draft on the 7,500,000 feet, but it will be exclusively for California and not for Mexican purposes. The third event of the international treaty might settle it.

"JUDGE SLOAN: Doesn't that put a burden on the Imperial Valley so far as the division of water between itself and Mexico is concerned?

"CHAIRMAN HOOVER: Yes, that burden is there now and that doesn't increase their draft on the river.

"MR. CARPENTER: You mean for their own benefits.

"CHAIRMAN HOOVER: Yes, for their own benefits.

"MR. ARTHUR P. DAVIS: They cannot increase the draft because they are taking it all now you mean. That will not be changed by the construction of the All-American Canal. The only things that will make a substantial increase of the draft on the river is storage, then some crops can be raised; grain can be raised; alfalfa can be raised, after that, and in that way it is physically possible to increase the draft. But any draft is subject to diversion in Mexico. It is physically possible to take even more than half, they could take it all if they wanted it.

"CHAIRMAN HOOVER: It is to this very danger point I am referring. The physical situation is there that will solve this problem in itself, ultimately, without our attempting to solve it in a compact, and it is a dangerous thing for us to enter into the question at all.

"JUDGE SLOAN: But it may lead to controversies between Arizona and California—serious controversies.

"CHAIRMAN HOOVER: But that we can't solve.

"JUDGE SLOAN: No, but I am getting to the ratification of this compact again—which may defeat that very thing.

"MR. NORVIEL: May I observe that that was another one of the obstructions I ran up against when I tried to work out this problem and I side-stepped it. We are still leaving the matter in a delicate position which was avoided under my proposition. This now leaves you in a position where the water must be furnished and somebody has to bear the burden, and unless we made some provision for the bearing of the burden, someone will have to suffer.

"CHAIRMAN HOOVER: So far as the river is concerned, the draft can't be increased on the river in the present situation.

"ARTHUR P. DAVIS: The diversion is at the lowest point on the river anyhow. They can't deprive anybody but the Imperial Valley of water.

"MR. CALDWELL: But in that case, the Imperial Valley, of course, would be bearing the burden until the international agreement.

"ARTHUR P. DAVIS: Just as it is now.

"CHAIRMAN HOOVER: Not quite—she is bearing the burden until there is an All-American Canal.

"MR. CALDWELL: There may be an increased draft on the river into the Imperial Valley, notwithstanding the Imperial Valley can't take more now, that is true isn't it? That is, there are more Mexican lands that could take water now which Arizona might construe to be to her detriment and not California's.

"ARTHUR P. DAVIS: They can't take the lands above any diversions that Arizona can utilize that are all in the United States.

"JUDGE SLOAN: Why couldn't the Imperial Valley raise the claim that Arizona is diverting water that she needs. You are permitting Mexico to deplete the flow that you take out of the river. May not they reply—and I am not certain but what it might have some legal force—that in order to enjoy our rights we are compelled to surrender a certain portion of the water.

"MR. NORVIEL: The statement has been made in our meetings on the part of California that they consider themselves in a position now to ask for an injunction against any further development above; and if this form of compact leaves the states within each of the basins to work out their own salvation, California having that view in mind might undertake to stop us from any development in Arizona. Isn't that so, Judge?

"MR. MCKISICK: I hardly think so, Mr. Norviel. As I look at it, the allotment of 7,500,000 acre-feet past Lee's Ferry was intended to make provision to supply the present Mexican use and allow for the development in the southern basin states up to the 7,500,000 acres within the United States. Now this Mexican burden involves—what I think would be the practical effect of the paragraph as submitted, would be to charge the southern basin until such time as there might be a treaty adjustment, with the whole of the Mexican burden of use of the water coming down past Lee's Ferry.

"CHAIRMAN HOOVER: Or alternately until the All-American Canal be built.

"JUDGE SLOAN: There is a contingency that they may increase their consumption, which would raise a controversy between the Valley and Arizona.

"MR. NORVIEL: Then this question comes up. Suppose that neither storage is obtained nor the All-American Canal built for twenty years. You have twenty years before you with the probability of exhausting the river at your head gates every year without any further development. We have some rights equal to yours in the amount of water which shall come down to us, a total of 7,500,000 acre-feet per annum. Suppose we divert our half or our third of that, or some large quantity of it,—that diversion will be above you. We will take it out when we need it which will be at the same time that you need it. We will probably deplete the river one-half of the low flow which is now all needed in the Imperial Valley without any further diversion. Then suppose the Mexican people go on and, having the physical ability, take out the full amount that your contract with them permits, that would leave you in the Imperial Valley during the season when you must have the water, practically without any, wouldn't it.

"MR. MCKISICK: That would be true. But the answer to it is that in the absence of storage there is no security anyhow.

"MR. NORVIEL: But suppose it isn't for twenty years.

"CHAIRMAN HOOVER: Then the Imperial Valley is ruined. We have to face that fact and it is a physical fact which we hoped to meet and remedy to a large degree by this compact.

"MR. CARPENTER: You mean as a result of the compact and not by the compact itself.

"CHAIRMAN HOOVER: Yes. In other words, the Imperial Valley has tied itself up in a bow knot and unless they get storage they are ruined.

"MR. NORVIEL: But without the flood menace, leaving that out of the question, the Imperial Valley is subject to a depletion of the water, at times when they need it most.

"CHAIRMAN HOOVER: Yes, and it can't be remedied because of their own foolish contract. Coming back to the question of this clause. . . .

"The meeting thereupon adjourned to meet at 3 P. M., November 19, 1922."—Colorado River Commission, *Minutes of the Nineteenth Meeting, Second Part*, Bishop's Lodge, Santa Fe, pp. 3-11, passim, Sunday, 10 A. M., Nov. 19, 1922.

Note: The material which follows is a part of twenty consecutive pages of deleted minutes of the twentieth meeting of the Commission. The initials "H. H." would lead one to believe that they were deleted by Mr. Hoover.

"MR. HOOVER: You were not here this morning (addressing Mr. McClure) when we came to this Mexican question. It goes concretely as to whether or not we should attempt to provide here that the two basins should equally bear the present burden of Mexico, and by so doing we give practically a moral substantiation to that contract which will be a very serious national embarrassment some day, and therefore, our debate is whether or not from a practical point

of view we should not omit it, and with due regard to the fact that the burden is borne by the southern basin until such time as there is a remedy. We went over this ground which I think was agreed that at the present time the increased use of water of the Imperial Valley is impossible. Therefore there should be no increment of consumptive use of the southern basin through the development of the Imperial Valley. We think increased consumptive use in the Imperial Valley can only come about under two circumstances, first, the construction of an All-American canal. The moment that takes place the Mexican burden may be rid of so far as the basin, as a whole, is concerned, and there would be an opportunity to say to the Mexicans, 'You can't come in, and if you do you get it by a national treaty.' Therefore we have a physical limitation of the lower basin. It would increase its consumptive use in respect to the Imperial Valley until it is rid of Mexico, because it cannot add physically to its own irrigation until it gets an All-American canal. Therefore my argument was directed to this end, that it is an immaterial thing at the present time—the burden that is now being carried by the southern basin. It is not increasing, and the margin of some million and a half acre-feet, which will be required for the further development of the Imperial Valley cannot fall on the southern basin until you have arrived, in fact, at a riddance of Mexico."—Colorado River Commission, *Minutes of the Twentieth Meeting*, Bishop's Lodge, Santa Fe, pp. 4-5, Sunday, 3:45 P. M., Nov. 19, 1922.

5. *Letters of Secretary of the Interior Albert B. Fall Concerning Mexican Claims to Colorado River Water.*

COPY OF ORIGINAL

“THE SECRETARY OF THE INTERIOR  
Washington

January 12, 1923.

“Hon. Herbert C. Hoover,  
Secretary of Commerce,  
Washington, D. C.

“My dear Mr. Secretary:

“I am herewith handing you copy of a report which I have made to the House Committee on H. R. 13480, the bill to put in effect the Colorado River Compact. I am also handing to the Secretary of State a similar copy of this report.

“My report being requested by the Committee, I felt that it was my duty to refer to the complications regarding Mexico, and have suggested that this article in the bill be not adopted. Of course an amendment could be made to the clause that it would become effective when it was approved by Mexico . . .

“I very much fear that a mere declaration of the fact that navigation shall be subservient to the uses of the waters for other purposes, in view of the Treaty and decisions of our own courts, would render us liable in damages to Mexico at any time before any arbitral tribunal.

“Of course our law can, insofar as we are concerned, repeal a treaty, but our Supreme Court has always recognized the fact that such action might subject us to liability to the other country for violation of the treaty.

“All these matters, as I have mentioned, were taken into consideration prior to the inauguration of the construction of the Elephant Butte projects on the Rio Grande following a Supreme Court decision and a treaty with Mexico entered into . . . .

Very truly yours,

(Signed) Albert B. Fall

Secretary of the Interior.”

“ABF/C

## COPY OF ORIGINAL

“THE SECRETARY OF THE INTERIOR  
Washington

January 12, 1923.

“Hon. Herbert C. Hoover,  
Secretary of Commerce,  
Washington, D. C.

“My dear Mr. Secretary:

“In connection with the Johnson-Swing bill I had suggested an amendment to enable the Interior Department to enter into contracts and agreements with any party whomsoever for the delivery of water. I had in mind that if this power were broadly given, an arrangement could be entered into with the people who have rights in Mexico under the Imperial Valley canal and that the Interior Department could decline to finally approve such contract or agreement until the Mexico de-facto officials entrusted with authority over such matters had approved it and that thus indirectly any claim for damage by the Mexican Government could be avoided by showing that the officials of that Government had entered into a contract for the use of water for irrigation.

“More recently it has been proposed that water users under the Yuma project might dispose of the day to day supply of excess waters from the Colorado River taken out and used in their canal in the United States, to Mexicans just across the line. An agreement of this character was drawn up for my approval and I immediately notified the parties interested in Mexico that it would receive the approval of this Department so soon as it had received the approval of the Mexican officials in charge of like matters on the Mexican side, whether State or National. The parties interested were convinced that such approval would be secured immediately and wired me to that effect. This was two or three months ago and nothing as yet has been heard from them.

Very truly yours,

Albert B. Fall,  
Secretary of the Interior.”

“ABF/C

## 6. *The Asiatic Menace Argument.*

"MR. MAXWELL: . . . . The population of the Imperial Valley itself has passed through a very extraordinary transformation in the past 10 years and there is a very large sprinkling of Japanese there now, and they are importing from Asia droves of workmen who are busy down there in Mexico clearing up and getting those acres of land into shape so they can run water over them and claim they have used the water to irrigate the land."—*Hearings*, H. R. 2903, Part VI, p. 1326, April 17, 1924; *Ibid.*, Part VII, p. 1477, April 19, 1924.

The Washington Star, April 15, 1924, carried a story under a Mexico City date line of April 14, 1924, quoting a statement published by the Mexican Department of the Interior, to the effect that a Mexican financier reported that more than 32,000 Japanese agriculturists with ample means were ready to emigrate from California, where they were residing, because of prohibition against continuing leases or buying lands in the United States. Reference was made to this in the House Committee, as follows:

"THE CHAIRMAN: I wish to read a little clipping here from the Star of Washington, D. C., published day before yesterday along the line of your (Maxwell's) argument that the Japanese are looking toward settlement in America. (Reading) . . . .

"So it looks as though your apprehensions were liable to be realized."—*Hearings*, H. R. 2903, Part VI, p. 1351, April 17, 1924.

"In the Los Angeles Times of October 22, 1922, the public announcement is made that 'when the flow of the Colorado River is equated by means of a dam at Boulder Canyon or elsewhere approximately 2,000,000 acres of highly productive land will be under cultivation,' and 'a large city at the head of the Gulf of California, where the railroad will bring cotton, cotton by-products, alfalfa, and many other products to be transhipped by steamships to Atlantic and Pacific Ports and to the Orient, . . . .'

"In other words, American speculators are planning to annex the Colorado River to Mexico to reclaim over 1,000,000 acres of land now opened by them immediately below the line in Mexico.

"On this great agricultural foundation a new seaport city is to be built at the head of the Gulf of California, connected by rail with Calexico, to take from Los Angeles the trade of the Imperial Valley and the whole Colorado River country.

"The population on these newly reclaimed lands in Mexico will be Asiatic, paying tribute to Mexico, but constituting an Asiatic City and State, maintaining in America, with Asiatic labor, a crushing competition with American agriculture, labor and industry.

"The battle against this scheme to annex the Colorado River to Mexico to create Asiatic competition in America, will be one of the most bitterly contested conflicts ever fought out to the end in this country. It cannot be compromised. There is nothing that can be made the subject of compromise. It may be years before it is settled.

"Flood protection for Imperial and Yuma must be disentangled from it absolutely and completely. That means that flood protection must be provided otherwise than by the Boulder Canyon Power project, behind which the Mexican scheme is now camouflaged and entrenched, and to which the effort has been made to tie the need for flood relief, like a can tied to a dog's tail."—Maxwell, George H., Executive Director of the National Reclamation Association, *Communication to the Colorado River Commission in Session at Bishop's Lodge, Santa Fe, N. M., Colorado River Commission, Minutes of the Fourteenth Meeting, Bishop's Lodge, Santa Fe, pp. 2-3, Monday, 3 P. M., Nov. 13, 1922.*

"A campaign full of sound and fury is being carried on by HARRY CHANDLER of the Los Angeles Times to elect Ed Sample of San Diego to congress from the eleventh district, and John D. Fredericks of Los Angeles to a similar position in the tenth district.

"It is not that Chandler loves Ed Sample and Fredericks so much, but that he loves his JAP-RENTED RANCH in Old Mexico, more. And an absorbing tale lies in this campaign, a tale that has become historic in the annals of Southern California.

"For more than ten years Chandler has furiously fought every public man who has championed what is known as the All-American canal in the Imperial Valley. Chandler himself would be known as All-American, but he doesn't want canals built that are of that type."—*The Public be Served*, Editorial, Los Angeles Illustrated Daily News, Aug. 17, 1924.

"Moreover, the United States is not only intending to clear the Japanese immigrants out of all her territories and bar completely their entry to the country, but there is also an undesirable tendency to obstruct the expansion of Japanese people into various parts of the world.

"Take, for instance, Mexico. Swinging her front gate wide open, she welcomes warmly Japanese immigrants. In spite of this, the United States is watching with extremely nervous concern and with suspicious eyes for whatever move Japan might make in this quarter; Japan is accused without any proper ground. A rumor, like the one that Japan purchased Magdalena Bay in Lower California and was constructing a naval base there, is now too stale to contradict, and there is no need particularly to mention it. When our Asama grounded in Turtle Bay, the Americans claimed that it was done purposely in the course of a search for a naval base. When our naval training ship Yakumo called at that port, they asserted again that it was for supplying arms; and the Senate Committee of the United States made the statement that, according to information, there was a report current that the Carranza Government received from Japan a supply of raw material for a munitions factory, and at the same time, it sought to conclude a closer alliance with Mexico. Although this is unbelievable, the growth of the Japanese influence in Mexico is worthy of notice. See New York cable report, dated June 3rd, 1920."—Tokutomi, Hon. Iichiro, Member of the House of Peers and Editor in Chief of the Kokumin Shimbun, *Japanese-American Relations*, Macmillan, 1922, Translated by Sukeshige Yanagiwara, B. S., M. A., pp. 107-108.

APPENDIX II—EXHIBIT AA

THE QUESTION OF STORAGE IN THE NEGOTIATIONS OF THE COLORADO RIVER COMMISSION

“MR. HOOVER: If the upper states keep a parcel of water, six million acre-feet, ten million, or twenty million, on hand in order to make the guarantee good, it would be assurance to the lower states and no doubt would assist them.

“MR. EMERSON: We don't know just how we will bring about the building of the reservoir.

“MR. CALDWELL: In the first place, Mr. Chairman, it is very probable that such reserve storage above the point, say at Lee's Ferry, would not be necessary for many years, and the reserve might be held at a lower basin reservoir, if it were constructed, and this would answer the same purpose. That would be at the option of the lower states. I don't think that this would rush the development of the river beyond what should be normal. These structures on the river are ultimately going to pay for themselves, or else we have all miscalculated, and this one can be added and finally paid for in the same manner. Some of us seem to have a very great deal of confidence in the paternalism of the Federal Government. It would be a fine thing if the Federal Government would undertake to control the river to such an extent that we could partition the waters between these basins.

“MR. HOOVER: As a matter of physical fact, it doesn't matter whether the storage is in the upper or lower basin.

“MR. CALDWELL: I would say except theoretically. Theoretically the upper basin would not want to be held to passing six million acre-feet past Lee's Ferry when that water ought to be, and was, stored below.

“MR. HOOVER: That was why I made the suggestion of some sort of retro-active plan, based on the amount that had gone down to storage.

“MR. CALDWELL: I think that matter could be settled, but I am wondering whether or not this language should be changed to meet that situation?

“MR. HOOVER: As a matter of physical fact again, the flow at Lee's Ferry, even after deducting the present usage from the upper basin, at its worst period has not been less than ten million feet in any one year.

“MR. EMERSON: Nine million one year.

“MR. HOOVER: Nine million one year, but the worst period of three years was ten million.

“MR. CARPENTER: Ten million average.

“MR. HOOVER: Ten million average. Half of that would be five million. That is after taking care of the present usage in the upper basin.

"MR. CARPENTER: But you also must remember that there will be some additional development above as well as below. This will probably reduce that figure somewhat. In other words, the development and benefits above and below should be equally distributed.

"MR. HOOVER: The total acreage now in sight within a reasonable period would not absorb more than an additional five million feet even in famine year.

"MR. CARPENTER: No. I probably gave you the extreme view. To take four and one half or five million acre-feet as a minimum would be to say to the upper territory, in such a year you shall not irrigate by any new projects but you may pass that amount below. If that were reduced to three or three and a half million, then, it would leave a latitude for the growth above.

"MR. HOOVER: I was taking the estimated acreage in the upper basin with your estimated consumption and the estimated new acreage and it comes out about five million feet, doesn't it, Mr. Davis?

"MR. CARPENTER: I understand.

"MR. A. P. DAVIS: Why no, not that much so far as the estimate in this book is concerned (Indicating Senate Document 142, 67th Congress, 2nd Session, 'Problems of Imperial Valley and Vicinity.') I don't want to unduly put that forward, but that is my opinion, that the future irrigation in the upper basin, as far as I can predict it, is not to exceed two and one-half million acres, which, on a consumptive use of one and one-half acre-feet, which is more, I believe, than they figure up there, results in a use of three and three-quarter million. I think three and three-quarter million is abundance to estimate for future irrigation uses up there, and allow half a million or three-quarter of a million acre-feet to be taken out of the basin additional. That leaves four and one-half total.

"MR. HOOVER: Five million is a pretty liberal estimate?

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: In other words, on the famine flow there is still five million acre-feet left at Lee's Ferry?

"MR. A. P. DAVIS: Yes.

"MR. HOOVER: There probably would be physically that much.

"MR. CARPENTER: Mr. Chairman, we must be a little broad in this matter. We can't partition this river with exactness . . .

"MR. HOOVER: I agree with you. It seems to me that assuming that storage is an issue in the lower river, as it probably will be an issue, the upper states have a right to credit for the water that they may have contributed in excess. Now I am talking against a famine period. If the upper states have created a credit through excess flow, which it is within the power of the southern states to have stored, they should have some credit in the famine years as against that deposit established in the lower basin.

"MR. NORVIEL: That is provided for in that average period.

"MR. HOOVER: What we are trying to get away from is the abstract question of a famine. We are talking about minimum annual flow now,—that is whether because you have no provisions for holding it, your idea of a minimum annual flow will be rightfully tempered by the water they may have sent during some previous period to the lower basin in excess of the ten-year average.

"MR. NORVIEL: Yes, that should be taken into consideration, but there is this contingency in the average of ten years—the cycle of dry years may not be limited to three but may extend over a longer period than that and unless we have a constant supply of some water our necessities may deplete the supply to such an extent as would be disastrous.

"MR. CALDWELL: Mr. Chairman, it seems to me now—I may not be thinking clearly—but it seems to me that reserve storage created will take the place of dependence on average flow. It will meet the requirements better than by calculation of average flow. Cut that out altogether and say that there is enough water in the river. We will hold back a certain amount of it, and in the event that it is held back in reserve you are entitled to six million acre-feet of it anyway. We don't need to talk about average flow as far as I am concerned. I am willing to take a chance on what is in the river, if there is a certain amount of reserve storage for the purpose of supplying the lower basin.

"MR. CARPENTER: Mr. Norviel, in following out your line of thought, you fear that a series of several famine years might work disaster below. Isn't it a fact that a series of several years of famine would have first visited the upper territory and worked its injury there even before it is felt with you? Therefore, isn't the disaster visited upon both areas? In other words, if the assurance is given that the lower states will always have enough water, the upper states must take the hazard. That is visiting the disaster entirely upon the upper states, isn't it?

"MR. NORVIEL: I know this, that if I were very hungry and should have the first chance at the cupboard I should probably feel more secure than if I were the last man.

"MR. CARPENTER: If your arm wasn't long enough to reach the shelves of the cupboard, some of the food would be left."—Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 37-42, Monday, 3 P. M., Nov. 13, 1922.

"MR. EMERSON: Fortunately the development of such projects as the Boulder Canyon Reservoir are desirable in the interests of the upper states almost as much as in the lower states for by the storage of flood water of that stream we will have the use of water in the upper states during the latter part of the irrigation season that would otherwise interfere with priorities on the lower river, so that in the consideration of the protection of water supplies it is very desirable for the construction of a very great conservator of water."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., p. 26, Thursday, 10 A. M., Jan. 26, 1922.

"MR. EMERSON: . . . What I want to determine at this meeting, if we can at this meeting or in the Los Angeles meeting, is what California's idea is of

the compact to be drawn,—if they want us to subscribe to the construction of a great reservoir on the lower river, without some kind of protecting agreement in words that upon ratification will become binding for protection of the upper states.”—Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, p. 247, March 15-17, 1922.

“MR. CARPENTER: You are aware of the fact that if the Boulder Canyon Dam is built to the magnitude contemplated, and after completion the gates were shut down, it would take one year and one-half of the normal flow of the river to fill it once?

“MR. ULLRICH: I realize that.

“MR. CARPENTER: Is not it a fact that it might be used as a ground to assert that the whole of the river had been appropriated to the lower country?

“MR. ULLRICH: Yes sir.”—Colorado River Commission, *Salt Lake City Hearings*, Salt Lake City, pp. 32-43, March 27, 1922.

“MR. EMERSON: One of the keys to a solution of the Colorado River problem, is the construction of a great conservator of water that will catch every drop of excess any time of year, and out of the excess supply the lower river; and it will not be out of the low water season, as it will be if the reservoir is not constructed under the present situation on the river.

“MR. HOOVER: . . . They (the States of the Lower Basin) want to build a reservoir that will take up the water; and the northern states' reply to that as I understand it, is, 'If you build that reservoir and apply the water from the reservoir, you will have increased your claims on the basis of beneficial use; that your development will proceed faster in the south, than ours will in the north, here, and in consequence of your building this reservoir, you will prejudice the position of the people in the north, and you will have to agree now, that it will confer no title—no title to water will be conferred by this beneficial application:' therefore, we arrive at a deadlock. The southern states say: 'All right, if you won't allow us to build a reservoir, we will go into the courts and get an adjudication on the Colorado River,' and the northern states feel that the construction of such a dam may confer, and probably will confer, title through beneficial use, of a large amount of water of the river. Their claim might be maintained, in the courts, but if it was maintained, it would only be after a long battle has been fought and as practical men, dealing with this proposition, what we wish to discover is, whether we could find a method that would satisfy both the southern and the northern states as to their necessities; save the whole jeopardy to the development of the river; and the peril of the people in the Imperial Valley.

“MR. TOBIN: Many people in Colorado have objected to the construction of the Boulder Canyon Dam because it is likely to confer a prior right on the water of the river through beneficial use, and therefore, they have asked the people of the southern states, if they built that dam, to abandon any claim to title to the water. The extra water that may be created through the construction of such a reservoir, they are at liberty to make use of.

"MR. HOOVER: With that explanation, I want to ask whether or not you think the situation of Colorado, would be at all in danger, if the Boulder Dam were constructed without any strings on it?

"MR. TOBIN: I think not. I think we have the same rights to make our defense in court that we have always had. We would retain our water and hold it on the development in the State.

"MR. HOOVER: This is the crux of the entire situation. The people in the south are in great duress; they wish to build a reservoir; the people of the North say; 'You must not construct this reservoir unless you are prepared to waive priority to the water'; and we cannot ask people to go on the land and develop it without the assurance of the water to go with it, and that is the impasse we have arrived at.

"MR. TOBIN: . . . I think this: That this Commission can well afford, with what little Colorado has and the benefit Colorado will be in its storing of water, to let us go ahead, and you do likewise, and we, in place of interfering with you, will be a benefit to you, and I think a reservoir system, if the government has anything to do with it, should be developed, and everyone of the states will be benefited. In many instances twenty to forty per cent of the water will go to the benefit of the lower river. You study the steep areas of the West and you will find that to be true."—Colorado River Commission, *Grand Junction Hearings*, Grand Junction, pp. 49, 80, 83-84, 95-96, March 29, 1922.

"MR. CALDWELL: It seems to me that it is not possible to think of this problem with respect to the partition of the water, and divorce from our thoughts the idea of the control of the river. If this river were under control, or if it flowed uniformly, we could divide it. It doesn't flow uniformly and that is our great difficulty. The only way to bring about anything like a uniform flow is to provide storage in the river. We do know something of the amount in acre-feet that that river will deliver. What we want to do is to divide up that river on the basis of acre-feet between the upper and lower divisions. If you consider it in connection with storage and control, we can do it; if you don't consider it in connection with storage and control, we are going to have difficulty. Averages over years are difficult. We don't know what it is going to be in advance and we should know something about what the aggregate is going to be, and what the annual is going to be to the lower states. I think we can do it by control of the river . . . . The development may take place according to the necessities of the case in either basin, but we can proceed to divide the river as if it were controlled and when the exactions of the compact are imposed upon either basin, control must be had accordingly, so that the compact can be lived up to."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 27-28, Monday, 10 A. M., Nov. 13, 1922.

"MR. HOOVER: . . . . Now, if the pact were made conditional upon the erection of that storage at some point—I am not finding any point—but some point that would serve the lower basin, then it would not seem to be to be necessary to arrive at a minimum annual flow, but that the whole flow could then be—that the one single quantitative figure would be necessary . . . . If the whole settlement were made conditional upon the creation of that storage before the compact became binding, then there would not seem to me any necessity

for a guarantee flow for any one particular year, so that we might, on that line of discussion, avoid the whole necessity of guaranteeing a minimum flow for a whole year, which seems to me to be pretty difficult."—Colorado River Commission, *Minutes of the Fifteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 3-4, Tuesday, 10 a. m., Nov. 14, 1922.

"February 12, 1923.

"Delph E. Carpenter,  
State Capitol,  
Denver, Colo.

"I concur with you and shall so advise Congress in my report that the intent of the Commission in framing the Colorado River Compact was as follows: First, that paragraph B of Article Three means that lower basin may acquire rights under the compact to annual beneficial consumptive use of water in excess of the apportionment in paragraph A of that article by one million acre-feet and no more. There is nothing in the compact to prevent the states of either basin using more water than the amount apportioned under paragraphs A and B of Article Three but such use would be subject to the further apportionment provided for in paragraph F of Article Three and would vest no rights under the present compact. Second, that Article Eight is not intended to authorize, constitute, or result in any apportionment of water to the lower basin beyond that made in paragraphs A and B of Article Three.

"CCS-AC

Herbert Hoover."

Note: Telegram bearing the notation, "Charge Department of Commerce, Appropriation for 'Colorado River Commission.'"

APPENDIX II—EXHIBIT BB

THE PROVISION FOR REAPPORTIONMENT  
IN 1963

“MR. ROSE: I am not willing to subscribe to the plan that we are going to turn this question of the usage of water wild for all time to come. Economic conditions may change. I think we can well afford to subscribe to a period of twenty years in which people may develop their lands and check up at the end of that time and see where we are at, but I realize when we say that we are turning it wild for all time, that we are attempting to speak for a million acres of land which we have no right to speak for, and I cannot subscribe to any plan that we will for all time turn it loose. But as I said the other day, in Phoenix, I am willing that there shall be a period of twenty years in which to check up.

“MR. CARPENTER: And during that time you want all your development made?

“MR. ROSE: No. We have to wait five years while you build the dam, and you can start tomorrow.

“MR. CARPENTER: Just a minute. Where are you going to get the money from?

“MR. ROSE: That is a question. Of course we have a desire, Mr. Carpenter, as a matter of fact, to get it through the Federal Government. However, if we have to give away all of our future homes to get it that way, it is not at all impossible that we may some time in the future help ourselves in some other manner. But if we have got to surrender our birthright forever, and say we will accept a one-eighth water right for all time to come, I don't think we are justified in that.

“MR. CARPENTER: You don't care, on the other hand, to put anything in motion which will set up a contest of speed in grabbing money for the purpose of building in the upper states, in order to compete with you?

“MR. ROSE: No sir. We are not trying to grab everything in sight, in order that you may not develop. We hope you will develop rapidly and we feel certain that any development which you may make in twenty years will relieve us of at least some of the flood waters, which do us great damage during that time. But 'all time' is a long time, and when you waive all your rights for 'all time' you are going far beyond where I can possibly subscribe to it. I am willing to write the compact on the theory that the water of the Colorado River is sufficient for everybody, if your people will accept it, and don't write anything into it that will interfere with existing conditions. But if you do not accept it, we are willing for a period of twenty years to agree not to raise the question.

“MR. DAVIS: . . . I would like to say that there seems to be some foggy ideas concerning the application to the compact of the statement that there is water enough for all lands inside of the basin.

"I have always said, in elaborating that statement, that it would not be wise to make any hard and fast agreement, lasting for all time, on that basis. I think it would be unwise, and that it is beyond the rights of any now living to do that; and the principal reason therefor has been mentioned by Mr. Rose—that is, that the economic conditions may change. And that economic as well as other conditions are liable to change is one important reason why we should apply the principle that no generation has a right to legislate for all time regarding natural resources. Posterity have rights which we have no right to barter away, and we cannot, because they will assert their rights when the time comes, as the many revolutions that the world has recorded proves.

"There should be a time limit, therefore, and when we come to this time limit we come to a difficulty, and that difficulty has been well brought out by the questions propounded by Mr. Emerson and others, concerning what that time limit means."—Colorado River Commission, *Los Angeles Hearing*, Rooms of the Chamber of Commerce, Los Angeles, pp. 88-90, passim, March 20, 1922.

"MR. NORVIEL: Captain Fredericks asked a question that I had in mind, and that I do not quite get your idea on. As I understand it, you propose that in the upper basin priorities shall attach as the waters are applied?

"MR. DAVIS: Yes.

"MR. NORVIEL: And in the lower basin no priorities shall attach in like manner until at the end of fifty years?

"MR. DAVIS: Not as against the upper basin. Their state priorities would stand as they are now.

"MR. NORVIEL: But there would be no recourse as against the upper basin, for fifty years?

"MR. DAVIS: I do not specify fifty years. Whatever period was selected, twenty or forty or fifty or whatever it might be.

"MR. NORVIEL: Then after, or at that time, the rights should be on a parity between the upper and lower users?

"MR. DAVIS: No sir.

"MR. NORVIEL: They should not?

"MR. DAVIS: No. My proposition was to have such rights, as were secured up to that time in the upper basin, prior to those that had been acquired during this period in the lower basin, as of the date of the application of water.

"MR. CARPENTER: You mean preferred rights?

"MR. DAVIS: Yes.

"MR. NORVIEL: As I understand it, after that you would make all rights in the lower basin subservient to the upper basin? In other words the lower basin should then cease, if the needs of the upper basin would take all the water, is that it? The lower basin should cease, and allow the upper basin to proceed?

"MR. DAVIS: Yes. But the subsequent development after that would be subsequent in right to all development that had occurred up to that time.

"MR. NORVIEL: I don't quite get that.

"MR. DAVIS: While the lands in the upper basin would have the preference, at the end of the period the lands in the upper basin would have the preferred right to the lands in the lower basin that had been developed during that period, the lands in the lower basin would have the next right, prior to anything subsequent in either basin, and a new compact could be written concerning future development, my view being that probably very much less than the total flow of the Colorado would then be appropriated. That is what the physical facts convince me.

"MR. NORVIEL: In short it would be this, that for that holiday period, the rights in the upper basin would be preferred and at the end of the holiday period the rights in the lower basin would come in ahead of any further development, either in the lower or the upper basin.

"MR. DAVIS: Yes sir.

"MR. NORVIEL: And then what would you do with the unused water?

"MR. DAVIS: Try and make a new compact, just about like this, but on the basis of such modifications as changed physical conditions or economic conditions might dictate.

"MR. CALDWELL: Your theory is that you would not say at this time what should be done at the end of fifty years?

"MR. DAVIS: Except in the one respect that I would provide in the compact that there should be a reconsideration and reallocation at the time.

"MR. CALDWELL: Let them take care of it?

"MR. DAVIS: Yes sir.

"MR. NORVIEL: You would start with the present vested rights, legally established, all over the basin at this time? Your proposition only deals with the rights to be applied—new rights, from now on?

"MR. DAVIS: Yes. If I may take another moment I will add, that the concrete statement of that proposition may seem somewhat startling to the people of the lower basin. It is, however, far less drastic than what at first blush seems a proper thing to do. If there is enough water for all, the proposition is to take the lid off, and let it go on forever, and assure those in the upper basin that they will not be enjoined, ever. This suggestion does not go so far."—Colorado River Commission, *Los Angeles Hearing*, Rooms of the Chamber of Commerce, Los Angeles, pp. 102-105, March 20, 1922.

"MR. NORVIEL: May I offer a suggestion, that in every form of draft that I have undertaken up to this time I have been unable to get away from the idea that there should be a definite fixed time for it to run. Now, under this form that we are discussing, when its foundation is based upon such indefinite information as we have, it becomes imperative to my mind that the agreement shall be definitely limited in time, whether it be long or short. My notion of it is that that time should be fixed not too far in the future. It should be provided that an extension of this agreement may be made at the time by the people then living and who may be appointed for the purpose of looking over the same

situation that we are now viewing in the light of the further information and the new conditions that will prevail at that time or, instead of extending, they may revise it. And that time should be a time positive, and not contingent upon the call of one or four states."—Colorado River Commission, *Minutes of the Fourteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 14-15, Monday, 3 P. M., Nov. 13, 1922.

"MR. HOOVER: . . . That completes the consideration of the principles except in one particular and that is the determination of a date for the termination of this agreement. On the date question there can be much argument from the point of view that the southern states hope to enter on large development which will require large finances; it would seem to me desirable that the date should be sufficiently extended from that point of view to cover such periods. It would seem to me also there is a physical fact underneath all this, for as I consider the various projects proposed in the upper and lower divisions and the views of the Reclamation Service upon them, I am impressed with the fact that we are not likely to see the completion of even the enumerated projects before 40 to 50 years. We should have a period of complete stability during this time of development. My own inclination, therefore, and I only make that suggestion to both states is that this period should be fairly long.

"MR. SCRUGHAM: In order to get the matter before the Commission I move a period of 50 years be adopted.

"MR. DAVIS: I second it.

"MR. NORVIEL: That is entirely too long as far as I am concerned. How about forty years?

"MR. SCRUGHAM: I am willing to accept 40 years as an amendment.

"MR. CARPENTER: The fifty-year period would tend to equalize construction on the upper river so that there would be less shock on the stream than there would be occasioned by the hasty development by a shorter period.

"MR. SCRUGHAM: What is the argument for a less period?

"MR. NORVIEL: I feel that the lower division may fairly reach the limit that is given them in this amount of water within the period of 40 years at most, and that anything beyond that is a hazard and that the matter should be again taken up at that time.

"MR. HOOVER: I would suggest this thought. If you should succeed before the period of 50 years in utilizing seven and a half million acre-feet, progress will, no doubt, be such that your citizens will continue to develop and will be willing to take the hazard, especially from their knowledge of the upper basin—for they will realize that the water is still going to come down. This will result in what might be called some 'Class B' water rights which have no immediate foundation. When, however, the new commission considers the situation there will be a moral position in favor of this class of rights.

"MR. NORVIEL: We don't know how people will look at matters of that kind at that time but at this time it would be almost impossible to finance a hazardous water right.

"MR. CARPENTER: You will have seventy years recorded flow at that time. You will have a forty or fifty-year record, whatever the term may be, at Lee's Ferry.

"MR. NORVIEL: Yes, but I see no reason for putting it off any longer.

"MR. SCRUGHAM: Stability.

"MR. NORVIEL: I question that stability. When you have used up all you are entitled to as a first-class water right, and then you undertake to do anything beyond that and finance it, that is an unstable situation.

"MR. HOOVER: From January 1, 1923, which will soon be upon us, fifty years would take us to 1973, forty years would take us to 1963.

"MR. NORVIEL: I suggest a forty-year period.

"MR. McCLURE: I move that June 30, 1963, be the period.

"MR. NORVIEL: I second the motion.

"MR. SCRUGHAM: I withdraw my motion.

"MR. HOOVER: We might take a poll on this.

(Thereupon a poll having been taken upon the above and Mr. Caldwell, Mr. Carpenter and Mr. Davis having voted 'no,' the chair declared the motion to have been lost.)

"MR. SCRUGHAM: Now, may I substitute the motion for a fifty-year period?

"MR. HOOVER: Yes, we will take a vote on the fifty-year period, June 30, 1973.

(Thereupon a poll having been taken upon the fifty-year period, the result was as follows: Ayes—Mr. Emerson, Mr. McClure, Mr. Carpenter, Mr. Scrugham, Mr. Davis, Mr. Caldwell. Nays—Mr. Norviel.)

"You might try an even number here, 1970, and see how that will go.

"MR. NORVIEL: I can't think beyond forty years.

"MR. S. B. DAVIS: I think it ought to be settled.

"MR. HOOVER: There is one argument in Mr. Norviel's favor. That is there are a lot of people who will think a shorter period will mean more rapid procedure.

"MR. DAVIS: I move, Mr. Chairman, that a date between the two dates already considered, be determined by the Chair and accepted by the members of the Commission.

"MR. SCRUGHAM: I second the motion.

"MR. CALDWELL: Mr. Chairman, this may be a matter of nothing more than psychology. The State of Arizona has kept that matter of psychology pretty continuously before us. We haven't made much of a point up our way of psychology, and we have conceded the situation in Arizona but for the matter of

the modification of any agreement that we may enter into here. I have discussed with many people the period of fifty years and if fifty years can be agreed upon, it will help the matter through our legislature very much indeed, and inasmuch as there is one negative vote here to that period, perhaps that much might be conceded by Arizona—a matter of five years if it is left to the Chairman.

“MR. NORVIEL: Mr. Chairman, I think we have conceded on every point up to date. I feel we have been borne down at every stage of the game to a minimum and I don't think we should be asked to concede anything more. If we do, we are very liable to go to a point where I myself could not go before my legislature and say I am satisfied with this pact.

“MR. SCRUGHAM: Would you be willing to leave it to the compact committee to recommend some definite date and later discuss it.

“MR. NORVIEL: If they eliminate Mr. Carpenter and Judge Davis.

“MR. HOOVER: I don't feel that there is any difference in either date. So long as it is over forty years and under fifty, it is very immaterial. I think they are worrying about a period that is somewhat immaterial. Mr. Emerson had this in mind when he voted in favor of both periods.

“MR. CARPENTER: I agree with you.

“MR. DAVIS: I suggest my motion be put.

“MR. NORVIEL: What is the motion?

“MR. DAVIS: That the Chair fix the date as between forty or fifty years at some intermediate period. In other words, we are apparently deadlocked. Let's have arbitration.

“MR. SCRUGHAM: I second the motion.

“MR. HOOVER: How about you, Mr. Norviel?

“MR. NORVIEL: I think the Chair has expressed himself too much.

“MR. HOOVER: If left to the Chair he would obviously be obligated to make it 1968, and I wonder if Mr. Norviel wouldn't come to that.

“MR. NORVIEL: Well, I have had in mind thirty years and can't get away from it. But, in order to get together with these high-up people, I have gone up.

“MR. CARPENTER: We have come down from a hundred.

“MR. NORVIEL (addressing Governor Campbell): Do you think we can get by with that, Governor, forty-five years?

“GOVERNOR CAMPBELL: I think so.

“MR. NORVIEL: We will agree on forty-five years.

“MR. HOOVER: Is that agreeable to everybody? (The answer was in the affirmative.) June 30, or 1st?

“MR. DAVIS: Thirtieth.”—Colorado River Commission, *Minutes of the Eighteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 52-57, Nov. 16, 1922.

APPENDIX II—EXHIBIT CC

THE ALL-AMERICAN CANAL

1. The Origin of the Idea.
2. Opponents of the All-American Canal.
3. Those who Favor the All-American Canal.
4. The Practicability of the All-American Canal.

1. *The Origin of the Idea.*

"MR. SWING: There never was any thought of legislation authorizing a big dam until we first came here and urged the all-American canal. Then, having the question raised as to the sufficiency of the water supply, the suggestion was made that it was necessary to have a storage dam, to make sure of the supply for the lands"—*Hearings*, H. R. 2903, Part IV, p. 704, March 19, 1924.

"It was in the year 1911 or 1912—I have forgotten the exact date—that Mr. Rose became interested in a supply of water for the Eastside Mesa . . . . Mr. Rose later conceived the idea of getting his water from Laguna Dam, and in the year 1916 his company made a proposal to the board of directors of Imperial Irrigation district looking to a joint use of their canal for a certain distance and a right of way over their lands in Mexico, where it became necessary for the line of the Laguna Company's canal to diverge from that of the irrigation district. . . .

"This proposal was declined by Imperial Irrigation district, and for that reason, perhaps, the all-American canal idea was developed."—Carberry, Ray S., Chief Engineer of the canal system in Mexico, 1911-1912, *Letter to J. C. Allison, Calexico, California, April 5, 1924, Hearings*, H. R. 2903, Part VIII, pp. 1742-1743, May 8, 1924.

"MR. ALLISON: . . . . The plan for the all-American canal project for Imperial Valley dates back to June of the year 1912, when a group of men in Imperial Valley, headed by Mr. Mark Rose, began the promotion of an enterprise to secure water for their own holdings and for holdings they expected to acquire in the territory known as the Imperial East Side Water Company, and on the lands to which they acquired primary rights under the desert land laws on what is known as the East Side Mesa. The idea originated purely from the selfish motives of these men in their endeavor to secure water for lands which were valueless without such a supply. . . . The coining of the word 'all-American canal' marks the ascending point in the political careers of both Mr. Rose and Mr. Swing and they have used this highly patriotic phrase to further their own ends to the limit."—*Ibid.*, pp. 1649-1652, *passim*.

"The all-American canal proposition is the result of international complications incident to operating the main Imperial Canal through Mexico."—Kelly, Colonel William, Chief Engineer, Federal Power Commission, *Hearings*, H. R. 2903, Part V, p. 829, March 25, 1924.

"Out of all the investigations summarized in Senate Document 142 came the present agreement now in existence and now in process of operation by which the Imperial Irrigation district as the successor in interest of previous organizations agreed to build an All-American Canal and this was done largely through the negotiations when Franklin K. Lane was Secretary of the Interior.

"Also, the Imperial Irrigation district was prevented from building a permanent dam by which it could divert water into its present intake and said district was compelled to purchase a right to connect with the Laguna dam and to pay for that right one million six hundred thousand dollars, the initial payment having been made and all other payments having been made to date by said district; so that finally said district will have paid one million six hundred thousand dollars and will be and now is obligated under written agreement to build an All-American Canal."—Evans, S. C., Executive Director, Boulder Dam Association, 529 Byrne Building, Third Street and Broadway, Los Angeles, *Statement for Walter Troth of the Long Beach Press-Telegram and Christian Science Monitor*, Sept. 30, 1925.

"On October 23, 1918, an agreement was entered into between the Secretary of the Interior and the Imperial Irrigation district to provide for extension of the Imperial Canal to Laguna Dam and committing the Imperial Irrigation district to the construction of an all-American canal. This agreement was ratified by the voters of the Imperial Irrigation district on January 21, 1919, prior to completion of report by the all-American canal board by a vote of 2,535 in favor and 922 against. Payments have been made by the Imperial District in accordance with the agreement, so that the agreement is still in force, but on account of financial difficulties and the possibility that the United States might undertake the project, no construction work has been done."—Kelly, Colonel William, Chief Engineer, Federal Power Commission, *Hearings*, H. R. 2903, Part V, pp. 828-829, March 25, 1924.

## 2. *Opponents of the All-American Canal.*

"Analysis of the all-American canal project, as proposed in the Swing-Johnson bill, shows that it may be considered as three separate propositions which have different degrees of urgency, as follows:

"1. Connection with Laguna Dam so that water for lands on the west side of the river may be diverted at that point instead of at the present Rockwood heading.

"2. Serving lands in Imperial Irrigation district through a canal entirely on the United States side of the international boundary in order to avoid complications that have arisen in the past over operation and maintenance of a canal in Mexico.

"3. Serving lands on the East Side Mesa and in Coachella Valley which are too high to be served by the present canal system."—*Ibid.*, p. 829.

Colonel William Kelly, Chief Engineer of the Federal Power Commission, stated that data available are not sufficient to determine whether or not the cost of an All-American Canal would justify its construction.—*Ibid.*

"J. C. ALLISON: . . . Colonel Kelly's position with regard to the building of the connection between Laguna Dam and the Imperial Valley Canal at the International Boundary Line, is shared by the speaker. However, the so-called All-American Canal, designed to replace the main canal of Imperial Valley now running through Mexico, should not be built on any of the hypotheses set forth by its sponsors for the following reasons: . . . 4. If at all a necessity, it must be a political necessity, and this political necessity is set up by its advocates as the principal reason for its construction. The fact of the present canal being in Mexico is the main reason advocated for the building of a duplicate canal on American territory. The principle, however, is unsound because, as will be shown, Mexico as a water customer is of strict financial value to the American users of water, and, as an ally and neighbor in the use of water, is of great political value in the project. As a matter of fact the new project does not in any sense relieve the owners of the present Mexican Canal from maintaining their flood and irrigation works."—50 *Proceedings of the American Society of Civil Engineers*, No. 9, p. 1441, Nov., 1924.

"MR. LITTLE: Well, what effect would the building of the all-American canal have, if any, on the present canal through Mexican territory?

"MR. WEST: In our judgment, it is going to be necessary to continue to maintain the protective works on the Mexican side. . . . The Imperial Valley will still be exposed to flood waters from the Gila River, from which source the highest floods on record have come."—*Hearings*, H. R. 2903, Part IV, p. 619, 618, March 19, 1924.

"MR. LITTLE: . . . In view of your broad business experience, I would like to have your judgment as to what this \$100 an acre land would be worth after the all-American canal was built and put in operation? How much an acre, in your judgment, would it then be worth?

"MR. WEST: I do not think it would be worth as much as it is now. . . .

"MR. WEST: That canal has not anything to do with the producing water; it only brings water into the valley. . . .

"MR. WEST: . . . But today . . . that present canal will take all the water that the present irrigation district will use. Now, I am not talking about bringing a lot more land in, over and above that; but I am saying that the present canal will carry 7,000 or 8,000 second-feet of water into the valley; and that is more water than the irrigation district can use."—*Ibid.*, pp. 649-651, *passim*.

"MR. SINNOTT: Why do you consider the all-American canal impracticable?

"MR. CHANDLER: I think, in the first place, that it is impracticable from an economic standpoint. Its cost would . . . make the cultivation of the land impossible—impracticable . . . I am only opposed to the all-American canal, because I have considerable land holdings on the American side . . . and we have figured that the all-American canal would put such a burden on that land as to make the land valueless for farming."—*Hearings*, H. R. 2903, Part VII, p. 1567, May 7, 1924.

"MR. MEANS: I am of the opinion that the all-American canal is a project not worth what it will cost and at present I would not recommend its construction, for the following reasons:

"First. It is not needed. The main reason for its construction is to avoid the carriage of water through Mexico. So far as I can learn, there has never been any serious difficulty in handling water through Mexico. At the most the troubles were trivial and regarded as annoying.

"Second. The construction of an all-American canal would not affect the rights of Mexican lands to water—I mean the legal right. There has been no definition of those rights between the two nations; but it is certain that lands in Mexico are entitled to irrigation water.

"Third. The all-American canal would not affect the flood danger. The Imperial Valley will be required to maintain at all times levees in Mexico to protect from floods. With both Gila and Colorado River reservoirs built, the flood will amount to 50,000 to 75,000 second-feet, depending upon the size of these reservoirs; this will mean that levees must be maintained at all times. All that the reservoirs can ever do will be to lessen the flood danger; they will never remove it entirely.

"Fourth. The operation of the all-American canal will be hazardous on account of its long length . . . It will be especially hazardous as far as the Coachella Valley.

"Fifth. Even if the all-American canal were built, it would be necessary to maintain the present canal line as a standby to be used in case of emergency. My authority for that statement is a report by Mr. Grunsky.

"Sixth. The all-American canal irrigating the mesa east of Imperial Valley introduces a seepage and drainage menace to the lands lying under that bench.

"Seventh. The cost of the construction of the all-American canal will add so much to the debts of the district that the loaning value of the lands will be very much reduced. (Present price of good ranch land—\$100 per acre. Bank loan, at present—\$40 per acre.) It is a heavy debt, with assurance of increased annual cost and with no benefit but the removal of trivial annoyances in Mexico.

"Eighth. The cost of the all-American canal will add very much to the already heavy tax burdens of the Imperial district farmers. At present the District taxes are an average of about \$5 per acre of irrigable land. County and State taxes average about \$3 per hundred dollars valuation, or about \$2 per acre. The taxes now imposed are about \$7 per acre with the prospects of increase. With the increased maintenance cost imposed by the all-American canal, it is probable that the annual tax on average land in the district will exceed \$10 per acre."—*Hearings*, H. R. 2903, Part IV, pp. 681-684, passim, March 19, 1925.

**"TO OWNERS OF REAL ESTATE IN IMPERIAL IRRIGATION DISTRICT!"**

**"WHO WILL DECIDE WHETHER AN ALL-AMERICAN CANAL SHALL BE BUILT?"**

"You are told that provisions for an All-American Canal as embodied in H. R. 2903, known as the Swing-Johnson Bill, do not make it obligatory for you to accept them. You are told that before an All-American Canal can be built, the question will be submitted to the voters who are not at that time residents of Imperial Valley.

“Out of the total number of legal voters registered up to July 26th, 1924, all qualified to vote at Primary, General, and Special Elections, a small percentage are owners of land in Imperial County, others are owners of town property, and the remainder own neither land nor lots within the boundaries of Imperial Irrigation District.

“Under such conditions, no matter how greatly you may be opposed to burdening yourself, your heirs, or assigns, with an All-American Canal, at a cost to you of \$52.20 per acre or over, you would be powerless to prevent a majority vote in favor of building the canal. Would not day-laborers, mechanics, and practically all non-tax-payers vote, and urge others to vote, for a project which would cause forty millions of dollars to be expended in this county, as such work, which must of necessity put money into their pockets, will, however, at the same time, take it out of yours? Although it is true that the extraction process from your pocket would spread over a period of twenty years or more, during that process of extraction, remember that you would have to pay approximately an additional three dollars per acre each year as an interest charge on money advanced by the Government for the building of an All-American Canal.

“ARE YOU WILLING TO ASSUME SUCH A BURDEN?”—Mimeographed Sheet placed with Pamphlet, *Imperial Valley's Most Essential Need is a Flood Control and Storage Dam in the Colorado River; The Proposed All-American Canal is a Non-Essential; A Statement of Facts, for the Property Owners of Imperial Irrigation District and Others Interested*, Published and Distributed by Property Owners and Taxpayers of Imperial County.

### 3. *Those Who Favor the All-American Canal.*

“SENATOR ASHURST: Who pays the expenses of maintaining the ditch or the canal in Mexico?

“MR. WEBSTER: You mean the main canal?

“SENATOR ASHURST: Yes.

“MR. WEBSTER: We do.

“SENATOR ASHURST: You Americans in the United States must pay for the maintenance of the ditch in Mexico?

“MR. WEBSTER: Absolutely. We also keep up the levee system.

“SENATOR JOHNSON of California: The entire reclamation in Mexico is paid by Americans in the Imperial Valley, is it not?

“MR. WEBSTER: Yes, sir. One of the witnesses who appeared before the House Committee two years ago went into it and dug up the statistics, and we have done about \$12,000,000 worth of work on the levees across the line.

“SENATOR SHORTRIDGE: What is the source of the revenue—

“MR. WEBSTER (interposing): Levying taxes on the land and the sale of water.”—*Hearings*, S. 727, Part I, p. 168, Dec. 23, 1924.

“MR. MEANS: The reason for the all-American canal is to by-pass the Mexican lands and void the contract for division of water by the construction of a canal north of the boundary line.

"An old contract is in existence, which provides that the Mexican lands shall use water up to not exceeding one-half of the quantity of the water in the canal."—*Hearings*, H. R. 2903, Part IV, p. 676, March 19, 1924.

"MR. CHILDERS: . . . Suppose numerous farmers increase their acreage (in Mexico) year by year, our only recourse is through the Government at Mexico City, and upon its failure to act, the ultimate recourse is through force of arms. The situation can not be controlled physically, for by shutting down the gates, Imperial Valley is the first to dry up. Mexico has first access to the canals. If the canal is built wholly within the United States, then treaty regulation can be enforced simply by control of the gates during certain seasons of the year.

"Either one of these considerations would seem to be sufficient justification for the United States to be deeply interested in removing this canal system from the Republic of Mexico, if for no other reason than for the sake of international harmony."—*Hearings*, S. 727, Part I, p. 151, Dec. 23, 1924.

Dr. Elwood Mead, Commissioner of the Bureau of Reclamation, is authority for the statement that the cost of the All-American canal, \$30,000,000, a cost of something less than \$50 per acre for the 650,000 acres, would not trouble the Imperial Valley at all.—*Hearings*, S. 727, Part II, p. 239, Jan. 23, 1925. This is also the point of view of Mr. Q. C. Webster, farmer, President of the Imperial County Farm Bureau, resident of Brawley, California.—*Ibid.*, Part I, pp. 166-167, Dec. 23, 1924.

Secretary Work of the Interior Department favors a plan of Colorado River development which will include an All-American canal starting at Laguna Dam and delivering water to the Imperial and Coachella Valley canals.—67 *Congressional Record*, No. 25, p. 1790, Sixty-Ninth Congress, First Session, Washington, Friday, Jan. 15, 1926.

Mr. Weymouth, Chief Engineer of the Reclamation Service, is of the opinion that the All-American canal is feasible.—*Hearings*, H. R. 2903, Part IV, p. 733, March 20, 1924.

#### 4. *The Practicability of the All-American Canal.*

"J. C. ALLISON: . . . Along this same approximate route is constructed the power line of the Southern Sierras Power Company: its experience alone in maintaining twelve miles of line should be enough to weaken the determination of the most enthusiastic supporters of an All-American Canal. One day thirty-foot power poles are covered to the wires with sand and the next day undermined by a twenty-four hour sand storm."—50 *Proceedings of the American Society of Civil Engineers*, No. 9, Nov. 1924.

"MR. MEANS: . . . Dredging could be done to keep it out. It is not an insurmountable problem; but it is an expense to the district. I believe that it will cost more to take water out that way than in the present system."—*Hearings*, H. R. 2903, Part IV, p. 680, March 19, 1924.

"The 1920 all-American canal report was made by a board constituted by the appointment of one man by the Imperial irrigation district to represent that

district; one man appointed to represent the Reclamation Service; and one appointed to represent the University of California, who was mutually agreed upon by the two parties; and the three men were Mr. C. E. Grunsky, who is now the president of the American Society of Civil Engineers, and was formerly a member of the Panama Canal Commission, and has a very high standing all over the country and in the world; Dr. Elwood Mead, one of the foremost irrigation engineers of the country, and now commissioner in charge of the United States Reclamation Service, who has had very wide experience on irrigation work in various parts of the world; the other is W. W. Schlecht, who was at that time project manager of the Yuma project, and is experienced in construction work."—*Hearings*, H. R. 2903, Part VII, p. 1437, April 19, 1924.

The All-American Canal Report states that it is impossible to say how much sand will blow into an open canal on the ten-mile stretch in which the location of the canal will be through a region of shifting sand.—*Hearings*, S. 727, Part II, pp. 244-298, 259, Jan. 23, 1925.

Mr. A. P. Davis declares that the control of shifting sand in an All-American Canal would be less difficult than in the North Platte Canal which the Reclamation Service has for many years maintained in Nebraska where similar conditions of sand exist, where the canal is smaller, and where the water flows with low velocity. He also cited the Suez Canal where sprinkling and irrigating machines, and the planting of trees, keep the sand from blowing.—*Hearings*, S. 727, Part I, pp. 179-180, Dec. 23, 1924. Similarly, Mr. Mark Rose states that bunches of grass prevent the sand from shifting.—*Ibid.*, pp. 177-178.



APPENDIX II—EXHIBIT DD

CODE TELEGRAMS

“Denver, Colo.,  
March 14, 1923.

“W. C. Mullendore,  
Department of Commerce,  
Washington, D. C.

“Have just had very satisfactory interview with Coal. Stop He is for Delaware Florida and will use every influence Stop Nothing definite will be done for several days as it will be necessary to clean up orange and tiger.

Stetson.”

“Washington, D. C.,  
March 15, 1923.

“C. C. Stetson,  
Hotel Metropole, Denver.

“Elephant has been in touch with his boss relative activities crabapples among tigers and his answer today that he hopes to be able to relieve situation immediately. Also advised that tulip making no progress proposed meeting Santa Barbara as he is playing practically lone hand.

Mullendore.”

The following is an undated day-letter in lead pencil:

“William Mullendore,  
Department of Commerce,  
Washington, D. C.

“Sending later today proposal Georgias Stop Believe strong open wire from Silver to Goldust stating strong likelihood prune would place contrary Georgias with result Georgetown would refuse give Florida and basing opinion on result conversations with Georgetown leaders at time question of getting Georgetown Florida of Camel was discussed would be useful Stop Would like advise in another telgram if Goldust can tell Iron that Silver would be loath urge Florida on Georgetown if slightest variance in form of Florida in fact might take contrary position Stop General sentiment here strongly in favor Camel but Michigan members Alexandria under guidance Orange and Grapefruit want Georgia as per telegram feeling camel language ambiguous Stop Have consulted Pansy and his immediate associates and Trilium Stop They all for Camel as realize possibility repetition Pathfinder but Board members showing extreme caution as per last Spring notably Tobin due largely lack understanding Stop Goldust has argued unfavorable Georgetown Florida and Prune Florida if Georgia insisted on and has brought out crabapple with considerable effect especially as case crabapple activities cropped out here yesterday as working among tiger Stop Iron doing all possible but inclined to go slow until can persuade opponents to

abandon Georgias Stop This due gentlemans agreement not take definite steps for Delaware Florida until Orange and Tiger agree Stop This agreement made when Pansy and immediate associates reported Camel Delaware Stop Making every effort get agreement have Georgias placed in legislative journal Stop Perhaps Violet could furnish useful argument that courts would go to journal in for Alexandrias and Richmond Georgia at time Florida Delaware any form or in any part Camel Stop Goldust seeing Coal today Stop Cannot steps be taken Geneva to call off crabapple here Stop Believe this very important Stop Southern Geneva own railways among tiger and emissary just returned from Geneva No important publicity here as hoped get Florida quietly If no success shortly method will change.

Stetson."

APPENDIX II—EXHIBIT EE

OPPOSITION BETWEEN CITIES  
AND COUNTRY AREAS

1. The Los Angeles—Owens Valley Controversy.
2. Difficulties Met in Securing Cooperation Between Southern California Cities and Towns.
3. Preferences to Municipalities under Federal Water Power Act of 1920 Will Benefit Only Large Cities.

1. *The Los Angeles-Owens Valley Controversy.*

*"Raiders Divert Los Angeles Water in Feud Over Rights. Failure of City and Owens Valley Men to Settle Long Controversy Leads to Use of Force.*

"BISHOP, Calif., Nov. 17.—Los Angeles aqueduct waste gates, near Lone Pine were captured yesterday by a small army of Owens Valley men, who brushed aside city employees on guard and diverted Los Angeles' chief source of water supply into the Owens river.

"Determined to keep the water of the aqueduct flowing through the spillway until Los Angeles settled its long-standing water feud with valley ranchers in a manner acceptable to them, the raiders defied aqueduct authorities and the sheriff of Inyo County to drive them out. The raid today had settled into an organized occupation backed by the efforts of several hundred men and women.

*"Men Stand Guard.*

"Sixty men left on guard at the waste gates last night will be relieved by others today, Harry Glasscock, editor of the Owens Valley Herald, and spokesman for the ranchers told the Associated Press, and thereafter for as long as necessary the guard will be maintained by relieving with fresh men every 24 hours. Should 60 men be not enough, the force would be increased, he said. Yesterday 100 men held the gates.

"Food for the aqueduct guard, Glasscock said, will be prepared by women in Bishop and sent to the water gates, 50 miles away, by motor trucks. Two trucks of food and supplies were sent last night.

*"Other Supplies Adequate.*

"Los Angeles' water supply is assured for 90 days by water impounded at several sites along the aqueduct south of here. Inyo County authorities refrained from action pending the outcome of an appeal for state troops sent to Friend W. Richardson, Governor, by Sheriff Collins, who urged immediate use of troops as the only possible way of dispersing the raiders.

"The ranchers maintain that the aqueduct has robbed their farms of water necessary for irrigation.

"In recent months several committees from Los Angeles have journeyed to Owens Valley and conferred with ranchers and business men in an effort to reach an agreement, but to date no proposal put forward by the city had been definitely accepted though city officials announced that progress was being made.

*"California Controversy over Los Angeles Water Supply of Long Standing.*

"LOS ANGELES, Nov. 10.—(Staff Correspondence)—Sincere efforts to effect a just settlement of long-standing controversies concerning the water rights of this city in Owens River Valley, some 250 miles north of here, where its principal domestic water supply is at present obtained, have been inaugurated by interests on both sides of the argument, and promise to relieve a situation which has at times grown tense to the point of lawlessness within the last six months.

"Threats, abductions of the city's agents and even bombing of the aqueduct, resulting from a feeling of rebellion in the valley against the city's methods in purchasing tracts of water-bearing land in the interests of the city's water supply rather than of agriculture, are expected to be stopped and peaceful conditions restored as a result of negotiations recently instituted by the Board of Public Service Commissioners here, in which the co-operation of many people in the valley has been promised.

"A special committee has been named to draw up a permanent agreement between the valley and the city. Upon this committee are W. B. Mathews, special counsel for the Department of Public Service, H. A. Van Norman, Los Angeles City Engineer, and Louis C. Hill of Los Angeles and Charles H. Lee of San Francisco, consulting engineers of wide experience in studying water problems in this part of the country.

*"Long-Standing Controversy.*

"Many and varied have been the contributing causes and interests in the long struggle between the ranchers of the valley and the city officials of Los Angeles regarding the furnishing of water to the city's aqueduct. On May 6 the fact that a misunderstanding between these factions was assuming a serious aspect was brought forcibly to all concerned with the report that the aqueduct had been dynamited south of Independence by ranchers as a 'threat' to city agents to cease their activities in buying up land in the valley 'piecemeal.' According to Inyo County residents, the dynamiting had been planned deliberately as a warning, and shortly afterwards city agents were 'ordered' from the county and one resident, accused of being friendly to the city was kidnaped by a mob while eating at a restaurant and made to promise he would leave.

"Startled into a realization of a need for action, both private and official investigations of the situation were made by those who disinterestedly sought to settle the entire affair in a manner just to all concerned. It was seen quickly that the principal cause of friction hinged about the charge that the city was 'drying up the valley', spoiling it for agricultural purposes by acquiring land to such an extent that farmers were becoming isolated and markets being destroyed, with a resultant hardship coming to the towns of the district. City officials replied to this charge that it was necessary for the city to have water, and that its only available source was Owens River Valley, until an aqueduct to the Colorado River could be completed. They further argued that their purchases were legal, honorable, and made in an open manner, and that the real cause of discontentment among the ranchers of the valley was that they wished to sell their land at extremely high prices, to which the city would not consent.

*“Land Values Involved.*

“It is considered but natural here that practically all interests in the valley should oppose the efforts of the city to purchase additional land and hold it for the sole purpose of producing water. The banks of the vicinity, holding many mortgages upon the land, see the value of land lessened which was built up by a community of prosperity when farm after farm becomes idle and ‘water-bearing’ rather than crop producing. Merchants in the cities see farmers move out of the district, and their trade almost daily lessen, and promoters see their plans for high prices made impossible through the city’s policy of direct dealing with individual owners. More than one official of the Department of Public Service interviewed in this regard by a representative of The Christian Science Monitor, while declining to be quoted as making direct accusations, indicated that financial interests within the city itself were seeking to use the farmers of the valley for their own purposes, and were deliberately arousing them against the city in order to force a pooling of land and a high price from the municipal government.

“An impartial private investigator, who visited all portions of the district affected shortly after the dynamiting episode, reached the following conclusion, after a careful summing up of the entire condition:

“‘Antagonistic sentiment against Los Angeles would not be so strong around Bishop if the valley press were not closed to a presentation of the benefits resulting from the city’s activities. Some way should be found to impress upon the residents the following facts:

“‘The Southern Pacific’s broad-gauge line from Mojave into the valley was built because of the city’s contract with the road covering the hauling of materials for the building of the aqueduct. If it had not been for the aqueduct the valley would probably still be closed against the Los Angeles Market so far as direct rail transportation is concerned.

*“City Aids Tax Plan.*

“‘The city has been generous in its dealings with the valley as a political unit. Shortly after Los Angeles began operations there it recognized the injustice of the state constitution’s inhibitions, in this instance, which prevented municipalities from paying taxes. Through the efforts of Mr. Mathews as special counsel for the Board of Public Service Commissioners, a constitutional amendment was adopted changing this. Los Angeles today pays taxes on 110,000 acres in Inyo County, a little less than half the total of 260,926 acres on the county’s tax rolls outside of cities and towns.

“‘The city’s contribution to the support of local government has mounted from \$13,531.60 in 1910 to around \$70,000, or about a quarter of the local taxes paid, in 1924.

“‘Loose use of the phrase, “drying up the valley”, has led to a popular misconception of the real condition in the farming areas. There is no shortage of water for the farms still unpurchased. On the contrary, there is what might be generally regarded as wasteful use of water in many sections of the county. Excessive irrigation has water-logged lands and, in the absence of pumping,

rendered them unproductive except as grazing areas. The city is in a position to help the ranchers out of this difficulty through regulated pumping, if their co-operation can be obtained.

*“Trade Increase Asserted.*

“In the lower end of the valley an increase in population has followed the city’s activities. Cheap light and power have been supplied to Lone Pine and Independence. The building of the aqueduct and the advertising and opening up of the valley that followed have been factors in increasing tourist trade with the retail establishments in the towns. It has been estimated that during the summer season the number of automobiles daily entering the county from the south has been more than 400—a noticeably stimulating effect on the business of a community whose stable population totals around 8000. There is no doubt benefits along this line will increase as highways are improved and Los Angeles and southern California become better acquainted with the marvelous beauties of this country of the snow-capped High Sierras.’

“What the conclusion of the committee appointed to formulate a permanent policy for Los Angeles will be cannot be foretold; but that they are working with all sincerity of effort and with some co-operation from those living in the valley there can be no doubt. In the meantime many valley spokesmen continue to contend that the fair way out of the feud is for the city of Los Angeles to buy all remaining water-bearing lands in the valley in one block including in the price a sum indemnifying the towns for their loss of business and property values.”—Christian Science Monitor, Nov. 17, 1924.

*“Aqueduct Raiders Consider Arbitrating. Assure Prosecutor They Would Not Resist Troops, So He Rushes to Governor to Get Some.*

“LOS ANGELES, Nov. 19.—Peace moves to bring about a truce over the aqueduct were set afoot today. The efforts to end the tension, and possibly of armed conflict, resulting from the seizure of the Alabama waste gates of the aqueduct by Owens Valley ranchers, however, were checkmated to some extent by the action of Judge Dehy, of the Inyo County Superior Court, late this afternoon in disqualifying himself to sit in the case.

“Judge Dehy’s order in disqualifying himself also vacated all orders and injunctions issued by him against the band of raiders in possession of the waste gates.

“The peace move came from District Attorney Hession. He obtained the assurance of the band of raiders at the waste gates that they would disband immediately upon the arrival of State troops. Hession then set out for Sacramento to make a personal appeal to Governor Richardson for a skeleton force of guardsmen at the waste gates.

“Soon afterward the Inyo County Board of Supervisors, in session at Independence, followed his lead. They called into conference Karl Keough, President of the Owens Valley Ditch Company, and a recognized leader among the ranchers, and asked him if a resolution for a board of arbitration in the aqueduct problem would cause the ranchers to withdraw. Mr. Keough refused to answer the board’s query until he had conferred with W. W. Watterson, banker, of Bishop, and other representatives of the ranchers.

"The County Supervisors of Inyo County offered to have either Senator Hiram Johnson appoint an arbitration committee or to have the State Railroad Commission sit as an arbitration body in the case if the ranchers and businessmen would agree to disperse and lay their case before such an arbitration body."—New York Times, Nov. 20, 1924.

*"Mediation Offer Made in Fight Over Aqueduct. Decision of Three Judges Proposed by Clearinghouse President; Ranchers Return Home.*

"Mediation of the Owens River controversy by a court of three judges selected from the courts in this State was the recommendation made yesterday by J. A. Graves, president of the Farmers' and Merchants' National Bank, and president of the Clearinghouse Association of this city. Mr. Graves, himself a lawyer, made this suggestion personally, but it bore unusual weight because of the intervention, already begun, of the Clearinghouse Association, whose promise to use its good offices for a settlement of the controversy led the ranchers to close the flood gates of the Los Angeles Aqueduct they had opened."—Los Angeles Times, Nov. 21, 1924.

*"Five-Million Reparations Asked By Owens Valley. Proposal of Service Board to be Accepted by Ranchers if Indemnity is Given.*

"Owens Valley ranchers presented through their spokesman, W. W. Watterson, their willingness yesterday afternoon to accept the Public Service Commission's proposal to leave 30,000 acres of land with a guaranteed water supply in the valley, with a binding proviso that reparations of \$5,300,000 be paid to repair the damage already inflicted upon the valley towns by lack of water.

"The offer was contained in an official communication from the Owens Valley ranchers to the Los Angeles Clearinghouse Association, which is acting as a mediator between the ranchers and the city of Los Angeles. It also contained another proposition, expressing the will of the Owens Valley people, which asks that a price of \$12,000,000 be paid for all remaining farm lands in the valley in the event that the reparation plan is turned down."—Los Angeles Times, Dec. 3, 1924.

*"Board Rejects Valley Offers. Public Service Commission Denies Harassment. Declares Sum Asked More Than Double Value. Says City's Plan Will Aid Owens Prosperity.*

"'Utterly impossible' is the reply of the Board of Public Service Commissioners returned yesterday, to purchase and 'reparations' proposals suggested by W. W. Watterson, president of the Owens Valley Irrigation District, to the Los Angeles Clearinghouse Association, which he has invited to mediate between the city and the people of the valley.

"The Watterson offer was submitted on November 29. It gave the city a choice of buying out virtually the entire valley for \$12,000,000 or, as first proposed by the city, of leaving approximately 30,000 acres in private ownership and under ample irrigation—with the proviso, however, that in such case \$5,500,000 in 'reparations' be paid for alleged depreciation in land values said to have been worked by the city's 'checker board' policy by piecemeal purchases from individual owners. In case of outright purchase, the price set would include the 'reparations'.

"The commissioners' answer asserts that they are legally unable, even were they disposed, to make reparations which they do not admit are due, that the purchase price is highly inflated and that, for these and other reasons, arbitration on the basis of the Watterson proposals 'cannot be entertained'.

"Both general and specific denial is made that the city has pursued a policy of stealthy diversion, legal harassment, intrigue and studied depreciation of land values in its dealings with the people of the valley. On the contrary, the commissioners affirm that they have been frank, fair and generous."—Los Angeles Times, Jan. 10, 1925.

*"State Will Get Owens Water Row. Committee from Valley Leaves to Give Their Side of Case to Legislature.*

"BISHOP, March 24.—The first step in offering a water feud of many years' standing between the ranchers of Owens Valley and the city of Los Angeles to the consideration of the State Legislature was made here today when a reparations committee left for Sacramento to register their asserted grievances with the State.

"The committee, headed by Dist. Atty. Jess Hession, was armed with photographs of portions of the valley, which they assert have been reduced to arid wastes by the actions of the city of Los Angeles in procuring water rights to feed an aqueduct which supplies the city—225 miles southwestward.

"Hession indicated that the Legislature will be asked to launch an inquiry into the water feud between the two localities, with a view to reimbursing towns of the valley, which he declared had suffered in reduction of values as result of the controversy."—Los Angeles Times, March 25, 1925.

*"Author Amends Owens Valley's Reparation Bill.*

"SACRAMENTO, April 7.—With a view to making Los Angeles city liable for asserted damages to property in Owens Valley through the appropriation of water for the city's water supply, Senator J. M. Inman today amended his Owens Valley reparation bill introduced at the behest of the farmers of the valley.

"As originally presented the Inman bill was designed to enable the city of Los Angeles to pay any claim she determined might be due the property owners of Owens Valley, but as amended the bill would make a municipal corporation liable for all damages suffered by property owners due to the appropriation of water for the corporation's use.

"Another section of the bill provides that any municipal corporation which has heretofore, or is now drawing water from any watershed and by reason thereof has heretofore caused damage to property within the watershed, 'is authorized and empowered to pay, compromise or arbitrate any damage or claim for damages,' claimed by any person, firm or corporation."—Los Angeles Times, April 8, 1925.

## 2. *Difficulties Met in Securing Cooperation Between Southern California Cities and Towns.*

"There have been and now are on the statute books of this state general laws under which Los Angeles and other cities may form a district to bring

water from the Colorado. But these acts would all give to Los Angeles, because of its great population and assessed valuation, a preponderant voice in the government of the district when formed. It was to meet this situation and to give to the smaller cities a greater voice in the government of the proposed district that the metropolitan water district act was drawn and presented to the legislature. Under it Los Angeles, although it would represent probably 80 per cent of the population and assessed valuation in the district, would have had but one-half of the voting strength in the governing body. Nor was this all; to take any action, the assent of one city from each county represented in the district was essential. Thus, Los Angeles would have had a veto power upon the other cities, but the other cities were given a powerful veto over Los Angeles. Los Angeles was not afraid of this. It had confidence in the fairness of its sister cities. It knew there was a common interest to serve. It believed that in such a common enterprise, jealousies, fear and distrust would disappear and that member cities in such a district would work in full harmony and accord."—Cryer, George E., Mayor of Los Angeles, *Los Angeles and the Boulder Canyon Project*, Address before the Boulder Dam Association, Ontario, Calif., June 13, 1925, Colorado River Development (pamphlet issued by the Boulder Dam Association), p. 12.

"It is upon one of these weapons of opposition that I desire especially to dwell. I refer to the unceasing effort of hostile interests to work up distrust as between other states and California, agricultural regions and the city group, and as between the smaller cities and the great city of Los Angeles. Upon the somewhat natural fear and distrust of a great city, astute and suave agents and emissaries of the highly organized and shrewdly directed interests hostile to the project have worked with extraordinary cleverness."—*Ibid.*, p. 10. Cf. *Hearings*, H. R. 2903, Part II, p. 330, Feb. 27, 1924.

*"More Water; Bigger Crops. New Rulings Brings Riches to Ranchers. San Fernando Valley to Raise More Hay. Poultry and Bean Ranchers in on the Profits.*

"VAN NUYS, Aug. 20.—Decision of the Los Angeles Board of Public Service Commissioners in conference with William Mulholland, Chief Engineer, late yesterday revised irrigation water schedules affecting San Fernando Valley so that alfalfa growers in this section, will be enabled to procure another cutting of this important crop that will add more than \$250,000 to the valley's 1924 revenue and at the same time divert a sum of \$18,000 to the city's treasury."—*Los Angeles Times*, Aug. 21, 1924.

### 3. *Preferences to Municipalities under Federal Water Power Act of 1920 Will Benefit Only Large Cities.*

"MR. WEST: . . . If you turn the development over to municipalities, I think it will mean turning it over to simply one or two big municipalities, and that ultimately the smaller communities will be relegated to service by power developed, possibly, by the burning of oil, or, at least, more expensive forms of power. They will have to take what is left after the larger municipalities have taken the more economic developments."—*Hearings*, H. R. 2903, Part IV, p. 623, March 19, 1924; *Ibid.*, pp. 659-660.



## APPENDIX II—EXHIBIT FF

### THE TEN-YEAR PROVISION

"MR. CARPENTER: . . . Now I might explain this to Mr. Norviel. The selection of a ten-year period was the result of consideration of periods from a single year to twenty years. The best average, of course, and the fairest average of the flow of any river is that obtained from the twenty-year period as compared with one. A study of the flow of Laguna Dam, which appears on page 5 of the document No. 142 of the 67th Congress, 'Problems of the Imperial Valley and Vicinity,' will show that to take a three-year period would impose a harsh and unnecessary burden on the upper territory in the low cycle—in a cycle of low years. These years tend to run in cycles. On the other hand, a twenty-year period was considered unfair to the lower basin as prolonging the reckoning and too remote a period. A consideration of this table and a consideration of the stream flow tables of many other streams, indicates that a ten-year period gave a fair and reasonably accurate average of the flow of the river, taking both high and low cycles, and that a ten-year period would reach into both cycles and largely include them, and that as the future development in both the upper and the lower basin must rely upon storage, the storage facilities would care for that rise and fall.

"MR. NORVIEL: Both in the upper and lower basin?

"MR. CARPENTER: Both. It would all be taken care of automatically because of the amount to be delivered at Lee's Ferry and any shortage would adapt itself.

"MR. HOOVER: I didn't mean to convey this method would mean the control of reservoir discharge, but of supplies to reservoirs. Perhaps I would get my notion more clearly on the quantitative basis. Supposing the desire is to furnish to the lower division a flow of eight million acre-feet, or some such amount, and supposing that in a given three years thirty million feet had been delivered, or six million in excess of the total assured them for the fourth year, there would be a relief to the upper states of six million feet out of the eight million. Thus they would have satisfied the situation for the fourth year if they delivered only two million acre-feet. The average would then progress to another three years in which you have ten and ten and two or twenty-two million feet or a deficiency for the year of two million feet in order to give the full twenty-four million feet. That sort of measure would give some relief on erratic flows of famine years and at the same time would impose upon the lower division the necessity of providing a storage so that they would get their security from the great excess of flow.

(Lacuna)

"MR. HOOVER: In one case you are providing in advance for the security of the lower states and in the other case you have no advance provision. You may have had a period when the flow was actual average for five years and then three famine years, and during the famine years the lower states may have been seriously injured.

"MR. CARPENTER: That carries also with it the fact that the visitation of famine also strikes primarily the source states, the states of origin. Any shortage of flow in the river strikes the states of origin much harder than the lower states, because that very famine is what causes the shortage in the upper territory. It seems to me incumbent upon the lower states to be reasonable in the demand of guarantee. In other words an absolutely preferred delivery should not run wholly to the lower states. In making a division of the water it should rather be the disposition to lay the burden of water shortage, a drought, upon the whole territory, also to permit the enjoyment of excess flows to the whole territory. Another thought, any student of the river must realize that the future development in both areas will be that predicated upon the construction of reservoirs. Nevertheless, we have no power to say by whom these reservoirs shall be constructed, in what localities or when they shall be constructed. That should be left free to both communities to use such instrumentalities as may be at hand, and the division of the water should be so made that either area may build, or neglect to build, of its own motion, and as it may believe construction or lack of construction is at any one time justified. The suggestion you make presupposes the construction of reservoirs in the lower countries, and along with it there should be concurrently a like construction of reservoirs in the upper territory to permit the deliveries as you suggest to the lower territory. The suggestion I have made leaves that matter to be worked out entirely by the two divisions."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 21-24, Monday, 10 A. M., Nov. 13, 1922.

APPENDIX II—EXHIBIT GG

ACTIVITIES OF PRIVATE POWER COMPANIES IN  
COLORADO RIVER DEVELOPMENT

1. Money Spent by Private Companies in a California Election Involving Water Power.
  2. Private Power Companies Wish to Operate Under the Federal Water Power Act.
  3. Interlocking Interests of Private Corporations in Colorado River Development.
  4. Private Companies Declared Essential for Efficient Administration.
  5. Government Officials Favoring Private Ownership.
1. *Money Spent by Private Companies in a California Election Involving Water Power.*

"MR. BALLARD: . . . We worked very actively against the adoption of the water power act in California, (1922) which was an act attempted to be put over by the initiative.

"MR. RAKER: And you expended about how much money? . . .

"MR. BALLARD: The record shows on that. My recollection is that we spent about \$125,000 or so."—*Hearings*, H. R. 2903, Part III, pp. 509-510, 515, March 12, 1924.

"MR. WEST: Yes, sir. We opposed with all our vigor a measure that was proposed two years ago in California, to inject the State of California into the business of developing power on an enormous scale. And that measure was decisively defeated by the people of the State.

"MR. SWING: How much did your company donate towards the fund, which was estimated by the Senate investigating committee to be half a million dollars, raised by the opponents of the measure?

"MR. WEST: My recollection is that our expenditures in that fight ran around \$17,000; a very small part of what has been expended in connection with the propaganda behind the Boulder Canyon Bill.

"MR. SWING: Did you finance or have to do with financing what is known as the 'Interior Counties Association'?

"MR. WEST: Yes; that was the association headed by Mayor Evans of Riverside—No; I do not believe that association was called the 'Interior Counties Association'; it was the 'Public Welfare League'.

"MR. SWING: Well, that was financed by the power companies?

"MR. WEST: It was, in large part; the Public Welfare League which fought with us in the territory which we served was, in very large part, financed by our company. The head of it was Mayor Evans of Riverside.

"MR. HAYDEN: The same Mayor Evans who appeared before the committee in these hearings?

"MR. WEST: Yes.

"MR. SWING: But there was an Interior Counties Committee which was active. How was it organized?

"MR. WEST: That Interior Counties Committee was organized to fight an entirely different issue than the water and power act. That was organized to resist efforts of the city of Los Angeles to condemn certain water powers owned by our company in Mono County.

"MR. SWING: Was that financed by your company under that name?

"MR. WEST: In part financed by our company."—*Hearings*, H. R. 2903, Part IV, p. 661, March 14, 1924.

"MR. RAKER: . . . Mr. Ballard did not tell you these people did not spend the money themselves in this election; they turned it over to the People's Economic League, and the People's Economic League, standing as for the people, spent the money. Is not that right, Mr. Ballard?

"MR. BALLARD: Some of it.

"MR. SWING: Many of them (members of the People's Economy League) are stockholders of your company?

"MR. BALLARD: Not that I know of.

"MR. SWING: This economy league was the parent organization of 60 fly-by-night organizations, organized in various States, under various high sounding names, for the purpose of furthering the interests of the power companies under other names.

"MR. BALLARD: That is not true"—*Hearings*, H. R. 2903, Part III, p. 517, March 12, 1924.

"As a general conclusion, it may be stated that the evidence placed before your committee shows that sums were expended in connection with the campaign on initiative and referendum measures far in excess of any popular conception. Your committee doubts whether even members of the Legislature, to say nothing of the general public, had any idea, before the investigation, of the amount of money used in conducting state-wide campaigns on initiative and referendum measures that provoke any considerable contest. Now that the facts have been brought to public attention every effort should be made both to insist on full publicity of campaign expenditures, and also to devise ways whereby the issues involved in such contests can be presented at less cost than under present conditions. . . .

"Your committee in spite of the fact that its investigations show the expenditure of vast amounts of money in connection with the propositions on the ballot last fall—expenditures aggregating on the initiative and referendum measures considerably over \$1,000,000—is not yet constrained to advise the placing of a

limit as to the amount of expenditure, at least not until some means is devised whereby both sides of important issues can be adequately and equally presented to the public at less cost. The thing that must be sacredly guarded, however, and unequivocally insisted upon is publicity.”—*Report of Senate Committee appointed to Investigate Expenditures for and Against Measures on the Ballot at the General Election Held on Nov. 7, 1922*, Senate, California Legislature, 1923, California State Printing Office, Sacramento, 1923.

“MR. RAKER: Now, just a little more gossip. With the air so open, as it is these days you know, you hear a good many things, and is there anything in the statement that you have expended about \$150,000 in Arizona and that territory for the purpose of urging or assisting the private corporations in the direction of the Government’s constructing the dam at Boulder Canyon?

“MR. STETSON: No; not at all.

“MR. RAKER: Have you spent any money in that line down in that country at all?

“MR. STETSON: Absolutely not. I am not representing any corporation; I am just representing myself.”—*Hearings*, H. R. 2903, Part IV, p. 765, March 20, 1924.

Stetson interests in certain alleged “mining” properties along the Colorado River have been called into question on the ground that they are really intended for water power.—*River Claims Protected, Government Asks Injunction Against Asserted Mining Holdings at Reservoir Sites*, Los Angeles Times, July 28, 1925.

## 2. *Private Companies Wish to Operate Under the Federal Water Power Act.*

“There are now before the Federal Power Commission applications covering practically the entire Canyon Section of the river. (See Fig. 13.) All the development justified at present, including flood control and irrigation, will be undertaken by private capital under adequate Federal and State regulation if the Federal Water Power Act is left free to function.”—Kelly, Colonel William, Chief Engineer, Federal Power Commission, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, p. 835, August, 1924.

Mr. Ballard, General Manager of the Southern California Edison Company, asks why that company should not be permitted to develop the Colorado River under the Federal Water Power Act. He states that either the City of Los Angeles or the Southern California Edison Company will have to do the work because none of the smaller communities have a sufficient load to justify the building of a transmission line from Boulder Canyon to that community.—*Hearings*, H. R. 2903, Part III, pp. 466-467, March 12, 1924.

“MR. LITTLE: You are public servants, too?

“MR. BALLARD: Yes, sir; I feel I am just as much a public servant as the mayor of any city, or the governor of any State, or any member of Congress.

That is a change in the status of the public utility business that has come about in the last few years. It is no longer a business for profit . . . We believe the Southern California Edison Company is of and by the people. Not only do the people, those who want to, own it, as I have stated to you, as is shown by these vast numbers owning small amounts, but it is a public-service commission under the public utility act of California, dedicated to the proposition of furnishing service to all the people, a public-service corporation.—*Hearings*, H. R. 2903, Part III, p. 502, March 12, 1924.

“MR. HUDSPETH: . . . I would like to know just what rights you have under the present water power act?

“MR. BALLARD: We have developed, I think, twenty-one hydroelectric plants, and I believe all of them are under the Federal water power act, with, maybe, the exception of one or two of the earlier ones which were by special act of Congress.”—*Ibid.*, p. 514.

“He (Mr. Ballard) has told me (Criswell) that, as he views it, there is no possibility of the city obtaining any power from the Colorado River; that his company has filings upon all the available power sites on the river, and that they are ready and will finance the building of dams and plants upon the river.”—*Hearings*, H. R. 2903, Part II, p. 321, Feb. 27, 1924.

Mr. A. B. West, President of the Southern Sierras Power Company, believes that the public interest will be safeguarded if the Southern California Edison Company is granted a license to develop the power of the Colorado River.—*Hearings*, H. R. 2903, Part IV, p. 617, March 19, 1924.

It is the opinion of the power companies that the Swing-Johnson Bill gives undue preference to municipalities and other political subdivisions. They believe that this legislation goes beyond the preferences to such bodies contemplated by the Federal Water Power Act of 1920:

“MR. BALLARD: . . . We feel that this act of Congress, as asked by this bill, is something in the nature of special legislation, to single out special enterprises outside of this law and give them special privileges. In this case it happens to be political subdivisions that are asking for this.”—*Hearings*, H. R. 2903, Part III, p. 515, March 12, 1924.

Reference has been made to a meeting of representatives of the Southern California Edison Company with directors of Imperial Irrigation District, at which it was urged (1921) that the Imperial Irrigation District should keep from backing the government project in order that the Edison Company would have a chance to construct the necessary works under a license from the Federal Power Commission.—*Hearings*, H. R. 2903, Part II, pp. 293-296, Feb. 23, 1924.

### 3. *Interlocking Interests of Private Corporations in Colorado River Development.*

“MR. ROSE: . . . Let me explain the situation. There is the First National Bank in Los Angeles, which is the hub of certain interests.

"MR. RAKER: . . . What is the name of that bank?

"MR. ROSE: The First National Bank. Mr. Chandler is a director of that bank. I think Brant was a director of that bank. I think General Sherman was. I think you will find that some representatives of the Edison Company—and one of their representatives is here—are directors in that bank. There is an interwoven interest there, apparently; and what Mr. Chandler would like would be a reservoir sufficiently high to give him sufficient water, cutting off the canal and cutting off the power possibilities. That is what you will find.

"MR. RAKER: What is that? I did not understand that.

"MR. ROSE: What Chandler would like, with his associates, the Edison Company, would be a dam that would be high enough that would not generate any power to compete with them, and a dam high enough to furnish additional water so that he can extend irrigation over his lands . . .

"MR. HUDSPETH: Just one more question: He would be in favor of building a dam sufficiently high to store the waters so that he would get water sufficient for his lands, but not sufficiently high for power purposes?

"MR. ROSE: That is exactly what he says over his own signature."—*Hearings*, H. R. 2903, Part II, pp. 280-281, Feb. 23, 1924.

"MR. RAKER: How about the banking interests? There is a claim that there is some bank that has some control, furnishes money for the Edison Company.

"MR. BALLARD: No. There is no one bank that furnishes the money for the Edison Company. We carry our accounts in about 80 different banks. Our money from the banks, whatever we get from the banks, is for temporary purposes. The money for our business is derived from the sale of our bonds to investors generally throughout the country, and that provides 65 per cent or 70 per cent of the whole, and the remainder is secured from the sale of the stock directly to the people within the territory."—*Hearings*, H. R. 2903, Part III, p. 496, March 12, 1924.

"MR. BALLARD: . . . We secure 50 or more stockholders nearly every day in the ordinary course of business—new stockholders.

"There were 39,762 stockholders of the Edison Co. December 31, 1923, owning \$300 of stock or less each.

"MR. RAKER: That would be three shares?

"MR. BALLARD: Yes; 39,762. There were 12,462 stockholders owning up to \$500 each.

"MR. SWING: How many?

"MR. BALLARD: Twelve thousand four hundred and sixty-two. There were 5,900 stockholders owning \$1,000 each. There were 4,750 stockholders owning \$1,500 each. There were 1,450 stockholders owning \$2,500 each. There were 673 stockholders owning \$5,000 each. There were 360 stockholders owning \$10,000 each. There were 168 stockholders owning \$30,000 each. There were

56 stockholders owning \$50,000 each. There were 31 stockholders owning \$100,000 each. There were 15 stockholders owning \$200,000 each. There were 4 stockholders owning \$300,000 each. One stockholder owning \$400,000. One stockholder owning \$700,000. One stockholder owning \$800,000. One stockholder owning \$1,000,000. One stockholder owning \$1,800,000.

"There were a total of 65,636 stockholders owning \$61,624,600 worth of stock. The average was \$954 each. The largest individual stockholder owned less than 3 per cent of the stock. The total number of stockholders owning \$100,000 or more was about 55, so that it is, in fact, a great community enterprise in the hands of the public.

"MR. LITTLE: May I ask how many of these stockholders live in Los Angeles?

"MR. BALLARD: Los Angeles, approximately 25,000. In southern California, and we operate all over southern California, about 90 per cent. Something over 59,000 stockholders."—*Hearings*, H. R. 2903, Part III, p. 497, March 12, 1924.

"MR. A. B. WEST: These companies (The Nevada-California Power Company, The Southern Sierras Power Company, The Interstate Telegraph Company, Hillside Water Company, Cain Irrigation Company, The Imperial Ice and Development Company, Desert Water, Oil and Irrigation Company, Silver Lake Power and Irrigation Company, The Sierras Construction Company) are controlled by a holding company. One group of stockholders own the whole thing—the stockholders in the California-Nevada Electric Corporation own all of these properties. There is no single share, outside of qualifying shares, that does not ultimately belong to the holding company; in fact, the qualifying shares of the directors of these underlying companies are held by them in trust for the Nevada-California Electric Corporation. So that there is but one company, if you come down to ultimate ownership."—*Hearings*, H. R. 2903, Part IV, p. 647, March 19, 1924.

"The Southern Sierras Power Company and its associated company, the Imperial Ice and Development Company, have probably the second largest financial interest at stake in the basin, their properties in Imperial Valley alone representing some \$5,000,000 of invested money."—*Letter of March 5, 1924, A. B. West, as President and General Manager of the Southern Sierras Power Company to the Hon. Addison T. Smith, Chairman, and to the Members of the Committee on Irrigation and Reclamation, House of Representatives, Ibid.*, p. 615.

"MR. HAYDEN: . . . Have you agreed with the Southern California Edison Company and the other interested power companies upon a comprehensive plan for the development of the Colorado River?

"MR. WEST: No, sir, we have not. Our only understanding or agreement with the Southern California Edison Company is that in case that company shall be allowed to undertake the development we shall be permitted to participate to an extent commensurate with the needs and requirements of our territory."—*Ibid.*, p. 619.

Referring to the possible evils of holding companies, the largest of which he said was the Electric Bond and Share Com-

pany, Professor W. Z. Ripley stated that this particular corporation has a perfectly clean record, "but the possibilities of abuse . . . are overwhelming."—Lecture of May 19, 1925.

#### 4. *Private Companies Declared Essential for Efficient Administration.*

"MR. BARRE: There must be only one central operating organization. It is not possible to coordinate an operating organization at the dam; another operating organization at the transmission system."—*Hearings*, H. R. 2903, Part V, p. 959, March 26, 1924.

"MR. RAKER: . . . What is your judgment as to whether or not such a dam could be as economically and as well constructed under Government supervision as by private enterprise? . . .

"GENERAL GOETHALS: . . . I have rather inclined, in later years, to private enterprise.

"MR. RAKER: Now, explain to us why.

"GENERAL GOETHALS: You have got certain regulations under the Government that have got to be complied with, which a private corporation, or a private concern, would not attempt to undertake. You have got your 8-hour law, which is absolute, which a private concern would not undertake. You have got your civil service, which a private concern would not undertake. You can purchase your supplies to better advantage and generally more cheaply . . . You have got capital when you need it, which is not always the case with the Government work.

"MR. RAKER: Well, did these three obstructions in any way curtail you in your work at the Panama Canal?

"GENERAL GOETHALS: Things were different down there.

"MR. RAKER: Now, tell us why they were different.

"GENERAL GOETHALS: In 1908 President Roosevelt decided that there should be a czar on the Isthmus, and that all matters and disputes should be settled on the Isthmus. So I was the judge, the jury, and the taskmaster.

"MR. RAKER: And the executioner?

"GENERAL GOETHALS: Executioner. It made all the difference in the world. Give the same authority in any work in this country; allow no interference by anybody, and you will get the same results. But you can not do it."—*Hearings*, H. R. 2903, Part IV, pp. 756-757, March 20, 1924.

The Southern Sierras Power Company favors some such scheme as suggested by the Southern California Edison Company in order to secure the benefits of private ownership and public regulation.—*Ibid.*, pp. 616-617, March 19, 1924.

#### 5. *Government Officials Favoring Private Ownership.*

"SECRETARY WORK: . . . I am opposed to the Government doing anything that an individual or a company can do as well and as cheaply."—*Hearings*, H. R. 2903, Part V, p. 1028, March 29, 1924.

"SECRETARY WEEKS: . . . Personally, I am opposed to Government operation wherever the operation can be carried on under private auspices, and with private capital."—*Hearings*, H. R. 2903, Part V, p. 1006, March 29, 1924.

"SECRETARY WALLACE: . . . I am in favor of this river being developed under the provisions of the Federal water power act.

"Now, as you say very properly, that does provide for a preference to municipalities and States, and that preference will be exercised, and always has been, whenever the municipality or State agency puts itself in a position to exercise its rights and privileges under the law."—*Ibid.*, p. 1041.

"MR. MERRILL: I think from such information as I have that private development is giving better results at the present time."—*Ibid.*, pp. 1081, 1150, April 2, 1924.

APPENDIX II—EXHIBIT HH

ACTIVITIES OF THE BOULDER DAM ASSOCIATION AND OTHER PUBLIC OWNERSHIP GROUPS IN COLORADO RIVER DEVELOPMENT

1. Expenditures to Promote Colorado River Development.
  - a. Cooperation with Agencies of the Federal Government.
  - b. Payments by the City of Los Angeles to the Boulder Dam Association.
  - c. The Boulder Dam Association's Use of Funds Received from Cities and Other Sources.
    - (1) Sources of Revenue of the Boulder Dam Association.
    - (2) Expenditures of the Boulder Dam Association.
  - d. Sending of Representatives to Washington.
  - e. Los Angeles Retains Mr. A. P. Davis as Consulting Engineer.
2. Adaptation of Local Government to Colorado River Development.
3. Preference to Municipalities under the Federal Water Act.

1. *Expenditures to Promote Colorado River Development.*

a. *Cooperation with Agencies of the Federal Government.*

"On Presentation by Special Counsel, and on his recommendation and of the Chief Engineer and Chief Electrical Engineer,—the matter being considered at some length,—Mr. Haynes moved the adoption of the following resolution:

"Whereas, the City has made application to the Federal Power Commission for license or permit to develop the Boulder Canyon Reservoir on the Colorado River with a view of obtaining from that source sufficient power for the future needs of Los Angeles, and

"Whereas, the proper prosecution of such application requires that the City provide, or cause to be provided, data as to physical condition in, along, and in the vicinity of said Boulder Canyon, in order that it may be determined whether such project is feasible, and if so, where the dam should be located, and the type of construction, height, and cost thereof; and,

"Whereas, it is practicable to obtain such information through the United States Reclamation Service which, if provided with the necessary funds, proposes to complete investigations on the ground which will disclose the facts required, as aforesaid;

"Whereas, the cost to the City of obtaining such necessary information if it should, itself, be required to do the proper investigating work, would be greatly in excess of the amount to be paid the United States Reclamation Service for supplying such information; and

"Whereas, said Reclamation Service estimates that the amount required of the City of Los Angeles for said purpose would be \$75,000, and has indicated that said amount might be paid in installments, conforming to the needs of said Reclamation Service for such work as it progresses; and it appearing to be to the best interests of the City and this Board, in fulfilling the public duty to provide an ample power supply for the inhabitants of Los Angeles, that this Board should undertake to advance said amount for said purposes;

"Therefore, Be It Resolved; that this Board, out of power revenue undertake to advance and pay to the United States Reclamation Service the sum of \$75,000 to carry on the work of said Reclamation Service in investigating the site of the proposed dam at Boulder Canyon or the Colorado River for the purposes aforesaid, subject to the condition that the results of said investigation be furnished this Board; that such payment be made in installments; that a demand for the initial installment of said sum, to-wit, \$15,000, be drawn on the Power Revenue Fund in favor of the United States Reclamation Service.

"Seconded by Mr. Bartlett, and carried by the following vote:

"Ayes: Messrs. Bartlett, Haynes, Robinson, the President.

"Noes: None."—20 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 115-116, Special Meeting, Feb. 16, 1922.

"On written report and recommendation of the Chief Electrical Engineer and Special Counsel, to whom the matter had been referred, Mr. Haynes moved the adoption of the following resolution:

"Whereas, the United States Geological Survey invites cooperation between the City of Los Angeles and the survey in connection with the establishment and operation of gauging stations on the Colorado River at Bright Angel Trail Crossing and Topock, the city to contribute \$1,500 toward the establishment of such stations, of which \$500 should be paid forthwith and not to exceed \$1,000 a year in their operation; and it appearing that the operation of such stations will be of substantial advantage to the City in providing necessary information as to the flow of the Colorado River and power possibilities thereon, and that the City should contribute toward the establishment and operation thereof in order to obtain such information.

"Therefore . . . allowed out of the Public Revenue Funds."—21 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, p. 217, Aug. 11, 1922.

b. *Payments by the City of Los Angeles to the Boulder Dam Association.*

"On written recommendation of the Special Counsel, by Floyd M. Hinshaw, Mr. Dykstra moved the adoption of the following resolution:

"Whereas, the City of Los Angeles is vitally interested in the matter of inducing Congress to provide the necessary funds for the construction of a high

storage dam at or near Boulder Canyon on the Colorado River, because of the fact that such dam, besides insuring protection to Imperial Valley and other menaced sections against the floods of the Colorado River and greatly extending irrigation in the Lower Colorado Basin, will make possible the development of a great amount of hydro-electric power; and,

“Whereas, an organization known as Boulder Dam Association, composed of representatives of the various municipalities, districts, and communities interested in said project, has been formed for the purpose of providing such publicity, and such organization is to be supported and financed by participating public agencies, and it appears desirable that the City of Los Angeles, as a member of such organization should contribute its share of the legitimate expense of such publicity work.

“Now, Therefore, be it resolved, that a demand for \$250.00 in favor of the Boulder Dam Association, be, and the same is hereby ordered drawn and approved on the “Power Revenue Fund.””

“Seconded by Mr. Baker, and carried by the following vote:

“Ayes: Messrs. Baker, Burton, Dykstra, the President.

“Noes: None.”—24 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, p. 484, March 21, 1924.

The payment of a sum not to exceed \$1,500 per month to the Boulder Dam Association was authorized at the meeting of June 12, 1923. One thousand dollars of that sum was thereupon ordered drawn upon the Power Revenue Fund.—23 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 21, 22, 94, 95, June 12, 1923.

On February 19, 1924, a sum of \$500.00 was voted for the same purpose.—24 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 12, 376, Feb. 19, 1924.

c. *The Boulder Dam Association's Use of Funds Received from Cities and Other Sources.*

(1) *Sources of Revenue of the Boulder Dam Association.*

“Receipts from beginning.....	\$ 9,660.00
“Imperial Irrigation District.....	4,750.00
“Los Angeles Bureau of Power & Light	
“ To San Diego office.....	\$ 1,000.00
“ To Los Angeles office.....	3,750.00
“Cities, meeting at Santa Ana.....	365.00
“U. S. Veterans of El Centro.....	10.00
“Spruce Farm Center of Brawley.....	20.00
“City of San Bernardino.....	15.00
“ by S. C. Evans, Executive Director	

“Audited by W. M. Irwin, Auditor.”—*Statement of Receipts*, July 19, 1924, City Hall, Long Beach, California.

"MR. BALLARD: Those voters who voted against those propositions (bond issues for Boulder Dam project and extension of local distributing system) have not come to Washington, for the reason that they are unorganized, and have no funds with which to finance such an appearance. The public ownership enthusiasts, on the other hand, are here in force, because finances have been made available, through the action of public officials, appropriating money derived either directly or indirectly from taxes."—*Hearings*, H. R. 2903, Part VI, p. 478, March 12, 1924.

"MR. RAKER: What is this influence of the American owners of Mexican lands on the Mexican Government?

"MR. MAXWELL: Well, it is a group of capitalists in Los Angeles who are in control of forces there which are directed in favor of the plans which have been approved by these owners of Mexican lands; and I do not think I am going too far in saying that they appear to control the Chamber of Commerce. They appear to control the banking interests of Los Angeles. They certainly control some of the newspapers of Los Angeles, and they have even gone so far as to send emissaries to Phoenix with a view of getting Arizona interests to support the compact.

"MR. LEATHERWOOD: You would not go so far, Mr. Maxwell, as to say that they control the judge who recently entered a decree at Los Angeles requiring the power commission there to return over \$12,000 of the people's money that they had expended?

"MR. MAXWELL: No; I would not. I think that decision was entirely correct myself; I think that was a just decision. I do not think, Mr. Leatherwood, that the power bureau of Los Angeles had a right to tax the people and take the money and donate it to another association entirely, the Boulder Dam Association, to work for a proposition like this—to give them \$1,500 a month, out of the people's money; no, I don't think they had any legal right to do it."—*Hearings*, H. R. 2903, Part VI, p. 1346, April 17, 1924.

(2) *Expenditures of the Boulder Dam Association.*

The purposes for which a portion of the revenue of the Boulder Dam Association was used, is indicated by the following entries:

"Phil D. Swing, Dr.

In account with Boulder Dam Association

For actual expenses and services rendered.

"July 2 to 7, 5 days service—\$25.00.....	\$125.00
"Railroad fare, San Diego to Los Angeles, July 1.....	6.00
"Service, including address 100% Club, San Diego.....	25.00
"July 25, Conference with Moody and Clark for perfecting plans for hearing before Secretary Work.....	25.00
"July 28, Service rendered, including address Iowa State Society Picnic, San Diego.....	25.00"

The statement which includes the preceding items bears a notation at the top of the sheet to the effect that it was approved by the Executive Committee and approved by Mr. Moody, Aug. 11th, 1923. This notation is signed by Burdette Moody, acting secretary.

In a financial statement of the Boulder Dam Association dated Aug. 18, 1923, under the title "Vouchers drawn" is the following entry:

"8/15 \$20, Phil Swing, Expenses and Services—July—\$496.65."

And also under date of Aug. 18, 1923, under the title of Expenses of the Boulder Dam Association up to Aug. 18, 1923, there appear the following items:

"5/24 Phil Swing, Expenses & Services.....	\$364.68
"6/21 Phil Swing, Expenses & Services.....	536.42
"7/7 Phil Swing, Expenses & Services.....	489.75
"8/15 Phil Swing, Expenses & Services.....	496.65
	1,887.50

These data were gleaned from the records of the Boulder Dam Association when I was given the opportunity of examining them on Sept. 4, 1924, by Mr. Burdette Moody, Business Manager of the Board of Public Service of the City of Los Angeles, 209 South Broadway, Los Angeles. Mr. Moody is secretary of the Boulder Dam Association. My study of the records was made at Mr. Moody's office.

*"Swing Quizzed by Grand Jury. Congressman is Asked About Fees for Water Work. Paid by Valley District and by Government Too. Irrigation Affairs Under Federal Scrutiny.*

"An investigation of the affairs of the Imperial Valley Irrigation District, with especial reference to the part played therein by Congressman Phil Swing, was under way yesterday at the hands of the Federal grand jury, with Asst. U. S. Atty. Lucas presenting the government's case.

"With the examination of two witnesses, one a Federal investigator who for several weeks had been delving into the District's records, and the other Congressman Swing, the grand jury adjourned for a period of two weeks without taking action on the case. Three other witnesses who had been subpoenaed, E. C. Pound, F. H. McIvor and C. W. Brockman, the first two being respectively president and secretary-treasurer of the district, were not called to testify.

"According to President Pound and Secretary McIvor the investigation concerns the payment of a voucher of \$708.82 to Congressman Swing, this being a salary of \$25 a day and his expenses while representing the district at a conference on the Colorado River situation held before the Federal Power Commission beginning September 24, 1923.

*"Got Money Later.*

"Two vouchers for the amount named were brought to the grand jury by Secretary Melvor. The first, he said, was issued on October 16, 1923, but was returned by Congressman Swing to avert adverse criticism. The second, dated September 23, 1924, was cashed.

"The inquiry by the Federal grand jury, according to President Pound, grows out of a recent investigation by the Imperial County grand jury, in which a group of indictments against officials of the District was introduced at that time, it was said, because of an asserted violation of Federal law and was turned over to the Federal body.

"Acting under instructions from U. S. Atty. McNabb, Special Agent Noel of the Department of Justice was sent to the Valley with instructions to make a full and impartial report. This report is presumed to have been embodied in Agent Noel's testimony to the grand jury yesterday.

*"Swing Testifies."*

"Congressman Swing was before the inquisitorial body for more than two hours. He appeared voluntarily as a witness, he declared.

"'The matter is entirely open and aboveboard,' he said to newspaper men. 'I have nothing to hide.'

"Congressman Swing began his connection with Imperial Valley affairs soon after the formation of the county. He was Deputy District Attorney under the late J. M. Eshleman and became District Attorney afterward, when Mr. Eshleman was appointed a member of the State Railroad Commission. Mr. Swing was later appointed as Superior Court judge and then was elected to Congress, being re-elected last year.

"He is the author of the 'Swing-Johnson bill' in which is included a provision for the All-American Canal to Imperial Valley.

"The legal question involved in the grand jury investigation was said at the United States Attorney's office to involve his right to accept a retainer from the irrigation district officials while he was still in office as a Congressman and representing all the constituency of the valley—a large number of whom are opponents of the legislation which he sponsors."—Los Angeles Times, May 30, 1925.

"MR. SWING: . . . I am a man who has to live upon my salary and what I can make in the practice of law . . . They (the Imperial irrigation district) sought my services as advisory counsel, and I was glad to accept employment in the way of a practicing attorney during the recess of Congress. When I came back here—and I left there in October—I resigned my position."—*Hearings*, H. R. 2903, Part VIII, p. 1805, May 17, 1924.

"The grand jury after full and complete investigation reported that there had been no violation of any law by Congressman Swing."—Statement by Mr. Swing, Washington, D. C., June 4, 1926.

"MR. LEATHERWOOD: How many people did you have on your pay roll, permanently, for propaganda purposes, during the months of April, May, June, and July of 1923?

"MR. EVANS: I could not tell you from memory.

"MR. LEATHERWOOD: Did you have anybody employed at \$25 a day, and if so, how many?

"MR. EVANS: I could not tell you from memory.

"MR. LEATHERWOOD: Did you have one?

"MR. EVANS: I could not tell you from memory.

"MR. LEATHERWOOD: Do you have any record of that?

"MR. EVANS: Yes; I have a record of all our receipts and all our expenditures.

"MR. LEATHERWOOD: Will you be kind enough to furnish me that information?

"MR. EVANS: If you want it and the committee asks for it . . .

"MR. LEATHERWOOD: The Imperial irrigation district paid you \$1,500 monthly for a period, did it not?

"MR. EVANS: Well, I think—I have a recollection that they made one payment of that kind; and I think they made several."—*Hearings*, H. R. 2903, Part VII, p. 1512, April 23, 1924.

For the report of Mr. Hayman pertaining to the expenditures of the Imperial Irrigation District, investigated by the Grand Jury that finished its hearings at El Centro on the 26th of February, 1924, see *Hearings*, H. R. 2903, Part VII, p. 1514, April 23, 1924.

For data furnished by S. C. Evans, Executive Director, Boulder Dam Association, re payments to Swing, and other expenses, see *Hearings*, H. R. 2903, Part VIII, pp. 1940-1944, May 17, 1924.

d. *Sending of Representatives to Washington.*

"On oral recommendation of the Special Counsel, Mr. Haynes moved the adoption of the following resolution:

"Be It Resolved, that Ralph L. Criswell, President of the Council, and W. B. Mathews, Special Counsel, be authorized to proceed to Washington, D. C., to give attention to the interests of the City as involved in the Swing-Johnson Bill, pending before Congress, for the development of the Colorado River, and that their necessary expenses in the matter be paid by the Department out of the Power Revenue Fund.'

"Seconded by Mr. Dykstra, and carried by the following vote:

"Ayes: Messrs. Baker, Dykstra, Haynes, the President.

"Noes: None."—*22 Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 21, 183, Jan. 16, 1923.

"*Is Sad Blow for Lobbyists. Irrigation District Recalls Paid Agents. Court Forbids Payment of Salaries. Vacations in Washington at an End.*

"EL CENTRO, Dec. 31.—Complying with a decision rendered by Judge Walter E. Guerin of Los Angeles this week in which the Imperial Irrigation District was enjoined from the further expenditure of public funds to influence legislation at Washington, the board of directors yesterday passed a resolution recalling two paid lobbyists now at Washington.

"The resolution announcing the board's new policy, is as follows:

"Resolved, that in view of the decision in the case of Crawford vs. Imperial Irrigation District, it is the judgment of this board that hereafter none of the funds of the district be appropriated or expended for the purpose of advocating or opposing legislation at Washington, or elsewhere, and

"It is further resolved that the names of B. F. Fly and F. W. Greer be and they are hereby dropped from the District pay roll.

"A. C. Finney, assistant attorney for the district, stated today that an appeal would be filed from the Guerin decision, but pending the final outcome no more lobbying is to be financed by the district.

"Harry Horton, who is associated with Dist.-Atty. Ernest Utley of Imperial County in the prosecution of malfeasance charges now pending against the district directors as a result of the action of two county grand juries, stated today that suits would be filed to recover money already spent illegally for lobbying purpose, by the directors.

"F. W. Greer is publicity agent for the District, and B. F. Fly is employed as a regular lobbyist at the national capital. Both have made several trips to the national capital in behalf of the Swing-Johnson bill."—Los Angeles Times, Jan. 1, 1926.

e. *Los Angeles Retains A. P. Davis as Consulting Engineer.*

"... That Arthur P. Davis, Civil Engineer, be employed as Consulting Engineer to assist the Board of Public Service Commissioners in conjunction with the Chief Electrical Engineer, and Chief Engineer of Water Works, in studying the problem of Colorado River development, particularly the proposed dam and reservoir project at Boulder Canyon or vicinity."—*23 Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 16, 545, Nov. 2, 1923.

The compensation of Mr. Davis is \$5,000 per year.—*Ibid.*

2. *Adaptation of Local Government to Colorado River Development.*

"MR. CRISWELL: ... Now, at the election in 1922, there was submitted to the voters of the city an amendment to our city charter to make it more clear so that there would be no possible argument on the point that the city might go outside of the State of California to build hydroelectric works or water works, and that it might build those works in conjunction with other municipalities, or other States, or the United States government."—*Hearings, H. R. 2903, Part II*, pp. 332-333, Feb. 27, 1924.

See, also, *Statutes and Amendments to the Code of the State of California, Session of 1923*, pp. 1418-1419.

"Sec. 3. Metropolitan water districts may be organized hereunder for the purpose of developing, storing and distributing water for domestic purposes, and may be formed of the territory included within the corporate boundaries of any two or more municipalities, which need not be contiguous, and may be incorporated and organized and thereafter governed, maintained and operated as herein

provided, and when so incorporated shall have and exercise such powers as are herein expressly granted, together with such powers as are reasonably implied therefrom and necessary and proper to carry out the objects and purposes of such incorporated districts. Each such district when so incorporated shall be a separate and independent political corporate entity.”—*Metropolitan Water District Act*, State of California, Introduced by Senators A. B. Johnson and Swing, January 19, 1925.

“On written recommendation of the Special Counsel, by Floyd M. Hinshaw, Mr. Haynes moved the adoption of the following resolution:

“Be it Resolved, that the Board of Public Service Commissioners of the City of Los Angeles, does urge and recommend that the Honorable Council submit to the voters of the City, at the coming general municipal election, the proposition of authorizing a bond issue in the sum of \$35,000,000 for the acquisition, construction, and completion by the City of Los Angeles of a revenue-producing municipal improvement, to-wit:

“Works for supplying said City and its inhabitants with electric energy for the purposes of light, heat and power, including works for the development of electric energy from the water of the Colorado River, at or in the vicinity of Boulder Canyon, and substations, transmission lines and other works for transmitting said electric energy, at a cost of \$25,000,000; also, including distributing lines, conduits and sub-stations, at a cost of \$10,000,000.

“That all of said works are necessary and convenient to carry out the objects, purposes and power of said city.

“That in the event of the authorization and sale of such bonds, the Department of Public Service will make all payments on principal and interest out of revenue without taxation.’

“Seconded by Mr. Baker, and carried by the following vote:

“Ayes: Messrs. Baker, Dykstra, Haynes, the President.

“Noes: None.

“Mr. Haynes then moved that the following letter, to be signed by the members of the Board, and the Secretary, be forwarded to the City Council:

“May 14, 1923.

“To the Honorable  
Members of the City Council,  
City Hall,  
Los Angeles, California.

“Gentlemen:

“After most careful consideration, we have concluded that it is the duty of the Board of Public Service Commissioners to ask the Council to submit to the people, at the coming municipal election the proposition of voting a bond issue of \$35,000,000 for electric plant purposes, \$10,000,000 being for general distribution, and \$25,000,000 for obtaining an additional electric power supply from the Colorado River.

“The \$10,000,000 for distribution is much less than reasonably might be provided for extending and improving the municipal electric system. It is needed to enable this Department to at least partially meet an overwhelming demand for electric service from the City.

“As to the \$25,000,000 this Department must not only provide for the immediate electric needs of our citizens, but must look out for the further requirements of our people. An adequate supply of cheap hydro-electric power is indispensable if the city is to properly care for the present needs and the rapidly increasing requirements of its inhabitants. Hydro-electric energy is this City's only permanent form of industrial power. We have no large available supply of coal within economical reach. Our oil supply, though now plentiful, is limited in quantity.

“The urgent necessity for the development of additional hydro-electric resources is further disclosed by the following facts. The Bureau of Power and Light, in its five power plants along the aqueduct, is now generating 90,000 horsepower. This is energy sufficient to serve about seventy per cent of the consumers on the City's present system. The remaining thirty per cent is purchased wholesale from the Edison Company.

“It costs the city 4/10 of a cent per kilowatt-hour to generate and deliver to a central distributing point its own electric energy. For the thirty per cent purchased wholesale it pays more than 1 cent per kilowatt-hour, or two and one-half times as much.

“The total quantity of power that can be developed by the City along the aqueduct proper is hardly more than sufficient to meet the present requirements on the City's municipal electric system, to say nothing of its future needs. Besides, the demand for electric energy along the lines served by the Bureau of Power and Light has been increasing at the rate of twenty-two per cent compounded annually during the past three years.

“Through its aqueduct system, the City is provided with a water supply sufficient for 2,500,000 people. The City's available power supply should be equal to its water supply. This would call for the ultimate development of 1,000,000 horsepower of electric energy.

“If Los Angeles is to continue to develop as a great industrial center, it is vitally necessary that the City be enabled, through provision of a power supply sufficient for its future needs, to maintain its present low electric rates, which have, in a large measure, made possible this City's amazing industrial growth.

“The Board of Public Service Commissioners are now prepared to make the pledge that if this bond issue is authorized by the voters, all interest and sinking fund charges on such bonds will be paid entirely out of electric revenues and without taxation.

“The protection of Imperial Valley and other menaced sections along the lower Colorado, is the primary consideration in connection with the construction of the Boulder Canyon Dam. The City's plan to obtain from that source a reasonable share of the power, is but a secondary matter, but the bond issue, needed to carry out the City's plan, will, if authorized, also greatly strengthen

the efforts proposed to be made at the coming session of Congress to obtain the necessary appropriation for construction of such dam.

“Respectfully,

Board of Public Service Commissioners,

Signed: R. F. del Valle, Pres.

C. A. Dykstra

J. B. Baker

John Haynes’

“Jas. P. Vromen, Sec.

“(seal)’

“Seconded by Mr. Baker and carried by the following vote:

“Ayes: . . .

“Noes: None.”—22 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 611-612, (Special meeting, May 14, 1923, called for the purposes of transmitting to the voters the question of a bond issue for the purpose of extending the electric light and power system of the city.)

“Mr. Dykstra moved the adoption of the following resolution:

“Be it Resolved, that the Board of Public Service Commissioners authorizes and instructs Chief Engineer Mulholland to make preliminary surveys, to determine the feasibility of bringing a portion of the water of the Colorado River to the City of Los Angeles for domestic, industrial and other useful purposes.

“Be it Further Resolved, that such surveys have in mind not only an additional water supply for this City, but also a supply for other municipalities needing water which might be furnished by the same project.’

“Seconded by Mr. Burton, and carried by the following vote:

“Ayes: Messrs. Baker, Burton, Dykstra, Haynes, the President.

“Noes: None.”—23 *Minutes of the Board of Public Service Commissioners, City of Los Angeles*, pp. 5, 501, Oct. 23, 1923.

### 3. *Preferences to Municipalities under the Federal Power Act.*

“O. C. MERRILL: We have had applications on the Colorado River from various sources, one of which is from the city of Los Angeles itself. If it came to the point where the question of development would be settled only under the provisions of the Federal water power act, and the city of Los Angeles was an applicant before the commission, it would have a preferred position before the commission. There have been many applications by municipalities under the Federal water power act in the three and one-half years that that act has been in effect. In only one instance that I now recall did the commission reject the application of the municipality as against the application of the private corporation.”—(Louisville, comprehensive scheme of development, would exceed the constitutional limits of its bonded indebtedness; Minneapolis and St. Paul both appeared as applicants, dam on Mississippi River constructed by United States Federal Power Commission said they would have to agree upon a common plan. Agreed to let Ford build it.)—*Hearings*, H. R. 2903, Part V, pp. 1065-1066, April 2, 1924.

"A. P. DAVIS: The author deserves thanks for the frank official declaration of the settled policy of the Federal Power Commission, in his statement that:

"All the development needed on the Colorado will be built by private capital under adequate Federal and State regulation if the river is given over to development under the Federal Water Power Act.'

"This declaration is in the face of the mandatory provision of the law that the Commission shall give preference to applications from municipalities, such as are on file for the privileges of the Colorado River power sites. That this defiance of law is a settled policy of the Power Commission is an important fact in considering legislation affecting not only the Colorado, but any other stream under its jurisdiction."—50 *Proceedings of the American Society of Civil Engineers*, No. 9, p. 1481, Nov. 1924.

APPENDIX II—EXHIBIT JJ

HIGH-LINE CANALS FOR AMERICAN LANDS

1. Projects for Serving California Lands.
  - a. Walter G. Clark.
  - b. W. F. McClure.
  - c. William Mulholland.
  - d. E. C. La Rue.
2. Projects for Serving Arizona Lands.
  - a. The Arizona High-Line Canal.

1. *Projects for Serving California Lands.*

a. *Walter G. Clark.*

Mr. Walter G. Clark, consulting engineer, of New York and Los Angeles proposes a gravity flow system from Boulder Canyon to Los Angeles. This would necessitate tunnels for 149.2 miles, but is declared feasible because of the nature of the use to which the water would be put. It was pointed out that New York secures its water through a tunnel 93 miles long. Such a plan would obviate the expenditure of a sum estimated to be eight and one-half million dollars per year for electrical energy to pump the water over the mountains.—Interview of Aug. 11, 1924, 707 Bank of Italy Building, Los Angeles; *Hearings*, H. R. 2903, Part IV, p. 779, March 20, 1924.<sup>1</sup>

b. *W. F. McClure.*

Mr. W. F. McClure, former State Engineer of California, in November, 1925, announced that the engineering advisory committee of the State division of engineering and irrigation would make an eight-day field trip to the Colorado River the following December for the purpose of investigating the new high-line diversion route suggested by the State division. The new diversion route would carry the water across the plateau at an elevation of one thousand feet higher than any of the other routes.—*New Colorado Plan Proposed, State Bureau Suggests High Diversion Route*, Los Angeles Times, Nov. 19, 1925.

c. *William Mulholland.*

"Surveys of the proposed line from the Colorado River to Los Angeles are now sufficiently complete to determine its feasibility and an examination of the cost of pumping water absolutely assures us that it can be delivered over the summit at a cost such that the rates to be charged for the water will not be above

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<sup>1</sup> See, also, Chapter III, *Engineering Background*.

that in most American cities.”—Mulholland, William, Chief Engineer, Department of Public Service, Bureau of Water Works and Supply of the City of Los Angeles, *Letter to Mr. W. B. Mathews, Special Counsel, Department of Public Service, City of Los Angeles, Hotel Raleigh, Washington, D. C., Dec. 13, 1924, Hearings, S. 727, Part I, p. 85, Dec. 22, 1924.*

“To Start Aqueduct Work. Awarding of Dredging Contract, for which Bids Will be Opened Today, Signal to Begin.

“That work on the construction of the first unit of the Colorado River Aqueduct, which is to bring sufficient water to Southern California cities to supply the needs of 7,000,000 people will be started immediately upon the awarding of a contract for the dredging of the infiltration canal along the banks of the river, was learned at the offices of the Municipal Water Bureau.

“Bids on this contract will be opened by the Board of Water and Power Commissioners tomorrow. If one of the bids is accepted the work under the direction of William Mulholland will be set under way at once, it was declared.

“The infiltration canal, it was said by Mulholland, will extend for a distance of one and one-half miles parallel to the Colorado River and at a distance varying from 500 to 700 feet west of the stream. Its southern end will be sixteen miles north of the town of Blythe and almost due east of Los Angeles.

“Experiments carried on for the last year by the Municipal Water Bureau show that the area through which the infiltration canal is to be dug has a deep stratum of fine sand and gravel which acts as a natural and perfect filtration system. Water from the Colorado River finds its way into this gravel area in large quantities and in passing through the deposits of sand and gravel is efficiently filtered and freed from all silt and other foreign matter, the experiments have disclosed.

“With the infiltration canal constructed, these water-bearing gravels will pour water into the channel where, on the completion of the water line, it will be picked up by the aqueduct and started on its way to Los Angeles and other Southern California cities.

“Construction of the infiltration canal will mark the opening of work on the first unit of the giant water carrier. From its intake at the river the aqueduct will extend for a distance of 258 miles to Los Angeles; it will be approximately ten miles longer than the city’s present Owens River aqueduct.

“Under the direction of Assistant Engineer E. A. Bayley, the Municipal Water Bureau is now completing an exhaustive survey of the entire desert and mountain country between Los Angeles and the Colorado. This survey has carried Mulholland’s crews of engineers over practically every inch of the territory from Boulder Canyon to the Mexican border.”—Los Angeles Times, Feb. 1, 1926.

d. *E. C. LaRue.*

“Gravity Plan for Colorado. Project Would Avoid Use of Pumping Plants. Engineer Submits Report to Geological Survey. Intake and Dam Different from Mulholland Idea.

"A gravity flow aqueduct from the Colorado River to Los Angeles can be built and operated, according to a report made by Eugene C. LaRue, chief of the western branch of the United States Geological Survey, to his superiors at Washington, for less money than the proposed Mulholland aqueduct. LaRue, who has spent a lifetime in studies of the Colorado and became a leading authority on the problems of its taming and development many years ago, made public here today, in part, the substance of his report, which is based on the latest of his many trips through the canyons of the Colorado.

"Engineers all concede that a gravity aqueduct is a physical possibility, but the surveys and estimates made by Mulholland and his staff go to show that it can be constructed only at prohibitive cost and delay. Instead, the Mulholland plan calls for an intake at a point near Blythe, with an immediate lift to Shaver's Summit, where, at an elevation of slightly more than 1700 feet, the line would cross the divide between the Chuckawalla and Coachella valleys, and gravity flow to Los Angeles would begin.

"LaRue's contention is that, although his aqueduct would cost more, the interest on the added capital outlay would be so much less than the fixed operating charges of the pumping plant contemplated by Mulholland, that the net result would be equivalent to a saving of more than \$10,000,000.

"The intake point for LaRue's gravity line would be at Bridge Canyon, ten miles below the junction of Diamond Creek with the Colorado and about forty miles as the crow flies east of and upstream from Boulder Canyon.

"To supply power for his pumping plant, Mulholland depends on a dam 600 feet high at Boulder Canyon, supplying storage capacity sufficient to generate 600,000 horsepower.

"LaRue would build a dam 900 feet high at Bridge Canyon, supplying storage capacity sufficient to generate 1,000,000 horsepower, all of which would be available for agricultural, domestic and industrial use, none being needed for the aqueduct which he proposes.

"From the Bridge Canyon Dam his line would stretch across Arizona for sixty miles to a point ten miles east of Topock, where he would cross the river by an inverted siphon. Thence his goal would be the same divide at Shaver's Summit reached by Mulholland's lift from Blythe. Between the summit and Los Angeles, the two routes would be identical.

"The river at Bridge Canyon, LaRue asserts, is much clearer than at points farther down stream, and suitable building rock is at hand on the proposed site, but it would be necessary to build a spur railroad for the transport of other materials.

"A complete detailed report of the gravity plan has been given to the government by LaRue, who suggests that it be investigated before final plans are adopted."—Los Angeles Times, April 10, 1925.

## 2. *Projects for Serving Arizona Lands.*

### a. *The Arizona High-Line Canal.*

"The Arizona High-Line Project will reclaim 3,500,000 acres of land. We know that land is there. There is no doubt whatever about that part of it. What

we do not know is exactly what it will cost to reclaim it. We are entitled to know that before we throw away that project in exchange for illusory benefits which it is claimed we will get if we rush this pact through before we know what we are doing. We know if by accident it shouldn't be practical now it soon will be, as the demand for land will be greater, and new inventions and discoveries are coming to the front, and therefore future development should be preserved and retained for future generations."—Colter, Fred T., State Senator, Apache County, Arizona, *Remarks on the Motion to Substitute Senate Concurrent Resolution No. 8 for Senator Elliott's Motion that Senate Bill No. 136 Do Pass in the Arizona Senate*, February 27, 1923.

“June 4, 1925.

“To the Hon. George W. P. Hunt,

“Governor of Arizona, and

“To the Hon. Frank P. Trott,

“State Water Commissioner,

“Phoenix, Arizona.

“Gentlemen:

“Supplementing our formal petition of May 29 to you anent the protection of Arizona's irrigation and power interests as conceived by the Arizona Highline Reclamation association, the undersigned committee of that association respectfully submit to you this additional argument for your consideration.

“Inasmuch as Chief E. C. LaRue of the U. S. Geological Survey has already reported favorably on a gravity aqueduct plan for Los Angeles which is identical with the Arizona Highline Reclamation association plan from Topock north of Bridge canyon therefore, we take it that any further detail survey by that department along this proposed route will be favorable to the construction of the aqueduct, and any money appropriated by Arizona and expended upon further detail survey of this route will undoubtedly be of assistance to both Los Angeles and the Arizona Highline Association, although our association has already made surveys that satisfy its members of the feasibility of this portion of the project, and then, too, Los Angeles voted \$2,000,000 to make a detail survey of this aqueduct, thus assuring that such a survey will be made in any event. Of course, that part of the aqueduct-highline plan from Topock north will be found feasible by both the federal government and the Los Angeles authorities.

“But Chief LaRue has stated in open meeting he considers the highline project for Arizona visionary, although he has already made a favorable report on the gravity to Los Angeles, while at the same time declaring it visionary to bring the same water a shorter distance over a less expensive route to the incomparable irrigable lands in the near vicinity of Phoenix. But we leave it to Mr. LaRue to explain his position to the people of Arizona.

(Signed) “Fred Colter, Chairman,

“D. P. Kimball,

“D. L. Cunningham,

“J. H. Whyte,

“Mrs. (B. M.) Sarah T. Atwood.”

—Letter quoted in the *Five Points Star*, Five Points, Phoenix, Arizona, Vol. I, No. 32, June 10, 1925.

“A supplementary report of the Special Board of Engineers on the Colorado River development problems was submitted to Secretary of the Interior Work today.

“The report deals with the proposed Canal Project for the irrigation of 3,500,000 acres of land in southwestern Arizona. The engineers do not recommend the construction of this feature and declare it not worthy of serious consideration. The report in full follows:

“In accordance with your request, the committee of engineers appointed by you to consider the problems of the Colorado River has the honor to submit the following report on the Canal project set forth in the report of G. W. Sturtevant and E. L. Stam, dated September 18, 1923.

“This project is a proposal to divert water from the Colorado River at or near Spencer Canyon for the irrigation of 3,500,000 acres of land in southwestern Arizona. The canal with an intake elevation of 2,000 feet would be constructed down the canyon to a point a few miles above Grand Wash; thence by alternating tunnels and open channels it would extend in a southwesterly direction across Grapevine Creek, Hualpai Wash and Detrital or Squaw Wash and the intervening mountain ranges to the Western slope of the Black Mountains about 5 miles east of the old Eldorado Ferry; thence down the west slope and around the southern extremity of the Black Mountains crossing the Santa Fe Railroad about three miles south of Yucca Station, then down the east side of Sacramento Valley and through a long tunnel to the Williams River Valley at the head of Mohave Creek; thence up the Williams Valley crossing Big Sandy and Santa Maria River about 10 miles above their junction; thence in a southwesterly direction across Dato Creek and Bullard Wash, under a low divide into Butler Valley and down the west slope of Harcura Mountains to a crossing of the Santa Fe Railroad about three miles east of Vicksburg Station. Here the main body of irrigable land would begin and the first main lateral would branch off. Thence the main canal would extend eastward through comparatively level country across the Hazsayampa and Agua Fria valleys, through Paradise Valley to a siphon crossing of Salt River at Granite Reef Dam, the canal level being 157 feet above the dam crest; then southeasterly to a crossing of the Gila River about seven miles below Florence; then southwesterly to Casa Grande and westerly to a point eight miles southwest of Maricopa, the elevation at this point being approximately 1,300 feet. The length of this canal is given by the promoters as approximately 548 miles but measurements following the course outlined, on the best contour maps available, give 360 miles to Santa Maria crossing, 420 miles to Vicksburg, 555 to Granite Reef Dam, and 645 to the end. If the canal were actually located it is safe to say that it would be even longer and possibly over 800 miles long. It is our belief that the average length water would have to travel from diversion to land would hardly be less than 700 miles.

“The irrigable area appears to include all the lands that can be reached from this canal. It is known that a portion of this area, particularly in the lower Gila Valley below Sentinel Butte, is unsuited to irrigation and there are also about 300,000 acres now irrigated from other sources which seem to be included. However, it is impossible from information furnished by the promoters of this plan, or any other data at present available, to determine even approximately

the area of lands which could be properly classed as irrigable, and we have grave doubts that so large a body of irrigable land exists under this proposed canal.

“Land in this locality requires for successful irrigation at least three acre-feet per acre delivered. Considering the great length of this canal system, even though all the main canals are concrete lined, loss from seepage and evaporation would certainly amount to 25 per cent to 40 per cent. Taking the smaller amount it will be necessary to divert four acre-feet for each acre of land, or 14,000,000 acre-feet for the season. The maximum use of water in irrigation in this section occurs in July and averages about 13 per cent of the total for the year. This demand will require a canal with a capacity of 30,000 second-feet. The first 35 or 40 miles of the canal would be located in shale along precipitous cliffs and narrow benches within the canyon. Considering the well-known treacherous character of shale when saturated with water, we think it would be necessary to place the entire canyon section of the canal in tunnel.

“Further on the main canal would traverse a great deal of country with steep slopes and so irregular that the construction of a surface canal of the necessary capacity would be exceedingly expensive and might be infeasible.

“Throughout its length, the main canal would cross thousands of water courses varying from small gullies to deep, wide canyons. This region is characterized by local storms of very violent character and at each drainage crossing adequate provision must be made for safely carrying storm waters across the canal. This again would add to the expense of the undertaking.

“Messrs. Sturtevant and Stam state that the total length of tunnels will not exceed 27 miles. Our estimate is over 80 miles, the tunnel from Sacramento Valley into Williams River Valley being alone as long as their total.

“The low water level at Spencer Canyon as determined in the survey made by the Geological Survey during the past summer is 1,112 feet. It will therefore be necessary to construct a dam for diversion about 900 feet high above low water level. It is not known how far below water level satisfactory foundations can be found.

“With our present knowledge of the principles of dam design it is questionable whether a dam from 900 to 1,000 feet high, developing stresses within ordinary allowable limits, is practicable or economically feasible. It is known that the upper 200 feet of this dam would have shale abutments which probably would not be found permissible in a dam of this character.

“There is still to be considered a difficulty which is perhaps the most serious of all—the operation of a canal system 700 miles long with 500 miles of main canal in rough, mountainous country. The difficulties of handling a river with three times the low water flow of the Colorado River along canyon walls, rough lava mountain slopes, and across wide detrital washes for 500 miles are hard to visualize and one break in this canal would mean the shutting off of water to this entire area for a period which would ruin crops. A storage and regulating reservoir on the canal line near the irrigable area of sufficient capacity to tide over such an emergency or indeed to meet the ordinary requirements in operating so huge a system, seems to be unavailable and no mention of such a necessary adjunct to the system has been made by the promoters.

“Messrs. Sturtevant and Stam state that the construction cost of their project, including dam, highline canal, and lateral canals, will be \$290,000,000. It is believed that the actual construction cost of such a project, if indeed it is feasible at all, would far exceed this estimate.

“We consider that this project is inadvisable and is not worthy of serious consideration.’

“The members of the Board of Engineers signing the report include: Spencer Cosby, Corps of Engineers, U. S. A.; W. Kelly, Chief Engineer, Federal Power Commission; E. B. Debler Engineer, Bureau of Reclamation; Herman Stabler, Chief of Land Classification Branch, Geological Survey; F. E. Weymouth, Chief Engineer, Bureau of Reclamation; and Walter R. Young, Engineer, Bureau of Reclamation.

“(P. N. 7005).”—*Memorandum for the Press, Immediate Release*, Department of the Interior, March 22, 1924.

See, also, *Hearings*, H. R. 2903, Part V, p. 815, March 25, 1924.

“MR. HOVLAND: . . . The name itself (High-Line Association) is of no consequence; but the association does gather up that general, growing sentiment in Arizona, which is bent upon looking into the Colorado River projects, and as to the question of where Arizona gets off in the whole scheme of things. The growth of sentiment has been slow, over a considerable length of time; it dates back a year or two.”—*Hearings*, H. R. 2903, Part V, p. 854, March 25, 1924.

“Phoenix, Arizona,  
May 11, 1925.

“Mr. Vernon L. Vaughn,  
State Land and Water Commissioner,

“. . . We now have irrefutable evidence that the Arizona highline irrigation project is feasible . . .

Yours very sincerely,

Fred T. Colter,  
President, Arizona Highline  
Reclamation Association.”—

*The Five Points Star*, Five Points,, Phoenix, Arizona, Vol. I, No. 32, p. 1,  
June 10, 1925.



## APPENDIX II—EXHIBIT KK

### THE SIX-STATE COMPACT

"The delay of Arizona in taking any definite action on the Colorado River Compact prompted me to suggest to Secretary Hoover and others that it might be well for the six states which had already ratified to take legislative action making the compact effective when ratified by six *or more*, thereby leaving the field open to Arizona to enter at her leisure. The fact that the river forms a boundary between Arizona, California and Nevada and also the further fact that the entire Colorado River Canyon in Arizona is held by the United States as the Federal Power Reserve prompted me to make the suggestion without the feeling of any hazard to any of the other states in the event the six or more state plan should be adopted. It was agreed that such a plan should be followed and five of the state legislatures passed similar acts to that end but the municipal ownership group in Southern California who had been promoting the Swing-Johnson bill for Boulder Canyon Dam were unjustly offended at the failure to get Congress to act and felt that the proposed legislation would afford a handsome opportunity to make California's ratification of the compact conditional upon the building of the Boulder Canyon dam by the United States. They accordingly caused a proviso to be attached to the bill passed by the California Legislature making the act effective upon the authorization of the building of the Boulder Canyon dam by the United States. Their action destroyed the desired effect of the six or more state move and is looked upon by the upper states as an outspoken evidence of bad faith."—Carpenter, Delph E., Interstate Compacts Commissioner of Colorado, Denver, *Letter of July 30, 1925.*

#### "CHAPTER 33.

"Assembly Joint Resolution No. 15—Relating to the Colorado River Compact between the states of California, Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming.

"[Filed with Secretary of State April 8, 1925.]

"WHEREAS, The legislature of the states of California, Colorado, New Mexico, Nevada, Utah and Wyoming, have heretofore approved the Colorado River Compact, signed by the commissioners for said states and the state of Arizona, and approved by Herbert Hoover, as the representative of the United States of America, at Santa Fe, New Mexico, November 24, 1922, and notice of the approval by the legislature of each said approving state has been given by the governor thereof to the governors of the other signatory states, and to the President of the United States, as required by article eleven of said compact; and

"WHEREAS, The said Compact has not been approved by the legislature of the state of Arizona, nor by the congress of the United States. Now, therefore be it

"Resolved by the assembly and the senate of the legislature of the State of California, jointly, at its forty-sixth session commencing on the fifth day of January, 1925, a majority of all the members elected to each house of said

legislature voting in favor thereof that the provisions of the first paragraph of article eleven of the said Colorado River Compact, making said Compact binding and obligatory when it shall have been approved by the legislature of each of the signatory states are hereby waived and said compact shall become binding and obligatory upon the State of California, when by act or resolution of their respective legislatures at least six of the signatory states, which have approved or which may hereafter approve said compact, shall consent to such waiver and the congress of the United States shall have given its consent and approval; provided, however, that said Colorado River Compact shall not be binding or obligatory upon the State of California by this or any former approval thereof, or in any event until the President of the United States shall certify and declare (a) that the congress of the United States has duly authorized and directed the construction by the United States of a dam in the main stream of the Colorado river, at or below Boulder canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water; and, (b) that the congress of the United States has exercised the power and jurisdiction of the United States to make the terms of said Colorado River Compact binding and effective as to the waters of said Colorado river.

"That certified copies of the foregoing preamble, and resolutions be forwarded by the governor of the State of California to the President of the United States, the secretary of state of the United States, and the governors of the states of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming."—Mr. Harry Lutgens, Private Secretary of Hon. Friend William Richardson, Governor of California, mailed to the author a leaflet containing the above, and marked "passed."—*Letter of July 27, 1925.*

California's conditional ratification of the six-state Colorado River Compact was accomplished by what is known as the Finney Resolution, a copy of which is set forth above. The following quotation from the argument in favor of Assembly Joint Resolution No. 15 introduced by Assemblyman A. C. Finney, gives some indication of the factions supporting the conditional ratification.

"The Finney resolution has been endorsed by Imperial Irrigation District which serves all the water to the Imperial Valley; by Coachella County Water District; by the Imperial County Farm Bureau; by a statement signed by four of the supervisors of Imperial county in the absence of a meeting; by the Interpost Council of the American Legion in Imperial county; by the American Conservation Club of Imperial county consisting of over 4000 members; by S. C. Evans, as mayor of the city of Riverside and executive director of the Boulder Dam Association, consisting of cities and other organizations numbering more than 200 in Southern California; by John L. Bacon, president of the Boulder Dam Association, and mayor of the city of San Diego; by George E. Cryer, as mayor of the city of Los Angeles; by the Department of Water & Power of the city of Los Angeles; and by many other organizations and individuals.

"There seems to be no doubt that Assembly Joint Resolution No. 15 provides a proper method for California to proceed and has the unqualified approval of those most vitally interested, and the approval thereof by the Legislature is accordingly requested.

"A. C. Finney, Assemblyman, Imperial County; A. C. Murray, Assemblyman, Riverside County; Isaac Jones, Assemblyman, San Bernardino County; Chester A. Kline, Senator, Orange-Riverside-Imperial Counties; Ralph E. Swing, Senator San Bernardino County."—Pamphlet, *Proposed Six-State Colorado River Compact, Argument in Favor of Assembly Joint Resolution No. 15, Introduced by Assemblyman A. C. Finney*, Received at Cambridge, Mass., May 15, 1925.

"WASHINGTON, Dec. 21., (A. P.)—A new Swing-Johnson bill to govern construction of the Boulder Canyon project on the lower Colorado River was introduced in the Senate today by Senator Johnson and in the House by Representative Swing, both Republicans, California.

"Authors of the measure, recognizing the apparent deadlock in efforts to obtain agreement between the seven basin states for a division of the river's waters between the upper and lower basins, have written into the new bill provisions which, they believe, will afford adequate protection of the rights of the various states so that the Boulder Canyon project might not have to wait until the Colorado River compact is ratified by all seven states.

"This section, which is one of a few additions to the old Swing-Johnson bill of last session, would provide for Government ratification of terms of the compact, the instrument to become effective upon ratification of six of the seven states. Users of water benefited by construction of the Boulder dam would, under terms of the measure, be bound by the terms of the compact, a provision which, in the view of Senator Johnson, would give to states of the upper basin the protection they desire of their rights to a fair share of the river's waters.

"The measure would appropriate \$70,000,000 for construction of the project, which includes the All-American canal to the Imperial Valley of California.

"Provision is made also, however, for repayment of \$20,000,000 to the Government from sale of power rights and other benefits of the project, which would bring the cost to the Government to \$50,000,000.

"Under provisions of the bill, the Secretary of the Interior would be empowered to receive applications for right to use for the generation of electric power portions of the water discharged from the reservoir. Leases would be limited to fifty years. The title to canals and incidental works would remain with the Government until it should have been reimbursed.

"The measure would provide that no part of the cost of construction should be charged against lands to be irrigated.

"The purposes of the proposed dam and reservoir, as set forth in the bill, would be: (1) For river regulation and flood control, (2) for domestic and irrigation use, and (3) for power.

"The Swing-Johnson bill was the subject of extended hearings in committees of the Senate and House last session, but neither committee reported it out."—*New Boulder Canyon Dam Measure Calls for Sanction by Six of Seven States*, Arizona Republican, Phoenix, Dec. 22, 1925, p. 1.

See, also, H. R. 6251, *A Bill to Provide for the Protection and Development of the Colorado River Basin*, Sixty-Ninth Congress, First Session, Dec. 21, 1925.

"The Compact, as you probably know, has been ratified by six of the seven States—Arizona alone having failed to ratify it. Inasmuch as its purpose is to apportion the waters between the upper and lower groups of States, it would not seem practicable for the six States to operate under it leaving Arizona to her own devices."—Merrill, O. C., Executive Secretary, Federal Power Commission, *Letter of June 25, 1925.*

APPENDIX II—EXHIBIT LL

SUPPLEMENTARY TRI-STATE AGREEMENTS

1. Proposed Compact of December 1, 1925.
2. Arizona's Analysis of Proposed Compact of December 1, 1925.
3. Arizona's Counter-Proposal of December 14, 1925.

1. *Proposed Compact of December 1, 1925.*

"The states of Arizona, California and Nevada, by their proper authorities, have appointed representatives for the purpose of negotiating a compact between said states in reference to the use of the waters of the Colorado river and after negotiations between said respective representatives they have agreed upon the following articles:

"Article 1. The purposes of this compact are to provide for the equitable division and apportionment of the use and benefits of the waters of the Colorado river; to establish the relative importance of different beneficial uses of said waters; to promote interstate comity; to remove causes of future controversies; to bring about the effectiveness of the Colorado river compact, and to secure the development of the Colorado River.

"Article II. As used in this compact:

"(a) The term 'Colorado river' means the main stream of the Colorado river at and below Lee Ferry, together with any land and all tributaries, within any of the signatory states, entering said river below Lee Ferry except the Gila river and its tributaries, the Williams river and its tributaries and the Virgin river and its tributaries; the mouth of each of said rivers above excepted shall be deemed to be the highest point to which the flood or back waters from the Colorado river may extend whether caused by artificial means or otherwise.

"(b) The term 'Colorado River Compact' means that certain instrument or compact respecting the Colorado river signed by the commissioners from the states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, and approved by Herbert Hoover as the representative of the United States of America, at Santa Fe, N. M., November 24, 1922.

"(c) The term 'operative horsepower' shall be understood to mean the average for the year, at the plant switchboard, of the fairly maximum generated horsepower that is sustained continuously for a period of 90 minutes.

"(d) All other terms, words, phrases or expressions, used in this compact shall be understood to be used in the same sense and with the same meaning as used in the Colorado river compact hereinabove defined.

"Article III. (a) The states of California and Nevada hereby release to the state of Arizona any and all claims of every kind or nature to the use of the waters of the Gila river, the Williams river and the Little Colorado river

and all of their respective tributaries for agricultural and domestic use and the states of Arizona and California hereby release to the state of Nevada any and all claims of every kind or nature to the use of the waters of the Virgin river and all of its tributaries for agricultural and domestic use, in consideration of which there is hereby allocated from the waters of the Colorado river to the state of California 1,095,000 acre-feet of water per annum in perpetuity for beneficial consumptive use.

“(b) There is hereby allocated to the state of Nevada such waters of the Colorado river as can be put to beneficial use within the state not exceeding 300,000 acre-feet of water per annum for beneficial consumptive use in perpetuity.

“(c) There is hereby allocated from waters of the Colorado river to the state of Arizona, its present perfected rights to the beneficial consumptive use of 232,000 acre-feet of water per annum in perpetuity.

“(d) There is hereby allocated from the waters of the Colorado river to the state of California its present perfected rights, in addition to all other allocations, the beneficial consumptive use of 2,146,600 acre-feet of water per annum in perpetuity.

“(e) The use of waters of the Colorado river not otherwise hereinabove expressly allocated, is hereby allocated in equal shares to the states of Arizona and California, it being the intention of the signatory states, subject to the terms of the Colorado River Compact to divide for use in said states all of the waters of the Colorado river; provided, that any water allocated by this paragraph (e) but not actually applied to agricultural or domestic use by January, 1975, shall thereafter, notwithstanding the foregoing allocation, be subject to appropriation for use in either Arizona or California.

“Article IV. It is the intention of the signatory states to so divide the waters of the Colorado river as to provide for the maximum use thereof within said states and notwithstanding the foregoing allocations no state shall withhold water and no state shall require the delivery of water which cannot reasonably and beneficially be applied to agricultural or domestic use, within said state.

“Article V. The chief official of each signatory state charged with administration of water rights, together with the commissioner of reclamation of the United States, shall co-operate, ex-officio, to promote the systematic determination and coordination of the facts as to flow, appropriation, consumption, and use of water from the Colorado river and the interchange of available information on such matters.

“Article VI. That in the event the United States of America shall construct a dam in the main stream of the Colorado river at or near Boulder Canyon, creating a reservoir of not less than 20,000,000 acre-feet of water, at which hydro-electric power shall be generated by persons or agencies other than the United States of America, then such persons or agencies generating such power at said dam shall each pay to the secretary of the interior \$1 per annum for each operative horsepower which may be installed by him or it for his or its benefits, in addition to any and all other requirements by the United States, which said sums so paid shall be paid by the secretary of the interior to the state of Arizona and Nevada, in equal parts, annually, said payments to be made at such times

and under such reasonable regulations and in such installments as the secretary of the interior may, by general order, prescribe. No payment under this article shall be required until power generating machinery upon which said payment is based shall have been placed in actual operation. The provisions of this article shall not be construed as affecting, or intending to affect, the taxing power of any of the signatory states, but that in the event of any of such persons or agencies generating power at said dam shall pay any tax, assessment, impost, or other liability, demand or charge upon said power or works thereof, then and in that event, for the year immediately following such payment, the amount of money so paid shall be deducted from the amount to be paid to the secretary of the interior as hereinabove in this article provided, for the benefit of the state to whom such payment was made. The payment of said sums to the said secretary of the interior for the benefit of Arizona or Nevada shall be in lieu of all license or other fees, now or which may hereafter be required by the said states, or either of them for the use, license or privilege of storing water, or building and operating generating plants, transmission lines or otherwise in connection with the said dam.

“Article VII. Should any claim or controversy arise between any two or more of the signatory states over the meaning or performance of any of the terms of this compact then, upon the request of the governor of any one or more of the signatory states, it shall be the duty of the governors of each of the signatory states to appoint a commission with power to consider and adjust such claims or controversy, subject to ratification by the legislatures of the states affected and by the Congress of the United States.

“Nothing herein contained, however, shall prevent the adjustment of any such claims or controversies by any present method or by direct legislative action of the interested states, with the approval of the Congress of the United States.

“Article VIII. In the event this compact should at any time be terminated by unanimous agreement of the signatory states all rights established under it shall nevertheless continue unimpaired.

“Article IX. The provisions of this compact have reference to the use of the waters of the Colorado river for agricultural and domestic use only and have no reference to the use of said waters for the generation of electric power, except that the use of said waters for the generation of electric power shall forever be and remain subordinate to the use thereof for agricultural and domestic purposes, and except further as hereinbefore expressly provided in Article VI hereof.

“Article X. Jurisdiction in the United States of America to construct the said dam and incidental works referred to in Article VI hereof, is hereby conceded and consent is hereby expressly given by the signatory states to said construction and to the use and benefit of any property of the respective signatory states which may be found necessary or convenient of use by the United States of America for said purpose.

Article XI. This compact shall become binding and obligatory when the Colorado River compact has become binding and obligatory upon all of the signatory states thereto and when this compact shall have been approved by the legislatures of each of the signatory states hereto and by the Congress of the United

States. Notice of the approval by the legislature shall be given by the governors of each of the signatory states to the governors of the other signatory states and to the President of the United States and the President of the United States is requested to give notice to the governors of the signatory states of the approval by the Congress of the United States.

"In witness whereof the representatives of the states of Arizona, California and Nevada have signed this compact in a single original which shall be deposited in the archives of the Department of State of the United States of America, and of which a duly certified copy shall be forwarded to the governor of each of the signatory states."—*Text of the Proposed Tri-State Colorado River Compact*, Arizona Republican, Dec. 2, 1925.

## 2. *Arizona's Analysis of Proposed Compact of December 1, 1925.*

"Article I. While the purpose of this conference may be to negotiate for the division or allocation of the waters of the Colorado River between the three lower States, one State can have no proper concern with the use any other State may choose to make of its own waters. Therefore, any definition of, or agreement as to, the relative importance of this beneficial use is not a proper subject of consideration, or of interstate agreement.

"Article II. The definition of the term 'Colorado River', subdivision 'a' of this Article, in effect would cause the mouth of each of the tributary streams to be different from the geographical mouth. If a dam is constructed in the Colorado River which would back waters up the channel of any of the tributary streams, the mouth of the stream would be as far in the interior of Arizona as the dam would back up the water, and the proposed release by California, contained in Article III, would be a release of the waters of the tributary streams above the artificial mouths so created. Subdivision 'c' of Article II proposes an artificial definition of the term 'Operative Horse Power.' Why this artificial term should properly be substituted for the well defined method of measuring electrical power in common use in the industry, is not apparent.

"Article III. It is proposed by subdivision 'a' of this Article, that California and Nevada will release to the State of Arizona any and all claims to the use of the waters of the Gila, Williams and Little Colorado Rivers, and their tributaries, for *agricultural and domestic use only*. This would *exclude* use for power purposes. It is likewise proposed that Arizona and California should similarly release to Nevada the waters of the Virgin River for *agricultural and domestic purposes only, excluding power*. Neither California or Nevada has, or can have, any claim whatsoever in, or to, the waters of the Gila, Williams and Little Colorado Rivers. Neither does Arizona or California have any claim in, or to, the waters of the Virgin River. Nevertheless, in consideration of its release for the limited purposes mentioned, of the waters of these streams to which California has not the slightest shadow of a claim, it is proposed that the States of Nevada and Arizona shall allocate from the waters of the Colorado River to the State of California 1,095,000 acre-feet per annum perpetually for *beneficial consumptive uses which includes* use for power development as well as agricultural and domestic purposes.

"By subdivision 'b' of Article III, it is proposed to allocate to the State of Nevada for *beneficial use*, a quantity of water not exceeding 300,000 acre-feet

per annum, but only so much as can be beneficially used within the State of Nevada; thus precluding Nevada from selling outside of its own boundaries any power that might be generated by the waters so proposed to be allocated to said State; thus undertaking to dictate to the State of Nevada the uses to which she shall apply her water.

“For the same consideration, in subdivision ‘c’, it is proposed to allocate 232,000 acre-feet per annum from the waters of the Colorado River to the State of Arizona, to all of which water the users thereof have heretofore acquired complete title by appropriation.

“For the same consideration it is proposed, in subdivision ‘d’ to allocate to the State of California for *beneficial consumptive use*, an additional 2,146,600 acre-feet per annum, making a total of 3,241,600 acre-feet, and it is then proposed, by subdivision ‘e’, that what is left shall be divided equally between the States of Arizona and California, and even then it is proposed that if the State of Arizona should not apply its half to a beneficial use within the next 49 years, that California might come in and appropriate it.

“Article IV. This article is pernicious in the extreme. In effect by its terms it might utterly destroy the effect of any division of waters by the States. By the clause, ‘No State shall require the delivery of waters which cannot reasonably and beneficially be applied to agricultural and domestic uses within the State,’ it leaves open to controversy the feasibility of any irrigation project that Arizona might undertake for the development of her own lands.

“Second: The beneficial use must be wholly within the State of Arizona and would drive Arizona out of every power market outside of the State unless the terms ‘agricultural’ and ‘domestic uses’ are broad enough to include power development. It is noticeable that when referring to the use of water in the State of Arizona this agreement limits use to agricultural and domestic purposes while for California it is ‘For any beneficial uses whatsoever’. For Arizona to surrender her right to divert the waters belonging to it from the Colorado River wherever and for whatever purpose Arizona may choose and to limit the sale of power development from her own resources to the confines of the State of Arizona, would be to surrender her sovereign rights to the control of the river and its waters, and in effect, vest those rights in the state of California.

“Article V. No Comments.

“Article VI. We assume that the State of Arizona cannot give its consent to the construction of a dam at, or near, Boulder Canyon. No sufficient data is at hand to fix the charge or royalty upon hydro-electrical power and this whole article is one which would require a very great deal of expert knowledge and the collection of considerable data before any of its provisions should even be considered.

“Article VII. The proposed method of settling controversies is quite unsuitable. In view of the fact that Nevada has already climbed under the blankets with California it would be suicidal for Arizona to agree that any controversy arising should be determined by a majority of the three States. Reference to legislatures and to congress for settling controversies is probably the most unsatisfactory that could be devised in view of California’s well known ability to maintain a lobby at Washington.

"Article VIII. This is apparently objectionable as the contemplated possibility of dissolving this compact after California has acquired all she wants.

"Article IX. As before suggested, the division of waters should be to each State for *all beneficial uses*, to be determined by each State for itself, and the water allocated to any one State should not under any circumstances revert to any other State.

"Article X. The State of Arizona cannot accede to the provisions of this Article. It would be a surrender of her sovereign rights, surrender of territory and a breach of her sovereign duties to her citizens, to give such consent.

"The proposed division of waters, awarding to California 3,241,600 acre-feet, 300,000 acre-feet to Nevada and 262,000 acre-feet to Arizona, which is already appropriated, and to divide the unknown remaining quantity, which may not exist, between Arizona and California, would be the height of absurdity and folly."—White, Judge Samuel, Legal Adviser to Governor George W. P. Hunt, Arizona, White and McMurchie, Lawyers, 409-411 Luhrs Building, Phoenix, *Analysis of California's Proposition*, Received at Cambridge, Mass., December 16, 1925.

### 3. *Arizona's Counter-Proposal of December 14, 1925.*

"The States of Arizona, California and Nevada have appointed representatives for the purpose of negotiating an agreement among said states in reference to the waters of the Colorado River, who, after negotiations, have agreed upon the following articles:

"Article I. It is recognized by the parties hereto that the unregulated normal flow of the Colorado River is insufficient to properly irrigate the lands already under cultivation by irrigation from the waters of said river; that the benefits of the storage of the flood waters of said river within the United States belong wholly to the citizens of the respective states; that without disparagement of the treaty making power of the United States government, the states party hereto and Congress of the United States in consenting to this agreement shall be understood as declaring: That it is their purpose to utilize within the borders of such states all of the waters of the normal flow of the Colorado River heretofore appropriated and put to beneficial use in accordance with the laws of the states in which the same are being put to beneficial use, and all of the flood waters of the Colorado River capable of being utilized within the borders of the United States, for any purpose by the construction of storage dams within the United States, and particularly that the Republic of Mexico and the citizens thereof shall take notice that they can not acquire any moral or equitable claim to the waters of the Colorado River temporarily made available for use in said Republic of Mexico by the regulatory effect of any dam or dams constructed in pursuance of this agreement as it is the intention and purpose of the states party hereto and the United States to ultimately utilize all such waters within their own borders. Any express or implied acknowledgment of rights to the Republic of Mexico to the waters of the Colorado River by any instrument, agreement or compact signed prior to this agreement which is inconsistent with the declarations of this paragraph, if there be any such inconsistent acknowledgment or declaration, is hereby withdrawn and shall not be renewed or reasserted without the consent of the states party hereto.

“Article II. The States of Arizona, California, and Nevada hereby agree that the waters of the Colorado River and its tributaries in said states shall be divided, allotted and appropriated as follows:

“(a) All of the waters of the tributaries of the Colorado River which flow into said river below Lee Ferry, Arizona, are hereby allotted and appropriated exclusively in perpetuity to the states in which such tributaries are located, and may be stored in and diverted from said tributaries or the main channel of the Colorado River for use in said states.

“(b) There is hereby allotted and appropriated to the State of Nevada for use in said state that portion of the total amount of water of the main Colorado River as measured at Lee Ferry, which can be beneficially used for agricultural and domestic purposes, not exceeding 300,000 acre-feet per annum.

“There is hereby allotted and appropriated for agricultural and domestic use to each of the States of Arizona and California from the remainder of the water available as measured at Lee Ferry, one-half of the waters of the Colorado River.

“(c) Any diminution of the amount of water allotted to each state between the point of measurement and the point of delivery, caused by evaporation and seepage in storage or in transit, shall be borne by each state from its original allotment.

“(d) The States of Arizona, California and Nevada hereby agree to limit and control future appropriations and beneficial use of water in said respective states to such an amount and in such manner as will insure that present perfected rights in each said state will be fully protected and supplied out of waters hereby allotted to said state.

“Article III. The following rules shall apply to the use and storage of water under this agreement:

“(a) The use of water for irrigation and domestic purposes allotted in Article II hereof shall be superior to any right of storage for power purposes or navigation and any of said states may divert from the river the water allotted to it at any point on the river, provided that if any state shall take any water so allotted to it out of the main channel of the Colorado River at a higher elevation than the highest elevation of the bed of said river in said state, the works constructed for such purpose shall not interfere with a beneficial development in the state entitled to develop such fall of the river and the state or states taking out water at such higher elevation shall fully compensate the other states affected thereby for the loss of power caused thereby to such states.

“(b) The prior construction of any dam or reservoir for power purposes shall not give any prior or superior right to such dam or reservoir to the regulation of the flow of the river for the benefit of such dam or reservoir, but the rights of all dams and reservoirs constructed under this agreement for power purposes shall be on an equality regardless of the date of construction thereof subject to the following:

“(1) Yearly and seasonal stored water shall be held at as high elevations on the river as possible in order to reduce evaporation losses and provide regulation for power as well as for irrigation, domestic and flood control purposes.

"(2) Re-regulation storage for seasonal and daily variations in demand shall be located as close to the land to be irrigated as possible and water for irrigation and domestic purposes shall be supplied first from the nearest reservoir above the point of diversion of such waters.

"Article IV. The territory of no state shall be entered upon for the purpose of construction or maintaining works utilizing the water of the Colorado River except with the consent, and subject to the laws, of such state.

"Article V. The necessity for flood protection and development of the Colorado River as herein provided for is hereby recognized and established. All private or public lands in Arizona, California and Nevada that are necessary for the construction and operation of works for the control and utilization of the Colorado River for flood protection, irrigation and domestic uses of water and the construction of dams for power purposes in pursuance of the provisions of this agreement shall be subject to the right of eminent domain of the state wherein such lands are located unless they have already been put to a more necessary public use.

"Article VI. Each of the states party hereto, and the United States, recognize the acute necessity for flood and drought protection for lands now in cultivation by irrigation from the waters of the Colorado River and hereby pledge their good faith to grant the necessary permits and licenses for such construction, also rights of way to any district or agency that may be created in pursuance of the terms of this agreement for the immediate construction of a reservoir in the main channel of the Colorado River at such point as may be determined upon by the Federal government, if it be a government project, or by the majority of the states party to this agreement if by some other agency. Such permits, licenses and rights of way shall include those necessary for the construction of the dam and reservoir and appurtenant works including hydro-electric power plants and transmission lines; provided, that no dam or other works shall be built in the bed of the Colorado River at any point in the river which when constructed will back up the water of the river so as to limit or interfere with the construction of a dam selected by any of the states for the diversion of water for irrigation or domestic purposes in that state.

"Article VII. Any state in which reservoir sites exist in the Colorado River or its tributaries, directly or through any district or agency created in pursuance of and hereafter authorized by laws of said state, may build dams, hydro-electric power plants and appurtenant works in such state and operate or lease the same. Where the reservoir is situated in two or more states, such dams, power plants and appurtenant works may be built, operated or leased jointly by the two or more states, or by any district or agency that may be created in pursuance of the laws of such states. Such state or states may sell or lease the power produced by such dams or power plants, and may impose taxation on such dams, power plants, transmission lines and other property incident thereto, and may collect royalties on the power produced by such dams or power plants or any of them or impose tax on such power or provide for both such tax and royalties on such power. Where development works are constructed in two or more states, the entire hydro-electric plant, including dams, reservoirs, power houses and appurtenant works shall be considered a unit in all matters relating to the financing

of construction, the operation, lease, collection of royalties and taxation, regardless of the location of the power plants with reference to state boundaries. The cost of the construction of all such development works shall be borne by the respective states, districts or agencies created in pursuance of the laws of such states, and all power and revenue from the sale or lease of power, or royalties on the same, or taxation of such power or works, shall be divided among the states in direct proportion to the present amount of fall which the river makes in each state between the dam and the elevation of the bed of the stream reached by the back water when the reservoir is filled. Where the river forms the boundary between two states, each state shall be allotted one-half of the fall which occurs in the present river bed on such joint boundary for the purpose of computing the relative proportions allotted to each state.

“Article VIII. The use of power developed by such dams and works shall never vest in perpetuity in any private person or corporation, but the states and citizens of states in which such power is developed shall have preferred rights to its use whenever the need for it may arise; provided, that leases for the use of power for terms not exceeding fifty (50) years may be made by any such state or states, or any district or agency hereafter created in pursuance of law when approved in such manner as may be provided by the laws of such state or states in which the power sites are situated; provided further, that any state party hereto shall have the right to grant in perpetuity to any political subdivision or municipal corporation of such state the share of the power to which such state is entitled under the provisions of Article VII hereof.

“Article IX. In the construction and operation of all dams and power plants for the utilization of the waters of the Colorado River, undertaken in pursuance of the terms of this agreement, the following rules shall apply:

“Where such dams and power plants are located wholly in one state, the laws of that state shall govern such construction and operation. Where such dams and power plants are located in more than one state, the states affected shall agree upon the plans and rules and regulations for such construction and operation and upon the agency to be adopted for such joint construction and operation; provided, that in the event two states are affected and they shall be unable to agree upon any such matter each of said states shall appoint a competent person as arbitrator and the two arbitrators so appointed shall agree upon a third arbitrator and the three arbitrators so appointed shall determine all such matters not agreed upon by said states.

“Article X. Whenever the construction of a reservoir in two or more states shall be determined upon, the states in which the same is situated shall agree upon the royalties and taxes to be collected on the power to be produced by such reservoir and the works connected therewith and make any agreement that may be necessary to the taxation of such reservoir and works, provided said states shall be unable to agree or it shall be found impracticable to carry out a satisfactory agreement because of restrictions in the constitutions of said states or any of them, said states shall have allotted to them for their several use, benefit and disposition their proportionate share (as determined by Article VII.) of the power produced by such reservoir and works.

“Article XI. In the event the United States shall undertake the construction, financing and operation of any development on the Colorado River, for flood

control, irrigation or power purposes, and requires the repayment of funds advanced for such purposes, such repayment to the government shall be made in accordance with the United States Reclamation Act and amendments thereto. Each state shall assume an obligation in proportion to the allotment of water and power as provided in this agreement, and assure the government the repayment of all construction costs together with any interest charged for the full amount so advanced.

“The allocation of water and power, as in this agreement provided, shall insure to the benefits of the states party hereto. Operation and administration of the same shall be under such state agencies as are created in accordance with the irrigation laws of the respective states. After all obligations to the government have been met, the entire benefits shall become the property of the states interested, as provided in Article VII. of this agreement. The contract with the United States to construct works in the state shall provide for dams, power plants, irrigation works, canals and pumping plants which will enable each of the respective states to irrigate in each state an amount of land proportionately equal to the allotment of water of such state. Any irrigation development where there is a cost for pumping shall be the beneficiary of the revenues derived from the sale of any portion of the power which is allotted to the respective states. Contracts for the sale of power shall be made agreeable to the respective states within which the power is developed.

“Article XII. This agreement shall not become effective until it is approved by the Legislatures and Governors of the States of Arizona, California, and Nevada, and by the Congress of the United States.

“Submitted by the Arizona Committee. Cleve W. Van Dyke of Miami, Chairman; H. S. McCluskey of Phoenix, Secretary; Thomas Maddox of Phoenix; F. A. Reid of Phoenix; A. G. McGregor of Warren.”—Pamphlet, *Plan of Development of the Colorado River Submitted by Arizona Delegation to California and Nevada Delegations, December 14, 1925*, State Capitol, Phoenix, Arizona.

## APPENDIX II—EXHIBIT MM

### PROTECTION TO UPPER BASIN STATES BY PROVISIONS IN FEDERAL LEGISLATION

1. The Two Theories Involved.
2. The Position of Representatives of the Upper Basin States.
3. The Position of Representatives of the Lower Basin States.
4. The Hamele-Bannister Controversy.
5. A Somewhat Similar Problem in the History of the United States.

#### 1. *The Two Theories Involved.*

"MR. HAMELE: There are two theories that are pertinent to this discussion. One is that the right to the use of water from innavigable streams in the arid West arises from the State; that the appropriator gets his right from the State. The other theory is that the right comes from the Federal Government; that the Federal Government still owns all of the unappropriated innavigable water of the arid West and, therefore, has the power to dispose of it."—*Hearings*, H. R. 2903, Part V, p. 882, March 25, 1924.

#### 2. *The Position of Representatives of the Upper Basin States.*

"In conclusion, I may add, touching the question of whether or not it would be possible to so amend the bill as to protect the upper States, that the question is involved in such grave doubt that no upper State would dare risk the validity of the attempt. The protection of the upper States by Congress would involve an attempt on the part of the Congress to effect distribution or division of water between the States or the group of States. It is doubtful if there can be found anywhere in the Constitution an express or an implied power to effect any kind of a division whatsoever of the waters of the Colorado River system, although it is certain that in the event of controversy the Supreme Court of the United States would have the authority to make a division under its constitutional power to determine controversies between States. Since the Federal Government does not possess any riparian right in any of these States and is therefore not the owner of any of the unused or unappropriated water in the States where the dam is to be built, or, for that matter, in six out of the seven States of the basin, it follows that the Federal Government has no property right in respect to the waters upon which to base an authority to divide them among the States, and since the United States has not made a treaty with Mexico requiring the United States in any wise to effect a division of the water between the States, the Congress would have no power to make a division based upon the international character of the stream. And, finally, since the purpose of the Boulder Canyon project bears no relation to the regulation of commerce, there is nothing in the interstate commerce clause of the Constitution that confers upon Congress the

power to divide the water between the States. Thus it would seem that the authority of the Federal Government is not to be extended beyond what it would be if the stream were not international in character and if it were, as I believe it is, non-navigable."—Bannister, L. Ward, *Letter of Feb. 21, 1924, to Hon. Addison T. Smith, Chairman, Committee on Irrigation and Reclamation, House of Representatives, Washington, D. C., Hearings, H. R. 2903, Part I, pp. 206-207, Feb. 20, 1924.*

"MR. LEATHERWOOD: . . . I deny that Congress has the right to allocate the waters between these seven States in the Colorado basin; that if there has to be an adjudication of their rights outside of the purview of the terms of the so-called Colorado River Basin compact it will have to be done where the Constitution says it will have to be done, that controversies between the States must be settled in the judicial department of the Government."—*Hearings, H. R. 2903, Part IV, p. 795, March 21, 1924.*

### 3. *The Position of Representatives of the Lower Basin States.*

" . . . We say that in a measure such as this (the Swing-Johnson bill) that Congress has the power, by an appropriate provision in the bill, to extend full protection to the upper States, and it is to that provision I wish to address myself particularly.

"We prepared and submitted to the House committee a form of reservation expressing our ideas. I will state briefly our theory—

"THE CHAIRMAN: You wish to put that in the record?"

"MR. CARR: Yes.

"THE CHAIRMAN: Very well.

"(The form of reservation presented by Mr. Carr for the record is here printed in the record in full, as follows:)

"Section 8. That the United States in managing and operating the dam, canals, and other works herein authorized, including the furnishing or delivery of water for the generation of power, irrigation, or for other uses, shall observe and be subject to and controlled by the compact commonly known as the 'Colorado River Compact,' between the States of Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming, as executed at Santa Fe, N. Mex., on November 24, 1922, by representatives of said States, and approved by a representative of the United States when the same shall have been ratified by all of the signatory States and approved by Congress, or any other compact between said States and approved by the Congress, apportioning or regulating the use of the waters of the Colorado River, herein for convenience designated 'compact'.

"That pending and until the ratification and going into effect of such 'compact' the United States shall observe and be subject to and controlled by all the provisions and stipulations respecting the apportioning, appropriation, use, and delivery of the waters of the Colorado River as contained and expressed in said Colorado River compact, herein for convenience termed 'Santa Fe compact,' as executed at Santa Fe, N. Mex., on November 24, 1922. For the purpose of this section the expression 'Santa Fe compact' shall be deemed to refer to the

compact above in this paragraph referred to, but modified to provide that the date for the commencement of the measurement of water be the 1st day of October after the passage of this act, and also to provide that surplus waters referred to therein be deemed subject to the rule of equitable division as between the States.

"A. Also, all rights of the United States in or to waters of the Colorado River used in connection with, regulated by, or arising out of the project herein authorized, whether by appropriation under the laws of Arizona, Nevada, or California, or otherwise, as well as the rights of those claiming under the United States, shall be subject to and controlled by such 'compact' and, pending and until the ratification and going into effect thereof, said 'Santa Fe Compact'.

"B. Also, all contracts, concessions, leases, permits, licenses, and other privileges from the United States, or under its authority, concerning the use of said dam or other incidental works or water stored thereby for the generation of power or other purposes, shall be upon the express condition and with the express covenant that the rights of the recipient or holder thereof to the use of the waters stored by said dam shall likewise be subject to and controlled by such 'compact' and, pending and until the going into effect thereof, said 'Santa Fe compact.'

"C. Also, all contracts, concessions, leases, licenses, permits, or other privileges from the United States or under its authority concerning the delivery or use of waters of the Colorado River from the canals herein authorized shall be upon the express condition and with the express covenant that the rights of the recipient or holder thereof to such waters shall likewise be subject to and controlled by such 'compact' and, pending and until the ratification and going into effect thereof, said 'Santa Fe compact.'"

"D. Also, all rights of way or other privileges from the United States or under its authority in respect to the public domain and necessary or convenient for the use of the waters of the Colorado River at or below the northern line of Arizona as well as for power plants at or transmission lines from said dam, shall be upon the express condition and with the express covenant that the rights of the recipient or holders thereof to waters of said river for the use of which said right of way or other privilege is necessary, convenient or incidental, shall likewise be subject to and controlled by such 'compact' and, pending and until the ratification and going into effect thereof, said 'Santa Fe compact'.

"E. The conditions and covenants referred to in subdivisions B, C, and D shall be deemed to run with the land and the water right, and shall attach as a matter of law, whether expressed in the instrument evidencing the privilege or rights or not, as shall also the limitations upon claimants under the United States referred to in subdivision A.

"F. The provisions of this section shall run to the benefit of and be available to the States of Colorado, New Mexico, Utah, and Wyoming, and to the users of water therein, by way of defense or otherwise, in any litigation, respecting the waters of the Colorado River.

"G. Nothing herein shall be deemed to constitute a relinquishment by the United States as of any of its rights in respect to navigation, except and

otherwise than by approval of a compact between the States referred to."—*Hearings*, S. 727, Part I, pp. 43-45, Dec. 22, 1924.

See, also, *Hearings*, H. R. 2903, Part IV, pp. 567, 570-571, 576, March 14, 1924.

#### 4. *The Hamele-Bannister Controversy.*

a. *Bannister's answer to Hamele's contention that the rights of the upper States could be safeguarded by adding to the pending Swing-Johnson bill a provision to the effect that all contracts made under the bill with water users should be subject to the Colorado River Compact whether ratified or not.*

"Underlying this proposition by Mr. Hamele is the assumption that the Federal Government had riparian rights prior to statehood and therefore still has a right of a property nature to make use of the unappropriated waters and therefore is in a position to say that such part of the unappropriated waters as the upper States would be entitled to under the compact could be allocated to the upper States without the necessity of a compact.

"The upper States can not run the risk of Mr. Hamele's underlying premise being sound, for

"Six of the seven States take the view that the Federal Government never had any riparian rights and therefore does not now possess any property right in respect to the use of the unappropriated waters.

"The United States Supreme Court held in *Kansas v. Colorado* that it is within the power of States to say whether the appropriation system rather than the riparian shall exist and not within the power of the Federal Government to say it shall not exist; and this case comes closer than does any other to a decision of this great question, although the Department of Justice at times has claimed, and Mr. Hamele claims, that the Federal Government had and has such rights as a matter of property."—*Bannister, L. Ward, Letter, as President of the Denver Chamber of Commerce, to Hon. E. O. Leatherwood, Denver, April 7, 1924, in answer to letter from Leatherwood submitting copy of testimony of Hamele, Hearings, H. R. 2903, Part V, p. 901, March 25, 1924.*

b. *Bannister's answer to Hamele's proposition that assuming that the States and not the Federal Government are the lawful disposers of the unappropriated waters of the Colorado River, the upper states could be protected by a simple regulation promulgated by the Department of the Interior to the effect that water users under the Boulder Canyon project would hold their rights subject to the Colorado River compact whether ratified or not.*

"The upper States could not be protected in this way, for

"1. The present Reclamation act requires that appropriations made by the Federal Government shall be made under the laws of the States, whereas those laws do not recognize any appropriations made with self-limitations imposed in favor of States outside of the State wherein the appropriation is made.

"2. Such a regulation amounts to a division of water among States on an interstate stream, and, while Congress certainly has authority to dispose of its land rights by virtue of being an owner of Federal Lands within the states, it

does not follow at all that it has any power to dispose of water rights. If six of the seven States of the Colorado River Basin are right as to their fundamental theory the Federal Government has no water rights to dispose of, and the creation of appropriation rights is solely within the province of the States. If the States themselves can not agree concerning a division of the use of water, then the division is to be made, not by the Congress, which possesses no express or implied powers to effect such a division but by the Supreme Court which may formulate a rule of division and apply it under and by virtue of its constitutional authority to settle controversies between States. While it must be conceded that the Congress in disposing of the lands of the United States has powers which are to be implied by virtue of the power expressly granted by the Constitution to 'dispose of' the Federal lands, yet it is scarcely believable that to the express power referred to there would be added by implication the power to divide water between states in view of the fact that such power of division is not necessary to the exercise of the express power and would effect so fundamentally the relative opportunities of economic development on the part of the interested States."—*Ibid.*, pp. 906-907.

"Let us suppose the Colorado Commission should fail to reach an agreement. It has been suggested that in that event the Congress would take over the distribution of water through some Commission or agency of its creation. This could not be done lawfully and the states would resist the attempt.

"The unappropriated waters of the Colorado River are not owned by or subject to the control of Congress when it comes to creating rights by appropriation for various beneficial uses within the states. The unappropriated waters are not owned by anybody, not by any of the states and not by the Federal Government but property rights in respect to their use may be created in them by the state in which they are found through the exercise of the political power of the state and those appropriating persons whether private individuals, corporations, municipalities, states or even the United States, become the owners of water rights, where appropriations have been made, through the exercise of political power of the state.

"Since the Federal Government neither owns the waters nor has control over them for the purpose of creating property rights in the form of appropriation rights, the Congress would have no power to create a commission or agency to effect a distribution of the water among the states. In the event of there being no compact, the only way in which a controversy between the states could be decided, and the only way through which the Federal Government could exercise any powers would be through the Supreme Court of the United States which is vested with authority to decide controversies between states. That court could divide the waters and probably would do it in accordance with the principle of 'equitable division' as already once decided in *Kansas vs. Colorado*. The court itself could go even further and appoint a master or a commission to continue in existence indefinitely for the purpose of supervising the division as among the states, leaving however, each state through its own state engineer to divide among its own appropriators the water thus allotted to it by the Supreme Court and the commission created by it."—Bannister, L. Ward, *Memorandum of Remarks*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 135, 140, March 31, 1922. Cf. *Hearings*, H. R. 2903, Part I, p. 194, Feb. 20, 1924.

On the question of the Supreme Court's appointing a master or commission, see, also, *Pennsylvania v. West Virginia*, 262 U. S., 553, Dissent of Mr. Justice Brandeis.

5. *A Somewhat Similar Problem in the History of the United States.*

"J. Clancy Jones of Pennsylvania well expressed in the House of Representatives in the next year the Northern Democratic view of the Kansas-Nebraska Act of 1854. The act, he said, is not direct legislation at all, but merely a legislative declaration that the acts of 1850 were inconsistent with the act of 1820 and that consequently the Missouri Compromise Act of 1820 was inoperative and void. The Act of 1854 did not repeal the Missouri restriction; it declared it void, and asserted that by the Compromise measures of 1850 the principle of non-interference with slavery in the Territories by Congress was established and that this principle would apply to all Territories hereafter organized. Charles H. Jones's *J. Clancy Jones*, I, 301." Channing, Edward, *A History of the United States*, Note 2, p. 159. Volume VI, *The War for Southern Independence*, New York, 1925.

"Benjamin F. Perry of South Carolina in an address entitled *To the Democracy of the Fifth Congressional District in South California* stated the reasons why he did not go with his fellow delegates. Some Southerners, he contended, thought that neither Congress nor the territorial legislatures could exclude slavery or impair it; others insisted that it was the duty of Congress to protect slavery in the Territories by the passage of a slave code;—and the South Carolina democracy split on this question at Charleston."—*Ibid.*, Paragraph 2 of Note 1, p. 239.

APPENDIX II—EXHIBIT NN

THE JAMES B. GIRAND PROJECT

"The Chairman submitted for the consideration of the commission the following letter from Mr. O. C. Merrill, Executive Secretary of the Federal Power Commission, relative to the granting of a preliminary license to James B. Girand for the construction of a dam at Diamond Creek.

"Federal Power Commission  
Washington

"March 3, 1922.

"Projects, Ariz. (No. 121).

"Girand, James B.

"Dear Mr. Secretary:

"On June 16, 1921, the Federal Power Commission issued a preliminary permit to James B. Girand, for power development in Colorado River, near Diamond Creek.

"Several years ago Mr. Girand had secured a permit from the Interior Department under the Act of 1891, and claims to have expended about \$100,000 in collecting data and making preparations to take out a final permit, under the Interior Department. The Federal Water Power Act was passed before Mr. Girand was able to secure a final permit from the Interior Department, and he was, therefore, forced to proceed under the Federal Water Power Act.

"The Federal Power Commission, in recognition of the equities in Mr. Girand's case and of the fact that his proposed project appeared desirable in the public interest, issued him a preliminary permit. He has fully complied with the terms of the preliminary permit, and, as provided therein, has now made application for a license to construct his project.

"The project proposed consists of a dam approximately 450 feet high, which will develop the full head available between Diamond Creek and the lower boundary of the Grand Canyon National Park. The dam will create a pool approximately 65 miles long, with a total capacity of about one million acre-feet. It is proposed to operate the project with a draw-down of about 40 feet, which makes available storage for approximately two hundred thousand acre-feet. This will not be sufficient to affect materially the flood flow of the river, but will increase, to some extent, the minimum low-water flow.

"It is believed that Mr. Girand's project will fit in to any general scheme of development of Colorado River, and that there can be no objection to issuing the license and permitting him to proceed, provided proper conditions are introduced into the license,—first, to prevent his acquiring water rights that would interfere with future irrigation development above, and, second, to require him to pass a certain minimum flow of water at all times to take care of the irrigation interests below.

"The copper interests of the State of Arizona are behind this project, and express themselves as exceedingly anxious to have it put through with the least delay practicable, as they fear a shortage of power in Arizona, on account of diminishing fuel-oil supplies. It is estimated that construction of the project will require at least five years.

"Information is requested as to whether the commission, of which you are Chairman, objects to the issuance of a license to Mr. Girand at this time and what conditions, if any, it considers necessary to have inserted in the license to protect the general interests along Colorado River.

Very truly yours,

(Signed) O. C. Merrill  
Executive Secretary."

"1 Inclosure—9124, viz.:  
Extra carbon.

"The Honorable,  
"The Secretary of Commerce."

"No definite decision was reached in regard thereto.

"The meeting adjourned at 12:00 Noon."—Colorado River Commission, *Minutes of the Eighth Meeting*, Federal Building, Phoenix, pp. 2-4, Wednesday, 11:30 A. M., March 15, 1922.

". . . Take the Girand project . . . upon which the heavy hand of opposition has been laid."—Norviel, W. S., Commissioner for Arizona, Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, p. 42, Nov. 13, 1922.

"MR. MERRILL: Let me tell you what the facts are. The commission granted a permit to Mr. James B. Girand for a power development on the Colorado River at Diamond Creek. Under the terms of that permit he presented certain plans. The engineering staff were not satisfied with the plans as originally presented and required them to be modified to an extent which it was believed would insure safety and the best development of that section of the river. The plans were so modified, and when they were in satisfactory form the case was presented to the commission for action, for the issuance of a license in accordance with the terms of the permit. The commission decided not to grant it at the present time."—*Hearings*, H. R. 2903, Part V, p. 1081, April 2, 1924.

"WASHINGTON, Oct. 20.—Ralph Criswell, chairman of the water committee of the Los Angeles Chamber of Commerce, appearing here before the Federal Water Power Commission today at its hearings on the granting of a license to James B. Girand to build a power dam at Diamond Creek in the Colorado River, said that Los Angeles wants to develop its own power and carry water from the Colorado River for domestic use in the city. Having that in mind the city objects to the granting of a license to Girand, as his dam, once built, would take the cream of the market for power, and if Los Angeles undertook, in any manner, directly or indirectly to finance the building of Boulder dam, it would be handicapped if Girand got in first, he declared."—*Girand's Dam*

*Plan Opposed, Chamber Envoy Gives Reason for Fight on Project, Los Angeles Times, Oct. 21, 1925.*

“The State of Arizona protests the issuance of this license for legal reasons as follows: . . .

“(e) That the applicant, James B. Girand, obtained a permit from the State of Arizona to appropriate 10,000 cu. ft. of the waters of the Colorado River by diversion at a point at or near Diamond Creek on said river on Dec. 26, 1922, which permit . . . specified that the actual construction work for the diversion and use of the waters so appropriated, should commence within one year from said 26th day of December, 1922, and should be prosecuted with reasonable diligence and completed within five years from said 26th day of December, 1922.

“(f) That the said applicant failed to begin actual construction work as set out in said permit within the period stipulated in the permit and said permit was thereby, and by operation of law, forfeited and revoked and all rights thereunder were cancelled and thereafter the Water Commissioner of the State of Arizona did . . . make and enter an order formally cancelling and revoking said permit and all rights thereunder.

“(g) That the said applicant has not, as required by Sec. 9, Sub b of the Federal Water Power Act, complied with the requirements of the law of the State of Arizona with respect to either the bed of said River or the appropriation for diversion or use of the waters of said River for power, or any other purposes. That the said applicant has not and never had authority from the State of Arizona to use the bed of the Colorado River at or near Diamond Creek on said River or elsewhere, and the said applicant has no permit from the State of Arizona to appropriate, divert or use, any of the waters of the Colorado River for power or any purposes at or near Diamond Creek or elsewhere on said River or any other point on said River.

“(h) That the State of Arizona further protests the issuance of a license to said applicant, J. G. Girand, for the reason that the state of Arizona has filed with this Commission . . . an application for a permit to construct a dam on the Colorado River for power and irrigation purposes at a point at or near Bridge Canyon on said River and that the construction of a dam by said applicant, J. B. Girand, at Diamond Creek would prevent the building and construction of said Bridge Canyon dam as shown and set out in the said application of the State of Arizona. The building of the proposed J. B. Girand project and dam would destroy and prevent the possibility of use of the Bridge Canyon dam site for the reason that there is approximately only 128 ft. elevation difference between the two dam sites and a dam of not more than 128 ft. in height at Bridge Canyon would be useless either for power or irrigation purposes. The building of the proposed Diamond Creek dam would effectually destroy any comprehensive scheme or plan for the improvement and utilization of the Colorado River for the purposes of navigation, water power development, or other beneficial public uses to which the same might be put.”—White, Judge Samuel, Legal Adviser to Governor George W. P. Hunt, Arizona, White and McMurchie, Lawyers, 409-411 Luhrs Building, Phoenix, *Arizona's Protest to the Girand License*, Received at Cambridge, Mass., Nov. 30, 1925.

"WASHINGTON, Oct. 21.—The Federal Power Commission today took under advisement the application of James G. Girand for a license to construct a water power project at the Diamond Creek site in Arizona.

"A warning from representatives of Girand that he and his associates will not be used as pawns by six of the basin States to force the seventh, Arizona, to sign the Colorado River pact, marked the closing of the two-day hearing. At the hearing, opposition to the application was expressed by representatives of all the basin States and by numerous private interests.

"Arguments today centered about the legality of the waiver offered by the Girand interests designed to protect all upper basin States against loss through the Girand project of use of waters of the rivers within their boundaries. Attorneys for the upper basin States questioned whether such a waiver would be binding either upon Girand or upon the commission, but its legality strongly was upheld by William H. Burgess, representing Girand, who declared it one of the simplest of legal forms . . .

"L. Ward Bannister, Denver, speaking for the city of Denver and upper basin States, declared the waiver offered by C. T. Knapp, representing Girand, could not be legal because of the limited jurisdiction of the Federal Power Commission, which he said, grants land and not water rights at river sites.

"Bannister urged that if the commission seriously considered the waiver, the upper basin States should be given opportunity to suggest additional clauses and safeguards to be written into it.

"Atty.-Gen. Boatright of Colorado opposed granting Girand or any others license for developing water use on the Colorado which would serve to develop Arizona interests until such time as that State had entered a water compact. He also expressed fear that the Girand project, by regulating the flow of the river, would increase the use of water below the dam by other interests for irrigation, which would result in establishment of many more priority rights in the lower regions to the detriment of upper States."—*Girand Project Hearing Closes, Power Commission Takes it Under Advisement*, Los Angeles Times, Oct. 22, 1925.

"WASHINGTON, Oct. 28.—(By A. P. Night Wire) All power development on the Colorado River was ordered temporarily suspended today by the Federal Power Commission pending agreement between the Colorado River Basin States for division of the river's waters. The action held up the commission's decision upon the application of James B. Girand and associates to develop power at the Diamond Creek site on the Colorado River in Arizona . . . The commission resolved 'that action on all applications for power licenses on the Colorado River and its tributaries now pending before the commission and not finally acted upon, including the Girand application, is hereby suspended for a reasonable time, and that constructive governmental policy requires that the States affected should and they are hereby earnestly urged to reach as speedily as possible an agreement among themselves for the division of the waters of the river system, all to the end that thereupon development may proceed unchallenged upon interstate grounds.'"—*Federal Board Forbids Colorado River Work, Power Commission Vetoes Arizona Project Pending Ratification of Seven-State Compact*, Los Angeles Times, Oct. 29, 1925.

## APPENDIX II—EXHIBIT PP

### DIVERSION FROM THE COLORADO TO THE MISSISSIPPI WATERSHED

"Colorado's destiny is concealed in the undeveloped resources of Western Colorado. The third of the state, lying west of the Continental Divide and in the Colorado River Basin, is commonly called the Western Slope. East of the Continental Divide the water supply is largely used, future irrigation is limited and arable lands are vastly in excess of the water supply. West of the Continental Divide the reverse is true; the area of irrigable land is limited, the water supply is abundant and vastly in excess of all future requirements. For this reason the Western Slope is Colorado's land of promise. For twenty years it has been the aim, hope and ambition of Colorado engineers and irrigators to take a small part of the Western Slope surplus to Eastern Slope lands where intensive culture is practiced and a second foot of water is worth \$10,000 to \$15,000."—Meeker, R. I., Irrigation Engineer, Special Deputy State Engineer of Colorado, *Colorado Data—Colorado River Basin; Colorado's Relation to Water Problems of Colorado River Basin*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 9, March 31, 1922.

"MR. DAVIS: . . . The areas that might be irrigated, outside of the basin, if the water could be put over there, are practically unlimited. Millions of acres over there require water, and if the water could be taken over there, such land would be benefited by it.

"I did not mean and do not now mean to draw a distinction between where the water should be used, at the divide. If the water can be used more beneficially beyond the divide, that may be the place to use it. I don't believe that the Commission would be justified in putting an impracticable limit on that use, but I would suggest a generous limit. One that has been suggested is, including that that is now taken out annually and proposes to be taken, four hundred thousand acre-feet. That might be increased to five hundred thousand, which is a limit which might be written into the compact, or some other limit. If the limit was to be placed higher, well and good, because I believe the uses outside of the basin might be, in some cases, superior to those inside—for municipal uses and in streams where we are sure we can pick up all the return seepage which is not the case with the water applied to the Imperial Valley."—Colorado River Commission, *Los Angeles Hearing*, Rooms of the Chamber of Commerce, Los Angeles, pp. 92-93, March 20, 1922.

" . . . Tunnel lengths below 9,000 feet increase unduly for volume of water procurable. The Continental Divide is an effective barrier to any pronounced depletion of Colorado River water supply by trans-mountain diversions to the Mississippi Basin because of

"(1) Tunnel lengths required;

"(2) Long and expensive collection canals along steep mountain sides are a necessary part of trans-mountain diversions;

“(3) The diversion period at high altitudes is limited on account of snow conditions, and during the short five months diverting season only a portion of the flow can be diverted on account of daily peak flows.”—Meeker, R. I., Irrigation Engineer, Special Deputy State Engineer of Colorado, *Colorado Data—Colorado River Basin; Trans-mountain Diversions*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 9, 16-17, March 31, 1922.

“Denver now has a population of 275,000. It is our belief that it will increase to about 500,000 in the span of the present active generation, if we can conserve and reinforce the resources of our community.

“At the beginning of the present century, when irrigation developments offered popular investment to the public, something like 300,000 acres of land were placed under flood water irrigation systems, which, it was proposed to serve by storing unappropriated flood waters. The supply available was grossly overestimated and this large acreage immediately surrounding the City, upon which over \$12,000,000 was spent for construction alone, has not sufficient water for efficient agricultural operations, even though there is now, temporarily, available for this area nearly all of the flood water supply that the City has developed in Lake Cheesman for emergency use and to furnish additional supply to meet the growing demands of the City.

“The growth of the City has now reached a point where it must commence a continuously increasing consumption of its storage supply and thus decrease the water available for these irrigation systems.

“The problem that confronts the City is not that of securing additional water that new agricultural communities may be developed, but to secure sufficient additional water that the City may grow and not destroy the communities that now exist, and whose future welfare is essential to a healthy growth of the City.

“Investigations of all these various engineers have covered the possibilities of additional water from the South Platte River and of a new supply from trans-mountain diversion from the western slope. They are in practical accord that the supply that can be obtained by further developments at the headwaters of the South Platte River, will result only in a small additional supply that is inadequate to serve the City's future needs, and that trans-mountain diversion from the headwaters of the (Grand) Colorado River must be undertaken if the City would obtain an adequate supply. They find that such diversions are limited to the headwaters of the (Grand) Colorado River must be undertaken if the City would obtain an adequate supply. They find that such diversions are limited to the headwaters of Fraser River, Williams Fork and Blue River from which combined sources, approximately 250,000 acre-feet per annum is available. This amount of water can be taken annually without injury to any present or future development on the Colorado River or its tributaries.

“These are the sources and this is the supply that the City of Denver is asking the Colorado River Commission to allocate for the City's future use.”—Mills, W. F. R., General Manager, Board of Water Commissioners of the City and County of Denver, *Statement In Re Colorado River Matters*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 60-63, March 31, 1922.

“MR. KEYES: . . . I have here a paper by Mr. Robert Follansbee of the United States Geological Survey that I desire to have read into the proceedings. (Here follows the paper prepared by Mr. Follansbee):

“‘Diversion of water from the Colorado River Basin to the eastern slope in Colorado.

“‘At the present time 5 ditches divert water to the eastern slope as shown by the following table:

“‘Existing diversions to the eastern slope.

<i>Ditch</i>	<i>Source</i>	<i>Conduit</i>		<i>Average diversion in acre-feet</i>
		<i>Tunnel miles</i>	<i>Ditch miles</i>	
Boreas Pass	Blue River	0	1	400
Berthoud	Fraser River	0.087	4	600
Ewing	Eagle River	0	2	2200
Grand River	No. Fork Colorado River	0	8	12400
Cochetopa	Cochetopa Cr.	0	2	2500
Total		0.087	17	18100

“‘These diversions are made by open ditch and represent practically the limit of diversion by that relatively inexpensive means.’”—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, March 31, 1922.

“MR. CARPENTER: I would like to read in full the following letter from Mr. Fred A. Sabin, received today by me.

(Thereupon Mr. Carpenter read the following communication, viz.)

“‘SABIN, HASKINS & SABIN

“‘Fred A. Sabin, Earl W. Haskins, Charles E. Sabin,  
Attorneys,  
LaJunta, Colorado.

“‘March 28, 1922.

“‘Hon. D. E. Carpenter,  
Member of Colorado River Compact Commission,  
c/o Hon. Addison J. McCune, State Engineer,  
Denver, Colorado.

“‘Dear Sir:

“‘I represent the Arkansas Valley Ditch Association, a voluntary organization composed of the following mutual ditch companies whose stockholders are farmers and whose stock evidences their water rights: The Bessemer Irrigating Ditch Company, The Excelsior Irrigation Ditch Company, The Twin Lakes Reservoir & Canal Company, The Rocky Ford Canal, Reservoir, Land, Loan & Trust Company, The Oxford Farmers Ditch Company, The Reorganized Catlin Consolidated Canal Company, The Rocky Ford Ditch Company, The Fort Bont Ditch Company, The Lamar Canal & Irrigation Company, The X Y Canal Company, and

composed also of the Holbrook Irrigation District, a public corporation organized under the Colorado Irrigation District law, and composed also of the Arkansas Valley Sugar Beet & Irrigated Land Company, a New Jersey corporation, which has issued water deeds to the farmers under its system.

“The members of the Association irrigate about 300,000 acres by means of waters taken from the Arkansas River. There is a large area of land owned governmentally and by the State, as well as by private individuals, which is susceptible of irrigation from the Arkansas River, but for which no water is available, the stream having been already over-appropriated. Recognizing the natural limitations upon our ability to procure water from the Colorado River drainage in Colorado, for any considerable portion of this land, yet realizing that the waters of the Colorado River constitute one of the natural resources of this State, we request that so far as the natural barriers can be overcome, we be allowed waters from the Colorado River drainage for the irrigation of these lands. The mountain ranges which constitute the natural boundary between the Colorado River drainage and the Arkansas River drainage will limit our ability to take any considerable amount of these waters, but we claim the right to take so much thereof as can feasibly be diverted across the continental divide.

“With this in view, we respectfully request that the claim of this Arkansas Valley water shed to water from the Colorado River drainage be recognized. We further respectfully request that reasonable time be given for supplying all data bearing upon this proposition, to the end that the matter may be fully and intelligently presented to the Commission of which you are a member.

Respectfully,

“FAS/P

Fred A. Sabin.’”

—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 75-76, March 31, 1922.

“MR. G. E. P. SMITH: . . . Shall that water be taken out of the drainage basin with no compensation to those states which suffer the loss of this power? The Arizona Industrial Congress has gone on record as being opposed to any further transmountain diversion. This question is so full of dynamite that I hasten to leave it.”—Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, p. 141, March 15-17, 1922.

APPENDIX II—EXHIBIT RR

PROPOSED LITIGATION

"MR. G. E. P. SMITH: . . . In the absence of an agreement, a test case should be brought before the United States Supreme Court, to determine whether the building of a power dam can acquire rights as against irrigation. The Imperial Valley should bring such a suit against the permittees of the Flaming Gorge Dam Site."—50 Proceedings of the American Society of Civil Engineers, No. 9, pp. 1492, 1494-1495, November, 1924.

"DENVER, Jan. 9.—Recommendation that the State of Colorado take the initiative in bringing suit in the United States Supreme Court for adjudication of the rights of six of the seven commonwealths concerned in the Colorado River compact, in the event the Legislature of Arizona, the seventh State, does not ratify the treaty this year, was recommended to Gov. Sweet today by Atty.-Gen. Wayne C. Williams."—*Suit urged in River Fight, Colorado Attorney-General Would Let Supreme Court Rule on Rights if Arizona Rejects Compact*, Los Angeles Times, Jan. 10, 1925.

"Your letter to the Governor and Attorney General have been forwarded me for answer.

"First, answering your question to the Attorney General 'Is the State of Colorado contemplating the bringing of a suit . . . for the adjudication of water rights on the Colorado River,' it affords me pleasure to state that no such suit is contemplated or in process of preparation. A lawyer by the name of Caldwell interested Professor L. Ward Bannister in some such a scheme during the latter part of last year and they canvassed the sentiment among the Colorado River states but got nowhere. Colorado is not in the business of bringing suits and does not intend to start at this time. Such a suit as suggested would be hopelessly impossible from the standpoint of practical results and could do no one any good. The suggestion was purely the idea of an impractical and visionary mind and died of its own weight. It is about as practical as the proposed suit threatened by the Imperial Valley interests against the upper users on the Colorado. It would take not less than a quarter of a century to conclude such litigation and no one would be capable of enforcing the decree. A decree without enforcement is a worthless fiction, in river matters. Only those who know nothing of the physical conditions and the practical administration of streams would seriously suggest or contemplate any such action."—Carpenter, Delph E., Interstate Rivers Compact Commissioner, State of Colorado, Denver, Letter of July 30, 1925.

"PHOENIX, Oct. 16—The Arizona High Line Canal Association today filed suit in the Superior Court against the Diamond Creek Hydro-electric Company, seeking to have the latter's project eliminated from the Colorado River project on the ground that State rights for land reclamation needs must be served first. The complaint states that James B. Girand, to whom the project permit was granted by Water Commissioner W. S. Norviel, on the day following the award made assignment of his rights to the Colorado River Engineering and Develop-

ment Company, charged to be 'closely allied with the so-called power trust'; that the Diamond Creek project apparently has passed or is about to pass permanently beyond the control of Mr. Girard and his Arizona associates, who put up the money for the original surveys and the permit, and presumably into the hands of the so-called power trust."—*Suit Aimed at River Project, Arizona Canal Association in Court Action, Power Trust Charged to Electric Company*, Los Angeles Times, Oct. 17, 1925.

"MR. CHILDERS: . . . During the summer of 1924 the Imperial Valley took all of the water out of the Colorado River . . . for a period of some 76 days. At one time the low flow was only 1,250 second-feet, when the need of the valley at that time, including Mexico, was approximately 4,000 second-feet . . . There was little more than enough water on the American side to take care of the ordinary canal losses and provide for stock and domestic use . . .

"We do not desire to have this statement construed as a threat in any way, because as we have said before and as we have demonstrated by our actions, the court is the last resort; but if the storage cannot be provided, we are forced into the courts and will have to resort to the courts to protect our rights, and that very soon."—*Hearings*, S. 727, Part I, p. 149, Dec. 23, 1924.

"WASHINGTON, Dec. 30.—Possibly the forerunner of interminable litigation between the States of the Colorado River basin and inviting an era of ill-tempered reprisals between sections and municipalities whose mutual welfare depends upon co-operation and a good understanding, a suit to enjoin the State of Colorado from using the Moffat water diversion tunnel will be filed by Charles L. Childers, counsel for the Imperial Irrigation District, according to announcement here today.

"Childers, who is in Washington lobbying for the Swing-Johnson bill, bases his contemplated action on the assumption that the Moffat tunnel in diverting water from the Colorado River sufficient to irrigate 250,000 acres, jeopardizes the water supply of Imperial Valley."—*River Suits Threaten, Irrigation District May Sue State of Colorado to Bar Tunnel's Use*, Los Angeles Times, Dec. 31, 1925.

APPENDIX II—EXHIBIT WW

FEDERAL POWER COMMISSION TO WITHHOLD  
LICENSES UNTIL RATIFICATION  
OF COMPACT

"May 9, 1923.

"Mr. H. W. Dennis,  
871 North Kenmore Ave.,  
Los Angeles, Calif.

. . . I can assure you also that until there is some agreement the upper states will oppose both private and Federal construction on the lower reaches of the river because of their fear of the establishment of priorities in favor of the lower states. This opposition will come from very strong quarters, strong enough to prevent the issuance of licenses by the Federal Power Commission or the appropriation of funds by Congress.

"CCS/AC

(Signed) C. C. Stetson."

"Federal Power Commission,  
Washington, March 6, 1924.

"Hon. E. O. Leatherwood,  
House of Representatives,  
Washington, D. C.

". . . The commission believes that a compact such as that negotiated by the Colorado River Commission is a matter of great importance to all the States in the Colorado River basin. Under such circumstances, its policy has been to defer action upon applications affecting the river until such time at least as adequate opportunity has been given for the State of Arizona to accept or reject the compact.

Very truly yours,

John W. Weeks,  
Secretary of War, Chairman."

*Hearings*, H. R. 2903, Part IV, pp. 559-560, March 14, 1924.

Secretary Work, Department of the Interior, opposes the granting of licenses until the Compact is dead or ratified.—*Hearings*, H. R. 2903, Part V, p. 1033, March 29, 1924.

"MR. MERRILL: . . . (quoting) 'Until it is ratified, or it is known that it can not be ratified, we doubt the advisability of the establishment through construction of rights in the lower States of such magnitude as would be involved in the proposed storage at Boulder Canyon.'—*Ibid.*, p. 1089, April 2, 1924.

"L. Ward Bannister  
Counselor at Law  
801-7 Equitable Building  
Denver, Colorado  
February 4, 1925.

"Reuel L. Olson,  
8 Conant Hall,  
Cambridge, Mass.

" . . . You finally suggest any additional comments. If Arizona should not ratify the Compact I am persuaded that there will be a concentrated opposition on the part of the upper states and possibly joined by the states of California and Nevada against any Federal aid to Federal Water projects deriving their supply from the Colorado River system in Arizona. The upper states would take this course with great reluctance, but would finally be compelled to take it from the sheer necessity of self defense. The upper states will not sit by silently after adjournment of the present legislative session in Arizona if Arizona should fail to ratify during the session.

Yours very truly,

L. Ward Bannister."

"Perhaps we ought to call attention to the fact that we are not entirely at the mercy of the other western states. They can embarrass us in obtaining appropriations from Congress for the building of the dam in the Colorado River, but in case the government should decline to construct the dam, then it might be constructed by other agencies through permits given by the Federal Power Commission, such power being vested in the Federal Power Commission without further act of Congress."—Chase, Lucius K., Chairman, Reclamation and Power Committee of the Los Angeles Chamber of Commerce, May 3, 1922, *Report on Colorado River Compact, May 3, 1922*, p. 6.

## APPENDIX II—EXHIBIT ZZ

### THE QUESTION OF THE RETURN FLOW

1. Return Flow Data from the Great Salt Lake Basin Declared Applicable to the Colorado River Basin.
  2. Reference to the Sevier River as an Illustration of the Manner in which Return Flow Augments the Water Supply.
  3. How Return Flow at Julesburg on the Platte River Increased the Supply of Water.
  4. Statement of Judge S. R. Thurman on the Question of Return Flow.
  5. Return Flow and Water-Logged Soil.
  6. Return Flow Tends to an Improvement in Silt Conditions.
  7. The Effect of Artificial Drainage upon Return Flow.
  8. Return Flow and Transmountain Diversion.
  9. Measuring the Return Flow.
1. *Return Flow Data from the Great Salt Lake Basin Declared Applicable to the Colorado River Basin.*

"MR. DOREMUS: . . . For the purpose of a very general illustration of this matter, we invite attention to that part of the Bonneville Basin, known as the 'Great Salt Lake Basin', which includes Bear River, Weber River, Provo River, Spanish Fork River, and numerous other minor streams—from all of which water has been used for irrigation during a period of at least sixty years. In this basin are located the greater portion of the people, and the chief industries of the entire state.

"The basin has no outlet. Great Salt Lake occupies the lowest portion and is the final receptacle for all water flowing in the basin. Originally all the water flowed through natural unobstructed channels, directly into Great Salt Lake. Under these natural conditions the flow was very irregular. Overfull channels in June and empty channels in August were the rule. Gradually, obstructions, such as are necessary to divert water for irrigation, were placed in these stream channels; until the number is now sufficient to practically prevent any direct flow into the Great Salt Lake, except during very high water. Under these changed conditions, the stream flow is now comparatively uniform, and constant. The June surplus, which is now diverted onto, and stored in the soil cover, of the upper river basin, slowly returns to the natural channel and constitutes the present August flow which, originally, was nil.

"This change in character of stream flow, has not been accomplished entirely, through the agency of irrigation; but is due partly to storage, on the upper basin

areas. Complete equalization of flow is not claimed; but it has been accomplished in such degree that great benefit has been derived, and complete equalization made much easier.

"Another interesting and important fact is that, after diversion from the stream of sufficient water to irrigate the large area of land now under cultivation in the Great Salt Lake Basin, the lake still receives approximately 5,000,000 acre-feet of water annually. The lake surface is now higher than when the first water was diverted, and the streams were free from obstructions and discharged directly into the lake. And this in spite of all the efforts tending to destroy the lake.

"I would like to call special attention to the fact that, after this long period of use, our surplus water is down in the lake, and not up on the watershed. We have lots of surplus in the lower valley at the wrong end of the system, notwithstanding all the efforts that have been made to retain it on the upper hand.

"We think these facts are significant in this case as showing:

"(1) That irrigation on the upper areas of the stream basin, is a potent and economical means of equalizing the stream flow.

"(2) That it furnishes a measure for the supplemental storage needed to complete the equalization of flow;

"(3) That detention of the water on the shed does not diminish materially the available supply that finally reaches the mouth of the stream;

"(4) That it makes the watershed a valuable farming and storage area, instead of a mere catchment area or cattle range.

"It is not to inform you, but to remind you, that these phenomena, are not peculiar to Utah streams, but are common, in greater or less degree, to all streams where water has been long and largely used, on up-stream lands . . .

"What I wanted to show by this comparison was that the Colorado River Basin is not dissimilar, except in the one feature of magnitude, to the stream basins in the State of Utah and this entire mountain region. They all have, at least three common physical features, an amphitheatre or catchment basin, a portal gorge leading from the amphitheatre, and a broad alluvial plain below.

"Being alike in these controlling features, we fully believe the system which has produced certain results in this state will produce like results on the Colorado River, or any other stream, whose anatomy is the same as that of the streams upon which we have operated and that our experience affords a dependable and profitable guide to what may and can be done on the Colorado River. We accordingly offer and urge such plan and procedure.

". . . To emphasize the view, justified we think by observations and experience extending over a period of seventy-five years, that the water should be detained, so far as practicable, on and within the amphitheatre, in preference to any other portion of the Basin, we deem it desirable to add and perhaps repeat: . . .

"(10) That, notwithstanding the present liberal use, and detention of water on our uplands, there is a constantly increasing surplus, on our lowland areas, that has already compelled the drainage of large tracts and will ultimately make drainage a necessary supplement of all valley irrigation.

"MR. HOOVER: From your experience, do you consider there is no consumptive use of the water at all,—according to your point of view, is there no loss of water in use?

"MR. DOREMUS: No sir. There is some loss due to evaporation and transpiration; there is some difference between the quantity of water that is placed upon the land and the quantity that drains from the lands and returns to the water course. But our experience teaches that repeated use of the unconsumed remnant accomplishes the irrigation of more land than is possible by a single application of the undiminished flow.

"Before we learned better, lower stream users, fearful of diminished crops through diversion of the water for irrigating up-stream lands armed with shot-guns and six-shooters, raided the upper regions of the river, tore out all diverting dams, and turned the water down for use of the valley land owners whose rights were prior to those above. We now encourage the use of water on the upstream lands, as a better means of water protection for the lowland users, than that formerly afforded by the shotgun method."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 4-13, passim, March 27, 1922.

## 2. *Reference to the Sevier River as an Illustration of the Manner in Which Return Flow Augments the Water Supply.*

"MR. C. J. ULLRICH: . . . One other fact that must be borne in mind is that the irrigation of the highland reaches of the river system in effect produces storage regulations for the lower river without cost to the lower water users. This has been illustrated in the case of the Sevier River.

"Away back in 1890 all the direct flow of the river was appropriated at the lower end. Today all these rights are being satisfied and new rights have accrued, and there is still a surplus of water going into Sevier Lake. This is the result mainly of return flow from the upper reaches of the river where the water has been spread over the land for a period of years and the subsoil drainage has reached its equilibrium, the water not consumed returning to the river almost as fast as applied.

"As a matter of fact, we are beginning to build drainage systems to drain the land and all drainage water is being discharged back into the river to be used over again lower down, thus facilitating return flow."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 26-27, March 27, 1922.

"MR. W. R. WALLACE: . . . I would like at this time to read for you a passage from Page 142 of the report on the 'Lands of the Arid Region of the United States', by Major Powell, dated 1878;

"The total acreage, therefore, which can be irrigated in the drainage system of the Sevier, by the present system of watering and of agriculture, may be estimated at about 43,000 acres, and the greatest improvements and economies

in the system of farming and watering cannot, with the present water supply, be expected to raise the irrigable area above 70,000 acres.'

"By reason of the return flow there are now 165,000 acres being irrigated from the Sevier River and the irrigation works are now being further expanded in order to irrigate additional lands."—Colorado River Commission, *Salt Lake City Hearing*, Salt Lake City, p. 70, March 27, 1922.

### 3. *How Return Flow at Julesburg on the Platte River Increased the Supply of Water.*

"MR. TOBIN: . . . We also contend, and prove conclusively from the State Engineer's office and from records, that the more water stored and applied on the upper lands, the better is the water right in the adjoining states. At Julesburg on the Platte, the Platte River went dry. On account of the construction of the large reservoir around Fort Morgan, and other sections, and the storing of water in them and transfer of early priorities to the head of the Platte, today Julesburg, in Eastern Colorado, has some of the best water rights in the State. And in Kansas, on the Arkansas or any other place, they have never been injured by the water that has been diverted in Colorado; on the contrary, they have been benefited, and it has made possible the construction of large reservoirs in the Arkansas Valley, and the same thing will exist in Western Colorado; the more water put on the land, the more that is stored, the more continuous flow the Colorado River will have, and there is no doubt but what, if the Government did build on the lower end of this River and store these flood waters, that there will be ample water for everybody, down on the Colorado."—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, p. 75, March 29, 1922.

### 4. *Statement of Judge S. R. Thurman in the Question of Return Flow.*

"W. L. HANSON: . . . I should like here to quote the Hon. Judge S. R. Thurman, of Utah, a gentleman of renowned authority on irrigation and drainage:

"Early in the history of nearly every valley, there came a time when the inhabitants and users of water arrived at the conclusion that all the water had been appropriated and that the area of cultivation could not be further extended. Every old settler in Utah will bear testimony to the truth of this assertion. Many instances could be brought to your attention in which the area of cultivation has been increased from three to six times beyond the supposed capacity of the streams. Even at this late date, new land is being brought under cultivation and is being irrigated from streams, rights to which were supposed to be exhausted more than a quarter of a century ago. Probably many reasons could be assigned for this apparent phenomenon—I need only mention two. The first reason for the supposed phenomenon to which I have referred, is the fact that it requires many years of irrigation upon the arid lands of the desert, to fill up the interstices of the soil and establish a level of ground-water below which irrigation, of course, is not required. Until this occurs it is practically self-evident that the farmer must depend entirely upon water from the melting snow and other forms of precipitation. After this, however, springs begin to appear in the lower portions of the valley. These find their way into the original streams and augment their flow. Seepage appears along the banks of the streams; much of the land becomes saturated, and is no longer dependent upon regular terms of irrigation. At this point we cast our eye over the area in cultivation, and find, to our sur-

prise, as I suggested before, there are many times as much land in cultivation as there was near the beginning when the original appropriators thought the limit of the stream's capacity had been reached.'—Colorado River Commission, *Salt Lake City Hearing*, Salt Lake City, pp. 63-64, March 27, 1922.

### 5. *Return Flow and Water-Logged Soil.*

"MR. R. A. HART: . . . As a result of the fact that the plane of the ground-water table is practically parallel to the ground surface in an irrigated valley, not only the lowest lands become water-logged, but a considerable proportion of the lands in a given valley are generally affected. In Utah, for example, not less than 350,000 acres of land have become water-logged. This is more than twenty-five per cent of the entire area brought under irrigation in the State. In some of the older sections seventy-five percent or more of the total area irrigated has developed a need for drainage.

"The area of water-logged land is constantly growing and the development would be keeping pace with the development of irrigation were it not for the fact that corrective measures are being supplied. Twenty-seven drainage districts, comprising about 160,000 acres of land, or approximately one-half of the water-logged area of the State, have been organized. Of these, twenty districts, comprising about 90,000 acres have been completed already and new districts are being organized constantly.

"None of the districts referred to are located in the Colorado River Basin, largely owing to the transportation situation, but there are many thousands of acres of land in need of drainage, and some individual reclamation has been accomplished, even in the Uintah Basin where the irrigation development is comparatively recent.

"It may be said conservatively that a large proportion of the irrigated lands of the State will require artificial drainage eventually."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 114-115, March 28, 1922.

### 6. *Return Flow Tends to an Improvement in Silt Conditions.*

"MR. R. A. HART: Water drained from water-logged lands usually contains an excess of soluble salts of a harmful nature and is not suitable for direct, immediate application in irrigation. It may be rendered suitable for application by admixture with from one to twenty parts of river water.

"The quality rapidly improves and usually within two or three years the water becomes suitable for direct application without dilution. With the harmful salts reduced to a safe proportion, drainage water may be regarded preferable to the regular supply in that it is certain to contain plant foods leached from the drained lands.

"However silty the irrigation supply may be, the discharge of underdrains is always clear so that the drainage of higher irrigated lands tends to an improvement in silt conditions in the lower reaches of a stream. Moreover, the application of such clear water in subsequent irrigation results in a greater relative return flow, since it permeates the soil more readily than silty water."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 117-118, March 28, 1922.

### 7. *The Effect of Artificial Drainage upon Return Flow.*

"MR. R. A. HART: We speak of the water developed by an under-drain. The word 'develop' must be employed circumspectly. A considerable proportion of the water discharged into a natural channel by a drainage system is water that previously found its way into the channel by slow percolation. In the case of such water, all that a drainage system accomplishes is to expedite the movement into the channel.

"Water previously lost by evaporation from wet soil is largely saved, however, and such water is also carried into the channel by a drainage system. The quantity of water lost by evaporation from wet soil may be greater than that required to irrigate the same soil, so the saving effected is of importance.

"Under certain conditions part of the water that otherwise would be lost by deep percolation is returned to the channel by a drainage system.

"Finally, a larger proportion of the natural precipitation reaches the channel, when the soil is irrigated and drained, than were the same soil in its arid condition. Precipitation, which falling on the soil in its arid condition merely would be absorbed by the upper few feet of soil and then dissipated by evaporation, produces an increase in the discharge of drainage systems on irrigated tracts.

"The artificial drainage of irrigated lands, therefore, results in an increased return flow."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 116-117, March 28, 1922.

### 8. *Return Flow and Transmountain Diversion.*

"GOVERNOR MECHEM: This formula New Mexico will accept with the following qualifications:

"1. That where a state permits diversion from the watershed of the Colorado River, or its tributaries, the amount of water should be charged against the quota of said state at the ratio of 5 to 4; it having been estimated that the return flow of the water applied to irrigation of lands within the watershed is from twenty-five to forty per cent, as not only the water diverted is a use out of the apportionment, but the return flow is forever lost, the state diverting water in such a manner should make good the return flow."—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 162, April 1, 1922.

### 9. *Measuring the Return Flow.*

"MR. CALDWELL: I have heard engineers speaking of return flow, try to express it in percentages. It seems to me it would not be expressed at all in percentages; so far as our experience in Utah goes, it cannot be expressed in percentage unless we know the actual condition established. For instance, if we divert 3 acre-feet of water to a piece of land, only 1½ acre-feet returns to the river, or 50 per cent, making a consumptive use of 1½ acre-feet. If we turn out 4½ acre-feet, say, we return 3 acre-feet, and the consumptive use remains the same, but the percentage returned is much higher; does that agree with your notion of return flow?

"MR. FOSTER: Yes sir."—Colorado River Commission, *Grand Junction Hearing*, p. 68, March 29, 1922.

## APPENDIX II—EXHIBIT AAA

# PROPER CENTRALIZATION REQUIRED IN COLORADO RIVER DEVELOPMENT

1. General Considerations.
2. Centralization by Means of the Federal Government.
3. Centralization through Private Companies.
4. Certain Legal Considerations.

### 1. *General Considerations.*

"MR. DAVIS: . . . It will be necessary to have somebody who is disinterested, somebody who has the machinery for collecting the facts, and to determine whether the facts do demand certain drastic action, and to give flood control and irrigation and municipal supply preference over power is a dead letter unless there is somebody who is interested and competent to enforce it. . . . It is absolutely necessary to have that control in one management."—*Hearings*, H. R. 2903, Part VII, p. 1453, April 19, 1924.

"CHAIRMAN HOOVER: . . . When you begin to specify diversion of water you have supplied the necessity for an interstate police."—Colorado River Commission, *Minutes of the Twenty-Fourth Meeting, Second Part*, Bishop's Lodge, Santa Fe, pp. 12-13, Thursday, 9:45 A. M., Nov. 23, 1922.

" . . . Because of better communication and transportation, the constant tendency has been to more and more social and economic unification. The present continent-wide union of forty-eight States is much closer than was the original group of thirteen States. This increasing unification has well-nigh obliterated State lines so far as concerns many relations of life. Yet, in a country of such enormous expanse there must always be certain regional differences in social outlook and economic thought."—President Coolidge, *Memorial Day Address*, Arlington National Cemetery, May 30, 1925, New York Times, May 31, 1925.

### 2. *Centralization by Means of the Federal Government.*

"MR. BOYLE: Well, I have reached the conclusion, Judge Raker, on our trip around the Western States, that the position taken by the up-stream States and the position taken by all of the States that are interested in this matter, rather forced the conclusion that there was no other agency that could carry on this development than the Federal Government."—*Hearings*, H. R. 2903, Part IV, p. 589, March 18, 1924.

"3. If these resources are to be developed in an orderly manner, a comprehensive plan of development must be made and agreed upon by the Interior Department, War Department, and the Federal Power Commission."—*Ibid.*, Part V, p. 969, March 26, 1924.

"It seems clear that the circumstances call for the coordination of Federal and state authority and for the harmonious cooperation of the states so that

electric current, whether from water power or steam power, will be turned over to the distributing units in the receiving states free of any excessive costs. The regulatory authorities there will then be able to give adequate protection to the consuming public."—Wells, Philip P., Deputy Attorney General, Commonwealth of Pennsylvania, *Power and Interstate Commerce*, 118 *Annals of the American Academy of Political and Social Science*, No. 207, p. 166, March 1925.

" . . . With respect to water power within Federal jurisdiction, estimated to be more than 75 per cent of the total water power resources of the country, a basis for such cooperation (coordination of Federal and state authority and for the harmonious cooperation of the states so that electric current, whether from water power or steam power, will be turned over to the distributing units in the receiving states free of any excessive costs) is secured by the conditions embodied in the Federal license disposing of the natural resource. These limit the license to fifty years and establish the actual net investment as the recapture price and as the rate-base for state regulation. Only in case two states disagree as to the regulation of a licensee doing an interstate power business between them does the Federal Power Commission have the authority and duty to regulate."—*Ibid.*

### 3. *Centralization Through Private Companies.*

"MR. BALLARD: . . . We think that if the Government will move along the lines of the flood control question, that the people in our own territory and the investors throughout the country could be relied upon to finance the power development through the purchase of securities of our company and other power companies, which securities are taxable. The United States would supervise the whole operation, and State commissions would regulate all of our activities."—*Hearings*, H. R. 2903, Part III, p. 484, March 12, 1924.

"MR. BALLARD: . . . The distribution of electric power from Colorado River power sites is really an interstate matter which should be entrusted to such agency only as has freedom of interstate action, either the United States Government itself, or some agency created by it, or under regulation by it. The best agency of that kind is a public service corporation."—*Ibid.*, p. 479.

"MR. BALLARD (continuing): If the Edison Company becomes the distributor of electric power through California, Arizona, and Nevada, it will be subject to regulation by the regulating commissions of each of the three States, provided they are able to agree in some way, and if not, then to the regulations of the Federal Power Commission."—*Ibid.*, p. 481.

### 4. *Certain Legal Considerations.*

"MR. MERRILL: Whether a power development can be jointly financed, jointly operated, and jointly managed by a group of southern California municipalities and by the State of Arizona, or a group of Arizona municipalities, is a question . . . Designs show that the power house is to be located on the Nevada side of the river.

"They (group of southern California municipalities) would not be authorized, I assume, and I doubt if they would have the legal authority to step over the other side of the river into Arizona. If Arizona gets power from that dam, I

see no other way than for it to make a contract, if it can, for the purchase of power and build its own transmission lines.”—*Hearings*, H. R. 2903, Part V, p. 1137, April 12, 1924.

“Specifically, may a regional group of States especially affected by a project for electric power development enter into an agreement, with the consent of Congress for the effective utilization of such energy generated in one State and transmitted for distribution to neighboring States? All aspects of this problem, as we have seen, are not included within the conception of interstate commerce. But to the extent that the process of electrification crosses state lines we are in a field open to Federal regulation. If it chooses, Congress may act and pre-empt State control. (*N. Y. C. R. R. Co. v. Winfield* (1917) 244 U. S. 147, 37 Sup. Ct. 546; *Lemke v. Farmers’ Grain Co.* (1922) 258 U. S. 50, 42 Sup. Ct. 244.) Even without Federal action, no State may discriminate against [*Welton v. Mo.* (1875) 91 U. S. 275; *Cook v. Pa.* (1878) 97 U. S. 566; *Robbin v. Shelby County Taxing District* (1887) 120 U. S. 489, 7 Sup. Ct. 592.] or obstruct [*Buck v. Kuykendall* (1925) 45 Sup. Ct. 324], the transactions in interstate commerce. Between these limits—what Congress may do and the States obviously may not do—lies the field in which compact would operate. Its availability, as a matter of law, depends on whether the constitutional grant to Congress of power to regulate commerce among the several States, however unused, excludes all State action, however reasonably conceived and restricted to the interests of a region of States immediately affected.

“A simple syllogism is supposed to furnish the answer. Congress alone can regulate interstate commerce; the flow of energy from State to State is interstate commerce; therefore, its control is beyond the authority of the States. . . . The attitude which we have summarized will work mischief in concrete situations because it embodies the fallacy of over simplification.

“. . . It (the Commerce Clause) is a reservoir of Federal Power and not a dam against State action, as State action. The experience which evoked the Commerce Clause, its contemporaneous construction, and the course of judicial decision, compel the conclusion that the States are not excluded from dealing with interstate commerce as long as Congress itself has not legislated, provided that State action neither discriminates against interstate commerce nor unreasonably hampers it. These provisions are not self-enforcing conditions. They imply a process of adjustment by the Supreme Court between State and national interests. Their application is difficult and is bound to result in variable judgments . . . Terms like ‘exclusive’ and ‘concurrent,’ ‘direct’ and ‘indirect,’ have only served to confuse. To discard them will tend to clarify. They are labels of a result and not instruments for the solution of a problem.

“The history of the Commerce Clause is a thrice-told tale. But the nature of the mischief against which it was devised and which has shaped its development is too frequently overlooked. Madison makes it perfectly clear that behind the grant to Congress lay not exclusion of action by the States, but restrictions upon them:

“. . . It is very certain that it (the power to regulate commerce among the several States) grew out of the abuse of the power by the importing States in taxing the non-importing, and was intended as a negative and preventive

provision against injustice among the States themselves, rather than as a power to be used for the positive purposes of the General Government, in which alone, however, the remedial power could be lodged.' [Letter of Madison to J. C. Cabell of February 13, 1829, 3 Farrand, Records of the Constitutional Convention (1911) 478.] A hundred years have inevitably brought greater reliance on 'the remedial power' of the general government; they have not altered the power of the States in default of action by Congress."—Frankfurter, Felix, and Landis, James M., *The Compact Clause of the Constitution—A Study in Interstate Adjustments*, 34 Yale Law Journal, 685, 718-720, May, 1925.

## APPENDIX II—EXHIBIT BBB

### DESIRABILITY OF A TREATY WITH MEXICO

"MR. HAMELE: . . . It will be necessary sooner or later for the United States to make a treaty with Mexico on international waters . . . I think it would be very appropriate to have a treaty negotiated between this country and Mexico regarding international waters generally at an early date."—*Hearings*, H. R. 2903, Part V, pp. 892-893, March 25, 1924.

"MR. HAYDEN: Then you repeat what you said when you were on the stand before that it is vital, so far as this legislation is concerned, to provide that the American Government reserves the right to use all the water of the Colorado River in the United States?"

"MR. LARUE: I think it should not only reserve the right to use it but should prevent any development of the river that would permit that water to go to Mexico, and if you should build any dam in that river that will regulate the flow and materially increase that flow above the present needs in the United States it will go into Mexico and be put to beneficial use by Mexico."—*Ibid.*, p. 1124, April 11, 1924.

"COLONEL KELLY: I should think that the best way of all of solving the problem (other than by providing such a great storage capacity, thereby preventing the water from being made available in Mexico, or providing a place to use it in the United States as soon as it is available) would be to have a definite understanding with Mexico. I understand that some years ago an effort was started to modify the present treaty with Mexico so as to cover the present situation and the future situation with respect to irrigation which has all developed since."—*Ibid.*, Part VI, p. 1264, April 16, 1924.

". . . Steps should be instituted as early as practicable to negotiate a suitable treaty with Mexico covering . . . levees, canals, etc., in Mexico and an agreement as to the water that will be provided for Mexican lands."—Kelly, Colonel William, *The Colorado River Problem*, 50 Proceedings of the American Society of Civil Engineers, No. 6, pp. 795-836, 836, August, 1924.

"MR. MAXWELL: I have been assuming, perhaps, more than a witness should assume before a committee to make suggestions, and I will make another suggestion as to what the committee should do. First, provide a flood-detention dam and a flood-detention basin; second, make it an absolute condition of the cooperation of the United States Government in any plan for development that every scintilla of a claim for water from the Colorado River in Mexico shall be appraised and acquired by the United States of America . . . I mean that a joint commission should be appointed, just exactly as was appointed to make the Gadsden purchase . . . follow in the track of the Gadsden purchase, having there acquired land, and appoint a joint commission, and stand upon our rights to acquire every claim which Mexico has to water.

"And I put that necessity upon a much higher ground than the mere question of irrigation development or power development. I believe that it is capable

of absolute proof that if that is not done that vast principality in Lower California and over in Sonora will be developed with an Asiatic population that will ultimately precipitate a war between this country and Asia because of the constant friction that will result from the development of an immense Asiatic population across an imaginary line competing with American agriculture in everything that is produced on the farms of the Southwest, and it would be impossible to protect ourselves against that competition with a tariff."—*Hearings, H. R. 2903, Part VI, p. 1325, April 17, 1924.*

## APPENDIX II—EXHIBIT EEE

### ARGUMENTS FOR A ROCK-FILLED DAM

“ . . . A dam at, or near, Boulder Canyon, if constructed to the proper height can be made to meet all four of the requisite conditions (flood control, silt storage, conservation of water for irrigation, conservation of water for power development). Silt storage can be provided for approximately 400 years, which in connection with future reservoirs on the upper stream, will provide adequate silt storage for all time. Above the silt storage water can be stored sufficient to meet requirements of irrigation during the periods of maximum drought.

“I have made an extensive study to determine the proper height of a dam to accomplish these purposes and have investigated structures of three heights; namely 800 feet, 1,000 feet and 1,200 feet. In each case I have considered the effect of flood control, silt storage, and conservation of water for irrigation, and development of power. The most efficient flood control and maximum reserve storage for irrigation is obtained with a dam 1,200 feet in height. With a power plant located twenty-five miles below the dam in order to utilize the fall of the river in this distance (some 130 feet) such a structure would provide the maximum amount of power. However, the length of time necessary for the reservoir to fill sufficiently to permit the development of power at this site is a serious consideration and will probably overbalance the advantage of this plan.

“A dam 1,000 feet in height will give ample protection against floods and provide sufficient storage both for silt and irrigation reserve and furnish 1,100,000 firm H. P.

“A dam 800 feet in height would provide only about one-half the capacity of the 1,000 foot dam. Owing to this small capacity, the variation in pool level would be excessive, necessitating the location of the power and irrigation intakes at a low elevation and decreasing the capacity for silt storage to one-fourth that of the higher structure. The yearly variation in pool level would be much greater in the 800 foot dam than in the 1,000 foot dam, and the amount of firm H. P. developed from a dam 800 feet in height would be about 850,000 H. P., while the power from the 1000 foot dam would be 1,100,000 H. P.

“For these reasons I have decided that a dam approximately 1,000 feet above bedrock will be required. The capacity of this reservoir will be 82,000,000 acre-feet, of which approximately 42,000,000 could be made available for power and irrigation, and 40,000,000 for the storage of silt. The flood discharge could be limited to 40,000 second-feet under the present condition of depletion, and up to about 1950, a discharge of 13,800 second-feet can be maintained.

“If the irrigation demand should continue to increase after 1950, and the full amount of firm power is maintained, it will be necessary then to create a balancing reservoir below Boulder Canyon, to equalize between the demand for power and the demand for irrigation.

“Such a reservoir could be created about 10 miles above the town of Parker, where an earth and rock-fill dam of moderate height would create a reservoir of

sufficient capacity to balance these two demands. Under these conditions a generating plant at Boulder will be capable of developing 1,000,000 firm H. P. without wasting any water required for irrigation.

"A dam 1,000 feet in height would be approximately 600 feet higher than the highest dam so far constructed. Such a structure demands the most careful consideration, and is possible only where natural conditions are favorable. It is not probable that engineers would be willing to approve an all-concrete dam of such a height, as the pressures in portions of it would be approaching too near to the crushing strength of the concrete. Therefore, consideration is limited to a masonry, a combination of masonry and concrete, or to a rock-fill type of dam. The rock at Boulder Canyon, a close grain granite, has ample strength to withstand the pressures developed in such structures.

"With the material available, the consideration then becomes one of cost and safety. The drillings completed by the Reclamation Service disclosed a firm, hard, rock foundation near enough to the surface of the river to make it possible to construct a masonry dam, but on account of the hardness of the stone available, the cost of quarrying and dressing the stones required for a masonry dam will, of necessity, be very high.

"At the location selected a large volume of granite lies above the angle of repose, and after considering the various locations carefully for a number of years, I have developed a design for a rock-fill dam made tight with a steel diaphragm, which I submit as justifying consideration of a dam of this type at this particular location.

"This rock-fill dam will have a safety factor against sliding of 3.4, and the volume of rock in the dam will be approximately 26,000,000 cubic yards. This rock-fill will support a steel diaphragm arched up-stream and concreted firmly into bedrock and into the side walls of the canyon. Flexibility will be built into this steel diaphragm by constructing at intervals cylindrical tubes from top to bottom of the steel diaphragm, these tubes to be filled with a viscous fluid to maintain a static pressure. The diaphragm will be of 1 inch steel plate, protected against corrosion by a covering of asphalt and asbestos. The steel will be under compression stress only. The pressure of the water and the weight of the diaphragm will be borne by the rock-fill. The weight of steel will be approximately 21,000 tons. The steel diaphragm will be sufficiently flexible so that it can follow the settling of the rock-fill and will of necessity have to be constructed to sufficient height so that it will not be overtopped by any condition of flood.

"This dam could be constructed to a height of 1,000 feet above bedrock within feasible limits of cost and with a safety factor which will safeguard the lives and property below the dam.

"After developing the plan as herein outlined the entire proposed development was submitted to a group of bankers and investors in the East. After due consideration a tentative agreement for financing was entered into and I was authorized to submit a proposal to Congress on the following basis:

"Private capital will be provided to meet the entire cost of construction for the Boulder Dam, the acquisition of all privately held lands that will be re-

quired for the reservoir so created, to construct the power plant and install generating equipment as rapidly as the market will absorb the power, and to construct the transmission lines necessary to connect up with existing distributing systems.

“We would engage to construct a dam and water control equipment under the supervision of the Reclamation Service, and upon completion turn over to the Reclamation Service the title to the dam, and all lands acquired in connection therewith. We would agree that we would use the water for the development of power as it may be released under the supervision of the Reclamation Service to meet the demands of irrigation. We would agree that the power generated in connection with the development may be apportioned to the several states by the Federal Power Commission and that the rates at which the power is to be sold shall be fixed by the Federal Power Commission, and further that we will distribute the power only to municipalities, corporations operating transmitting and distributing systems, and to railways.

“The amount of money required for the construction of the dam is, at the beginning greater than the amount justified by the present demand for power, the necessity for the dam being the protection against flooding and the conservation of water for irrigation.

“Therefore, as an equitable consideration, the corporation would ask Congress to authorize the Reclamation Service to guarantee bonds to an amount sufficient to cover the cost of the dam and spillways and lands acquired in connection with the reservoir; this guarantee to be both as to principal and interest, the interest to be paid by the Reclamation Service until the demand for power justifies the installation of sufficient generating equipment to enable the Power Company to take over and pay the interest and amortization of this bond issue. After this date the power company would relieve the Reclamation Service of all liability and would repay all sums paid out by the Reclamation Service in connection with the bond issue, and will thereafter pay the Reclamation Service an annual rental for the use of the public property involved. At the expiration of the fifty-year license to be granted by the Federal Power Commission, the Federal Government would have the right to take over the generating plant and transmission lines at its then value, or to extend the license under the control of the power commission.

“In connection with this development, the power company proposes to install a preliminary plant at Bulls Head Rock to supply power during the construction of the Boulder Dam and to sell any surplus power there produced.

“This plan of development will meet the requirements of the agriculturist, both as to flood protection and the conservation of water for irrigation. It will supply the electric power at a minimum of loss in transmission, the minimum of investment, and under conditions which would avoid duplication and investment or competition with existing companies. The dam will be located at a point where all of the waters of the Colorado River would be impounded and conserved. It will interfere with but one other power project on the river and as other power developments are installed above, the question of regulation would be simplified and the head available for the development of power could be

maintained nearer to the maximum."—Clark, Walter G., *Comprehensive Exposition of Colorado River Projects*, Address before the League of the Southwest, date unknown.

See, also, *Hearings*, H. R. 2903, Part IV, pp. 779-780, March 20, 1924.

APPENDIX II—EXHIBIT HHH

THE EXTENT OF IRRIGABLE AREAS IN THE  
COLORADO RIVER BASIN

1. Area under Irrigation in the Entire Colorado River Area, Including Mexico.
  2. Preponderance of Land in the Lower Basin and Preponderance of Water in the Upper Basin.
  3. Irrigable Area above Boulder Canyon.
  4. Irrigable Area below Boulder Canyon.
    - a. In General.
    - b. Below Laguna Dam.
    - c. In Arizona.
    - d. In California.
    - e. In Nevada.
  5. Argument Used to Justify Division of Water upon the Basis of Irrigable Area.
1. *Area Under Irrigation in the Entire Colorado River Area, Including Mexico.*

" . . . Government projects and private developments throughout the basin have been extended until there are now 2,000,000 acres irrigated from the waters of the main stream in the United States and 190,000 in Mexico."—Weymouth, F. E., *Hearings*, H. R. 2903, Part IV, p. 711, March 20, 1924.

2. *Preponderance of Land in the Lower Basin and Preponderance of Water in the Upper Basin.*

"The points that are most impressed on my mind in the whole thing . . . is the preponderance of water in the upper basin and the preponderance of land in the lower basin and the difficulty of development in the upper basin before you reach the Grand Canyon. There are a few points of comparative ease of development and from which the results will be very large . . . The remaining opportunities are all difficult."—Davis, A. P., Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., p. 30, Thursday, 10 A. M., Jan. 26, 1922.

3. *Irrigable Area Above Boulder Canyon.*

"6. The area now in cultivation above Boulder Canyon is estimated at 1,500,000 acres. It is estimated that an additional area of 2,825,000 acres may in time be reclaimed, making a total area of 4,325,000 acres above Boulder Canyon."—Weymouth, F. E., *Hearings*, H. R. 2903, Part IV, p. 716, March 20, 1924.

#### 4. *Irrigable Area Below Boulder Canyon.*

##### a. *In General.*

"5. The area now in cultivation below Boulder Canyon is estimated at 700,000 acres. If storage can be provided, it is estimated that an additional 1,470,000 acres can in time be reclaimed, making a total area below Boulder Canyon of 2,170,000 acres."—Weymouth, Frank E., *Hearings*, H. R. 2903, Part IV, p. 716, March 20, 1924.

". . . Less than one-fourth of the area that is feasible of irrigation in the lower basin now receives water and this area at times absorbs the entire low water flow."—*Ibid.*, p. 713.

##### b. *Below Laguna Dam.*

". . . Below Laguna Dam 659,000 acres are now under irrigation and estimated future development for which water is estimated to be available with complete utilization of the river brings the total for the lower basin below Laguna Dam to 1,699,000 acres for which water supply is sufficient."—Weymouth, F. E., *Hearings*, H. R. 2903, Part IV, p. 714, March 20, 1924.

##### c. *In Arizona.*

"MR. NORVIEL: . . . In the studies prior to that time (before the first meeting of the Commissioners at Washington) I used every available bit of information that I could obtain in that time, and with my limited knowledge of affairs and conditions. I had available, so far as I know, the information that was to be supplied from the Reclamation Service and Geological Survey. I went to the several states, to the engineers and to others whom I thought had any knowledge of the situation to obtain as best I could the amount of water in the several states necessary. In our own state we were not prepared; we did not know what our needs might be out of the Colorado River. We had a vision of an empire within our state to be irrigated and reclaimed from the waters of the Colorado River. We know that we have an abundance of land to utilize a very large volume of water from the Colorado River, but just how much we did not know—we do not yet know—we have an engineering commission now in the field and I hope by the first of the year or soon thereafter they will give us a fairly accurate report upon the number of acres that can be irrigated from the Colorado River. We have, however, gone far enough into this question since our meeting in Washington, that I can confidently say, or rather I say with a great deal of confidence, that we will be able to place upon land from the Colorado River the waters of that stream to the extent of 860,000 acres, approximately."—Norviel, W. S., Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, pp. 37-38, Monday, 10 A. M., Nov. 13, 1922.

Mr. Fred T. Colter, President of the Arizona High-Line Reclamation Association, stated in a letter of May 11, 1925, that irrefutable evidence was at hand to show that the Arizona high-line irrigation project is feasible. This would mean an irrigable area of about 3,500,000 acres in Arizona. A Board of Engineers appointed to determine whether or not it would be advisable to undertake such a project, reported in the negative.—See Appen-

dix II, Exhibit JJ, *High-Line Canals for American Lands. 2. Projects for Serving Arizona Lands. a. The Arizona High-Line Canal.*

d. *In California.*

“ . . . Under the ditches of the Imperial Irrigation District alone over 400,000 acres are now under ditch, constituting the largest single irrigation project in the United States.”—Weymouth, Frank E., *Hearings*, H. R. 2903, Part IV, p. 711, March 20, 1924.

e. *In Nevada.*

“MR. SAUNDERS (Secretary, Chamber of Commerce, Las Vegas, Nevada.): . . . Nevada claims may be summarized as follows: Virgin River and tributaries, 35,000 acres; Colorado River, 32,000 acres, making a grand total of 67,000 acres. The grand total is very small when compared to other totals that have been mentioned here and will be mentioned, but it is . . . more than the surveys of Mr. Davis have allocated to Nevada in his report. We do not think it will be necessary more than to call this to your attention, and I would like to present this map as an exhibit.”—Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, p. 41, March 15-17, 1922.

For a statement of the irrigable acreage in the several states in 1920, reference may be made to Volume VII, *Irrigation and Drainage, General Report and Analytical Tables and Reports for States, with Statistics for Counties*, (prepared under the supervision of William Lane Austin, Chief Statistician for Agriculture), Fourteenth Census of the United States taken in the year 1920, Bureau of the Census, Department of Commerce, Washington, Government Printing Office, 1922.

5. *Argument Used to Justify Division of Water Upon the Basis of Irrigable Area.*

“In addition to the riparian and priority of appropriation theories of water rights, the Commissioner from Colorado now proposes another theory. It is that the water belongs to the state where the said water falls as rain. I wish to propose another theory; the water supply should be divided according to the areas in the several states included in the drainage basin. This would result in a more equitable division and more effective use of the water supply . . . and, Arizona would get a much larger share than any other state. I submit that my theory is less absurd than the new Colorado theory. Just as a bolson consists of summit flat and slope and playa, so the typical drainage basin consists of a region of upturned mountains whose function is to intercept the clouds and to secure the rainfall, of the foothill areas, and of the broad and level plains of deep rich fertile soil, the function of which is to produce great harvests of food supplies to sustain the population of this earth. If there is any portion of the drainage basin which is entitled to the use of the river waters for irrigation by “divine right” it is the stream-built plains between the mountains and the sea, the plains where canal systems can be built to resemble checker boards, and where soil and climate combine to make the earth return two hundred-fold the planted

seed. Under the new Colorado theory, Egypt, and Mesopotamia, and the plains of Lombardy watered from Alpine snows, would receive no irrigation water at all.'"—Smith, G. E. P., Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, pp. 141-142, March 15-17, 1922.

APPENDIX II—EXHIBIT JJJ

CONTRIBUTIONS TO THE FLOW OF THE  
COLORADO RIVER

“MR. NORVIEL: The next speaker for the morning is Mr. John C. Hoyt, Hydraulic Engineer, Division of Surface Water, U. S. Geological Survey. I desire to say that Mr. Hoyt is here as representative of the Geological Survey of the United States . . . (From statement read by Mr. Hoyt).

“The following table shows the distribution of the drainage area among the seven states and Mexico and the average annual contribution from each to the total flow of the stream.

State	Drainage Area		Flow	
	Square Miles	Per Cent	Acre-feet	Per Cent
Wyoming	18,000	7.2	2,300,000	12.5
Colorado	39,000	15.5	11,800,000	64.1
Utah	40,000	15.9	2,300,000	12.5
New Mexico	23,000	9.2	1,260,000	6.8
Arizona	113,000	45.0	740,000	4.0
Nevada	12,000	4.8	Negligible	
California	4,000	1.6	“	
Mexico	2,000	.8	“	”

—Colorado River Commission, *Phoenix Hearings*, Federal Court Rooms and High School Auditorium, Phoenix, pp. 122-125 passim, March 16, 1922.

“MR. CARPENTER: (Data presented as follows):

“Annual stream-flow produced.....	12,100,000	acre-feet
“Annual consumption, 850,000 acres.....	1,100,000	“ “
“Annual unused flow to Colorado River.....	11,000,000	“ “
“Future maximum annual requirements of Colorado lands .....	4,000,000	“ “
“Ultimate annual surplus available to Lower Colorado River .....	8,000,000	“ “

“In other words, of all water rising in that State, we cannot take or use an equitable part. We cannot use the amount of water to which we would be reasonably entitled were the physical conditions different within our territory. The same is true, in a large measure, of Wyoming, Utah and New Mexico. In other words, the four upper States are in this position:

“That the topography and configuration of the mountainous states of origin are such, and the water supply thereof is so abundant, and the areas which may be irrigated and the consumption which may take place therein is so limited by nature, that the states of origin will never be able to beneficially use even an equitable part of the waters rising and flowing within the respective territory of each, and the major portion of such waters will flow from such states of origin for the benefit of the territory of the lower states irrespective of the uses and development within the states of origin.’

"In view of the fact that no one of the states of origin will ever be able to consume the water within her borders, to now fix any harsher limitation upon her than nature has imposed, is to be looked upon with disfavor. To a state which produces and yields within and from her territory a resource so bounteous that she may not only develop all her own available lands, in course of time, but may also furnish the greater part of the supply with which to develop the lower states and make them prosperous, no other rightful position may be taken than that she be limited only by those bounds which nature has fixed, because the lands which she may reach are so isolated, so cut up by mountains, so scattered and limited in areas, that for her to attempt to fix a safe limitation upon her acreage, she would be compelled to far exceed in her forecast the acreage which will ever be actually reclaimed, in order that she might amply protect herself against future adverse assertions. Her claim would have to be far in excess of anything that has already been considered, in order that sufficient security might be given the future development within her territory, although the amount actually developed might fall far below any figures already considered. Otherwise, her limitation of area would be so out of proportion to her water supply that we could expect no other than an unfavorable view by her legislature and ultimate defeat of the present objective."—Colorado River Commission, *Minutes of the Seventh Meeting*, Department of Commerce, Washington, D. C., pp. 111-112, Monday, 2:30 P. M., Jan. 30, 1922.

Governor George W. P. Hunt of Arizona charges that California undertakes to claim a majority portion of the benefits of the Colorado River although contributing only 6,000 square miles to the drainage area.—*Telegram to Hon. Carl Hayden, House of Representatives, Washington, D. C., March 21, 1924, Hearings, H. R. 2903, Part V, p. 846, March 25, 1924.*

APPENDIX II—EXHIBIT LLL

THE ECONOMIC BASIS OF AN EQUITABLE  
DIVISION TO PROMOTE MAXIMUM  
PRODUCTIVITY

1. The Economic Interests of the Seven States in Colorado River Development.
  - a. Arizona.
  - b. California.
  - c. Colorado.
  - d. Nevada.
  - e. New Mexico.
  - f. Utah.
  - g. Wyoming.
2. The Relation of Products and Water Requirements of the Colorado River Area to the Problem of Securing the Proper Combination of the Factors of Production.
  - a. Comparative Statement by the Bureau of Agricultural Economics Showing Returns per Acre from Irrigated Land in the Drainage Basin of the Colorado River above Boulder Canyon and below Boulder Canyon.
    - (1) Correspondence with the United States Department of Agriculture, Bureau of Agricultural Economics, Washington, D. C.—Letter of Transmittal.
    - (2) Memorandum Regarding Returns from Agriculture in the Colorado River Drainage Basin.
  - b. Comparative Statement of Returns from United States Reclamation Service Projects in the Upper and Lower Basins of the Colorado River Area.
    - (1) Testimony of Mr. Howard D. Sullivan, Deputy State Immigration Commissioner of Colorado.
    - (2) Table Compiled by Mr. R. I. Meeker, Irrigation Engineer, Special Deputy State Engineer, Colorado.
  - c. Comparative Data Submitted by Mr. McCune, State Engineer of Colorado.
3. Products of the Coachella County Water District.
4. The Effect of Additional Inches of Water upon the Number of Bushels of Wheat Produced per Acre.

5. The Question of the Amount of Water Debt Which a Particular Area Can Economically Support.
6. Attempts to Define "Equitable" Division.
1. *The Economic Interests of the Seven States in Colorado River Development.*
  - a. *Arizona.*

"At the present time there is no urgent need in Arizona for the development of the Colorado River. In California the need is urgent, both for power and for late summer water supply. The power projects of the Salt and Verde Rivers should be further developed before the construction of an Arizona project on the Colorado, and, because of the high cost of long distance transmission, Colorado River power can not be sold in central and southern Arizona at so low prices as power from the Salt and Verde. So long as present prices of fuel oil prevail, Colorado River power cannot compete with steam power."—Smith, G. E. P., *A Discussion of Certain Colorado River Problems*, by G. E. P. Smith, Bulletin No. 100, University of Arizona, College of Agriculture, Agricultural Experiment Station, p. 145, Feb. 10, 1925.

". . . The reports of the Census of 1920 show that of the irrigated lands in Arizona, one-twelfth of the acreage derives its water supply by pumping from wells and that the average cost of the pumped water per year is about six times the average cost of gravity water. Our farmers and our miners need cheap hydro-electric power, and they want it, not after they are dead, but now."—Smith, G. E. P., Colorado River Commission, *Phoenix Hearing*, Federal Court Rooms and High School Auditorium, Phoenix, p. 143, March 15-17, 1922.

b. *California.*

"MR. McCLURE: . . . The State of California, although having the smallest amount of land within the Basin, has the largest present monetary interest in the Colorado River because of the very great and valuable development in the Imperial Valley. We have already experienced a deficiency of water during the irrigation season."—Colorado River Commission, *Minutes of the First Meeting*, Department of Commerce, Washington, D. C., p. 22, Thursday, 10 A. M., Jan. 26, 1922.

For other indications of California's interest in Colorado River development, see Appendix II, Exhibit JJ, *High-Line Canals for American Lands, 1. Projects for Serving California Lands*. In addition to the projects there mentioned reference should be made to San Diego's proposal to pump water "from the end of an All-American Canal to an elevation of 2,500 feet, run it through a tunnel and drop it down on the other side of the mountain, recovering a large percentage of the power, and then use the water in San Diego."—Bacon, John L., Mayor of San Diego, *Hearings*, H. R. 2903, Part II, p. 389, March 3, 1924.

c. *Colorado.*

"MR. TOBIN: . . . I think I speak frankly and honestly in regard to my own section, that is Montrose, San Miguel, Dolores and Ouray counties. We are

fifty per cent developed at the present time, and as far as water is concerned, under the actual conditions why should we not have the water for our future development? We contend as American citizens that we are entitled to all that we are able to use beneficially, and consequently that is why we stand on the proposition that the waters belong to the State of Colorado, and if properly appropriated and properly used, and put to a beneficial use, the steady flow in the Colorado River will be thereby increased.”—Colorado River Commission, *Grand Junction Hearing*, Grand Junction, p. 76, March 29, 1922.

“MR. KEYES: . . . The next will be a paper by Mr. Murray Lee. Mr. Lee is a graduate of the Colorado School of Mines. He has been identified with the farming industry of the western states. His paper will be on ‘SMALL FRUITS, VICINITY OF DENVER.’

“‘Strawberries.

“‘The strawberry is the most important fruit grown in this section. The yield will average 300 24-quart crates, 7,200 quarts per acre worth \$2.50 per crate, or \$750.00 gross, netting \$450 to \$500 per acre. The active life of a bed is 3 or 4 years, then replanting becomes necessary. They require much water especially during the bearing season from June first to July fifteenth and probably receive the full two acre-feet furnished by the Rocky Mountain Ditch under which they are mostly grown. No crop failure has occurred during the period from 1912 to 1921 inclusive.

“‘Blackberries—\$250.00 gross per acre.

“‘Currants—\$250.00 gross per acre.

“‘Raspberries will produce an average crop of 300 pint crates per acre worth \$3.00 per crate or a gross value of \$900 per acre. The active life of a planting is from six to ten years and there has been but one failure in the ten years beginning with 1912. They require much water during the bearing season from July 15 to September 1st, and are grown under the Rocky Mountain Ditch where they receive at least two acre-feet of water.

“‘The following figures are the average of a ten-year period.

“‘Plums—\$160.00 per acre gross. Need little water.

“‘Apples—\$75.00 per acre gross. Require much water.’ It will be noted that the bush and vine fruits enumerated are grown under the Rocky Mountain Ditch, the oldest and most reliable water right in this locality, and the lands thereunder are from four to eight miles distant from the center of the city. Probably none of this land can be purchased for less than \$500 per acre and more than half of it will bring \$1000.00 per acre exclusive of the improvements.”—Colorado River Commission, *Denver Hearings*, State Senate Chamber, Denver, pp. 96-98, passim, March 31, 1922.

#### d. Nevada.

“MR. BOYLE: . . . It may be said that Nevada’s interest in this proposition is not so great, from the standpoint of irrigation, as that of other States.

“The State engineer has computed that some 80,000 acres of land may be put under cultivation as a result of the construction of a dam at Boulder Canyon.

"MR. HAYDEN: Where in Nevada is that land located?

"MR. BOYLE: Part of it in small jetties, in the Virgin River, the Muddy River, and on the Colorado River itself—the little inlets on the river basin; and part of it would be a pumping irrigation enterprise that would lie upon the mesa around the rim of the proposed location. . . .

"But when you get into Clark County, the section which will be served by the Boulder Canyon Dam, they grow everything that can be grown in Southern California, not excepting citrus fruits; they are already shipping citrus fruits from the Muddy Valley . . . The belief is prevalent among the conservative engineers in that section that the development of power in Nevada in the course of a decade or two ought to bring double the present small population of the State into one or two counties in the south."—*Hearings*, H. R. 2903, Part IV, pp. 583, 587-588, passim, March 18, 1924.

The Pacific Borax Company, largest producer in America of borax and borax products, carries on its major operations in Clark County. Plaster for the California market is developed at Crystal, Clark County. The necessary power is developed from oil.—Boyle, Emmet D., ex-governor of Nevada, *Hearings*, H. R. 2903, Part IV, p. 584, March 18, 1924.

It is also pointed out that the demand for milling purposes alone, considering the contemplated operations of the gold fields of southern Nevada, will be 5,000 horse-power.

"The deposits of aluminite, which is a mineral analogous to bauxite in southern Nevada and in Arizona, would have a tendency to shift the development of that industry from the vicinity of Niagara to the section around Boulder Canyon. There are larger possibilities for commercial operation of aluminite in that section of the country than there are in the vicinity of Niagara Falls, granting that the power rates would be equal.

"Moreover, this is not speculation; it comes from a consultation with the directorate of the properties themselves. The tendency now is to attempt the electrolytical refining of copper on the Pacific coast. There is one plant at the present time at Tacoma; but two of the largest copper producers in the West, the Utah Copper Company and the Nevada Consolidated Copper Company, are tributary to the Boulder Canyon site, in the sense that their products, if they are to be shipped to the Pacific coast and transshipped, either by rail or by canal, would pass within 30 or 40 miles of it, and I may say that their engineers have given serious consideration to the proposition of establishing their electrolytic refineries near the Boulder Canyon Dam if it is built.

"MR. LEATHERWOOD: Have they made any report on that line?

"MR. BOYLE: No; I think as an industrial concern they probably would not. But the tendency would be to refine there rather than to ship across the country to Perth Amboy, N. J., in the face of a continually increasing demand for copper in the Orient. In other words, that copper which is destined to the Far East by a westward route would not be subjected to the economic waste of continental transshipment for refining at Atlantic seaboard points.

“MR. LEATHERWOOD: Do these two companies to which you have just referred do their own refining?”

“MR. BOYLE: No; the manufacture of copper, if I may go into those details, is along these lines: The western plants make in the main what is known as a ‘placed’ copper; they make the matte first, which is a copper containing a large percentage of sulphur, and then that sulphur is burned out in the converters, almost exactly as copper is burned out of pig iron in the manufacture of steel. And they make a product which runs about 99 plus copper, but which still contains a sufficient amount of sulphur to shorten the copper, as they call it, and to lower its ductility and make it unsuited for drawing into wire, and do all of those other things, or apply it to the uses for which copper is adapted until it is electrolytically refined.

“MR. WINTER: Do they not also extract some gold and silver?”

“MR. BOYLE: Yes; that point is well taken, all of these copper ores contain percentages of gold and silver, which is recovered in the electrolytic process. But all of those items in the aluminite industry and the process of copper refining are things to be considered as more than possibilities that would follow this sort of development. The feasibility of the operation is considered to have been proven by the research thus far conducted.

“The southern section of Nevada likewise is a tremendous producer of zinc. What is said to be the largest carbonated zinc plant in the world is located a short distance from Las Vegas and 50 miles from the Boulder Canyon Dam site.”—*Hearings*, H. R. 2903, Part IV, pp. 586-587, March 18, 1924.

“MR. WEST: . . . Without hydroelectric power being available, neither Goldfield nor Tonopah would have ever had the outputs of mineral wealth that they have shown.”—*Ibid.*, p. 611, March 19, 1924.

e. *New Mexico.*

“MR. MAY: My statements are in writing. I will read what I have prepared.

“With regard to the irrigation possibilities and the worth of these waters for irrigation on New Mexico lands, it might be well to state that an acre-foot of water applied on the lands in New Mexico, will produce as large a tonnage of hay or other crops, as can be produced on the lower valleys of the Colorado River with a like amount of water . . .

“It has been stated without contradiction that the undeveloped coal fields in San Juan County exceed the total amount of coal in the state of Pennsylvania, and with this industrial development together with irrigation, it is believed by the people in our state that the San Juan Valley is one of the richest regions of the West and when developed will be a great asset to the West and to the whole of the United States.’”—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 168-169, April 1, 1922.

f. *Utah.*

“MR. WALLACE: . . . Once we get power we will rapidly develop the Uintah Basin. There is in the Uintah Basin one of the greatest resources in the United States. I refer to the Oil Shale, and as soon as the price of oil gets higher it

will become commercially valuable. We are going to build in the Basin of the Colorado a great many cities, because the resources are of a nature that call for urban development."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, p. 84, March 27, 1922.

"MR. BEVERIDGE: . . . Some of the mines have gone to large expense in the installation of steam generating plants to operate the mines by electric power. If the development of the coal industry continues there is no doubt that these industries will turn to water power—electrical power developed in the waters of the Green River Basin. There is also the possibility—the very great probability in fact—of the conversion of one of the steam railroads across the State of Wyoming into an electrified system. There are other developments which will come in time, one of the principal ones is the development of the shale oil industry—the refining industry in Green River Basin which will require a large amount of power, and which will also require a large amount of water, although a great deal of the water which will be used will eventually be returned to the stream after use."—*Ibid.*, pp. 108-109, March 28, 1922.

"MR. S. R. INCH: . . . Filings have been made with the Federal Power Commission on the Green River and its tributaries, which represent approximately 750,000 horsepower of continuous power when the river flow is adequately equalized by the construction of the necessary dams. This power will be within easy transmission distance of all parts of the State, and the major industrial centers of the State can be reached much more readily from power plants built on the Green River than from those now contemplated on Colorado River . . . The amount of power above mentioned looks like a large figure and of course it will take a number of years before the local market requires such an amount of power. However, it is of interest to note that the power system with which I am connected has found it necessary to install power plant facilities within the last eight years amounting to about 100,000 horsepower. As soon as the present industrial depression is passed, our present facilities will be fully loaded and additional developments will be absolutely necessary."—*Ibid.*, pp. 50-51, March 27, 1922.

g. *Wyoming.*

"MR. CORTELL: . . . Running through the middle of the Green River basin is the main line of the Union Pacific, branching off at Granger, so that the transportation facilities are perhaps unexcelled in like areas in the United States. That valley has access to all markets in both directions, and its products are now going to California, Oregon and Washington as well as to different points in the East . . . The Union Pacific serves a very great territory and ultimately no doubt there will arise the proposal, greatly desired by railroads, of electrifying the motive power, and the power of Green River Valley would be available where the Union Pacific crosses this territory. There is a prospective market for that one purpose alone for a vast amount of power to be developed by storage in dams at different points along the road.

"There is also situated in that basin the greatest coal mining region in Wyoming and one of the great coal mining regions of the western part of the United States—perhaps the most important single coal region of the western states, centered around Rock Springs, Kemmerer and other camps that cluster around

that region. There is a need for power there and there will be a greater need for power as we look forward to the time when water power will supplant the use of coal and thereby effect great economical saving. While I am on this subject, I want to point out the fact that there is need for the development of food crops in this region. These great mining camps consume large quantities of food which is not now produced for them there. It is important that the agricultural resources of that region be developed in order to reduce the cost of living at these mines and the cost of the coal shipped to California, Washington and in all directions from the coal field. Every citizen of the entire western country where Rock Springs and Kemmerer coal goes would reap the benefit."—Colorado River Commission, *Cheyenne Hearing*, State Senate Chamber, Capitol Building, Cheyenne, pp. 16-18, passim, April 2, 1922.

2. *The Relation of Products and Water Requirements of the Colorado River Area to the Problem of Securing the Proper Combination of the Factors of Production.*

a. *Comparative Statement of the Bureau of Agricultural Economics Showing Returns per Acre from Irrigated Land in the Drainage Basin of the Colorado River above Boulder Canyon and below Boulder Canyon.*

- (1) *Correspondence with the United States Department of Agriculture, Bureau of Agricultural Economics, Washington, D. C.,—Letter of Transmittal.*

"United States Department of Agriculture,  
Bureau of Agricultural Economics,  
Washington.

"April 13, 1925.

"Mr. R. L. Olson,  
8 Conant Hall,  
Harvard University,  
Cambridge, Mass.

"Dear Sir:

"Dr. L. C. Gray has referred to me your letter of April 8, asking for information regarding crop returns per unit of water and crop potentialities in the different sections of the Colorado River Basin. I am enclosing a copy of a statement which I prepared for the Colorado River Commission when it was holding hearings several years ago. These bear directly on the point at issue but do not answer your questions specifically. They do, however, indicate the sources of information available for answering your questions.

"The tables given show average values of farm property, capital invested in irrigation enterprises, cost of operation and maintenance of irrigation works, expenditures for labor and crop values. This paper does not show the quantities of water used in the upper and lower sections, and the published Census figures do not show this. The Census records probably do show it, but they may have been destroyed. Taking the average quantities of water delivered to water users in Colorado and Arizona as reported by the last census as representative of the upper and lower sections, we have 1.7 acre-feet per acre for the upper section

and 3 acre-feet per acre for the lower section. These figures are contained in the State reports on irrigation which can be obtained in the form of separates from the Census Bureau or found in Volume 7 of the report for the fourteenth census.

"Comparing gross crop returns with quantity of water used, the lower section shows the larger return per unit of water. Since those expenses of production which are reported indicate that the cost of producing the larger crop return in the lower valley is more than three times as great as that of producing crops in the upper valley, it is probable that the net return per unit of water is considerably larger in the upper valley. Furthermore, a large part of the water used in the upper valley returns to the stream in the form of seepage and can be used again on lower lands, while most of the return water in the lower valley reaches the stream too far down to be used again.

"The Census reports will supply figures for comparing returns from the crops grown during the census year. It is difficult to find any basis other than this for discussing the crop potentialities of the two sections. In the census year cotton was the principal crop on the lower river, while alfalfa was probably the leading crop on the upper river. It is possible to grow citrus fruits in the lower valleys and deciduous fruits are very important in the upper valleys. The values of these crops depend so largely on market conditions that comparisons are difficult.

"I would suggest that you take the reports of the fourteenth census and compare such crop returns as are given for the counties named on the first page of the enclosed memorandum. You can draw your own conclusions from these figures.

"The Division of Agricultural Engineering of the Bureau of Public Roads, of this Department, and several of the State experiment stations have made a great many experiments showing the quantity of water used in producing the various crops. Few of these experiments have been made in the basin of the Colorado River, but you can find in them the material for making estimates of returns per unit of water that may be of interest to you. A bulleting summarizing a part of these measurements, prepared by Dr. Samuel Fortier, of this Department, is now in press and should be ready for distribution soon.

"I shall be glad to give you any further suggestions that I can after you have determined how much use you can make of the reports mentioned.

"Very truly yours,

(Signed) R. P. Teele.

"Enclosure

Agricultural Economist."

(2) *"Memorandum Regarding Returns from Agriculture in the Colorado River Drainage Basin:*

"Prepared by R. P. Teele,  
Bureau of Agricultural Economics,  
U. S. Department of Agriculture.

"The following tables have been prepared for the purpose of showing, so far as it can be done by Census returns, the net returns per acre from irrigated

land in the drainage basin of Colorado River, dividing that basin into two sections, that above Boulder Canyon, and that below. Gila River is not included, except that Maricopa County, Arizona, is included as representative of the lands in the lower section.

"The Census returns are all tabulated by counties. Some counties lie partly within and partly without the Colorado drainage basin, and it is not possible to divide the returns from those counties. The counties included are as follows: *Upper River*: Wyoming—Freemont, Sweetwater, and Uinta; Colorado—Moffat, Routt, Grand, Summit, Eagle, Rio Blanco, Garfield, Pitkin, Mesa, Gunnison, Delta, Montrose, Ouray, San Miguel, Dolores, San Juan, Archulets, La Plata, and Montezuma; Utah—Daggett, Duchesne, Uintah, Carbon, Emery, Grand, Wayne, San Juan, Kane, and Washington; Nevada—Clark; New Mexico—San Juan, and McKinley; Arizona—Mohave, Coconino, Navajo, and Apache. *Lower River*: Arizona—Maricopa, and Yuma; California—Imperial. It is not believed that the inclusion or omission of some of the border counties lying partly within the drainage basin would change the general tenor of the results.

"The items shown are as follows:

- "I Area of land in farms.  
Value of all farm property.  
Average value per acre.
- "II Investment in irrigation enterprises. Area of land to which enterprises were capable of supplying water in 1920.  
Average investment per acre.
- "III Cost of operation and maintenance of irrigation works.  
Area for which cost is reported.  
Average cost per acre irrigated.
- "IV Expenditure for labor.  
Average expenditures per acre of improved land.
- "V Value of all crops.  
Area of improved land.  
Average value of crops per acre of improved land.

"It should be noted that neither cost of production nor returns is complete. The items of cost not reported include the labor of the farmer and his family and all expenses other than labor for growing, harvesting, and marketing crops and other products. On the other side, only crop values are shown. The Census reports do not show returns from the sale of live stock, which forms a large part of the returns for farmers in the upper part of the drainage basin, and a smaller part for the lower basin. However, adding the value of crops and the value of live stock and live stock products sold would produce duplication to some extent, since a large part of the crops is fed to live stock on the farms, and the return comes through the sale of the stock. It is clear, therefore, that the figures given can not be taken as showing the net returns from agriculture in the two sections, but as indicating the probable relation between the net returns in the two sections.

"It should be kept in mind also, that the values and cost shown represent the war-time boom and not the conditions now existing. This is further reason for considering the figures given as indicators of relative values only.

"On the basis suggested, and considering the values for the upper River as 100, we get the following result.

<i>Item</i>	<i>Upper river</i>	<i>Lower river</i>
"Capital invested per acre.....	100	342
Farm property, per acre.....	100	425
Irrigation works, per acre.....	100	199
"Annual expense.....	100	349
Interest on investment of 6%.....	100	342
Cost of operation and maintenance of irrigation works.....	100	413
Expenditure for labor.....	100	340
"Average value of crop per acre.....	100	222

"AVERAGE VALUE PER ACRE OF ALL FARM PROPERTY IN THE DRAINAGE BASIN OF COLORADO RIVER, EXCEPT GILA RIVER.

	<i>Land in farms (acres)</i>	<i>Value of farm property</i>	
		<i>Total</i>	<i>Average per acre</i>
<i>Lower River</i> .....	1,207,321	\$190,248,883	\$157.58
Arizona .....	859,836	121,077,338	140.81
California .....	347,485	69,171,545	199.06
<i>Upper River</i> .....	8,267,736	306,222,622	37.04
Wyoming .....	835,042	32,619,835	40.26
Colorado .....	3,178,894	164,228,444	51.66
Utah .....	981,710	46,638,201	47.51
Nevada .....	13,544	1,597,864	117.98
New Mexico.....	256,829	8,607,582	38.51
Arizona .....	3,001,708	52,530,696	17.50

"AVERAGE CAPITAL INVESTED IN IRRIGATION ENTERPRISES PER ACRE TO WHICH ENTERPRISES WERE CAPABLE OF SUPPLYING WATER IN 1920, IN DRAINAGE BASIN OF COLORADO RIVER.

	<i>Area for which water was ready in 1920 (acres)</i>	<i>Capital invested</i>	
		<i>Total</i>	<i>Average per acre</i>
<i>Lower River</i> .....	916,895	\$39,268,331	\$42.83
Arizona .....	459,080	25,044,746	54.55
California .....	457,815	14,223,585	31.07

<i>Upper River</i> .....	1,907,605	40,993,189	21.49
Wyoming .....	392,764	5,406,610	13.77
Colorado .....	940,746	26,677,128	28.36
Utah .....	485,060	5,853,526	12.07
Nevada .....	6,282	352,332	56.09
New Mexico.....	55,224	2,364,155	42.66
Arizona .....	27,329	680,722	24.91

"AVERAGE COST OF OPERATION AND MAINTENANCE OF IRRIGATION WORKS PER ACRE, COLORADO RIVER BASIN, EXCEPT GILA RIVER.

	<i>Area for which cost is reported (acres)</i>	<i>Cost of operation and maintenance</i>	
		<i>Total</i>	<i>Average per acre</i>
<i>Lower River</i> .....	677,198	\$3,022,852	\$4.46
Arizona .....	274,491	800,288	2.92
California .....	402,707	2,222,564	5.52
<i>Upper River</i> .....	1,162,653	1,256,708	1.08
Wyoming .....	180,462	128,195	.71
Colorado .....	699,225	809,193	1.16
Utah .....	230,041	238,071	1.03
Nevada .....	4,612	28,106	6.09
New Mexico.....	41,422	36,595	.88
Arizona .....	6,898	16,540	2.40

"AVERAGE EXPENDITURE FOR LABOR, PER ACRE OF IMPROVED LAND, IN COLORADO RIVER BASIN, EXCEPT GILA RIVER.

	<i>Area of improved land (acres)</i>	<i>Expenditure for labor</i>	
		<i>Total</i>	<i>Average per acre</i>
<i>Lower River</i> .....	361,001	\$10,976,092	\$17.39
Arizona .....	320,293	5,901,595	18.43
California .....	310,708	5,074,497	16.33
<i>Upper River</i> .....	1,752,047	8,955,649	5.11
Wyoming .....	372,871	1,282,995	3.44
Colorado .....	904,382	5,600,859	6.19
Utah .....	309,219	1,343,213	4.34
Nevada .....	5,646	45,218	8.01
New Mexico.....	45,769	159,211	3.48
Arizona .....	114,160	524,153	4.59

"AVERAGE VALUE OF ALL CROPS PER ACRE OF IMPROVED LAND IN COLORADO RIVER BASIN, EXCEPT GILA RIVER.

	<i>Area of improved land (acres)</i>	<i>Value of all crops</i>	
		<i>Total</i>	<i>Average per acre</i>
<i>Lower River</i> .....	631,001	\$49,735,691	\$ 78.82
Arizona .....	320,293	32,534,957	101.58
California .....	310,708	17,200,734	55.36
<i>Upper River</i> .....	1,569,956	55,621,584	35.45
Wyoming .....	190,780	3,621,884	18.98
Colorado .....	904,382	39,226,401	43.37
Utah .....	309,219	8,346,694	26.99
Nevada .....	5,646	276,738	49.01
New Mexico.....	45,769	1,320,342	28.85
Arizona .....	114,160	2,859,525	25.05

"SUMMARY.

<i>Item</i>	<i>Upper River</i>	<i>Lower River</i>
Capital invested per acre.....	\$58.53	\$200.41
Farm property per acre.....	37.04	157.58
Irrigation works per acre.....	21.49	42.83
Annual expense .....	9.70	33.87
Interest on investment at 6%.....	3.51	12.02
Cost of operation and maintenance of irrigation works .....	1.08	4.46
Expenditure for labor.....	5.11	17.39
Average value of all crops, per acre.....	33.19	78.82

b. *Comparative Statement of Returns from United States Reclamation Service Projects in the Upper and Lower Basins of the Colorado River Area.*

(1) *Testimony of Mr. Howard D. Sullivan, Deputy State Immigration Commissioner of Colorado.*

"CROP YIELDS PER ACRE, UPPER AND LOWER COLORADO RIVER BASIN.

"(By Howard D. Sullivan, Deputy State Immigration Commissioner).

"The testimony of those who have made a careful study of the water resources of the Colorado River Basin and of the possibilities for irrigation indicates that there is enough water to irrigate all land that can be irrigated at reasonable expense, both in the upper and lower basins so that there is apparently no danger that Colorado or Wyoming will rob Arizona or California of the water that they can use profitably in the production of crops. Going a little further, such com-

parative figures as are available do not indicate that returns from like crops are greater in the lower basin than they are in Colorado, nor that the use of a given amount of water in Arizona or in the Imperial Valley of California will produce any more than the same amount of water will produce on western Colorado soil.

“Tables prepared and submitted to the Commission by Mr. Meeker (See Exhibits E, F and M, Appendix, Denver Hearings. These data are taken from the United States Census Reports of 1920.) give comparisons between the production per acre of certain crops in western Colorado on the one hand and in Maricopa county, Arizona, and Imperial county, California, on the other. The figures used are from the Census reports on agriculture for 1919. An examination of the tables will show that there is comparatively little difference in average yields per acre in the three districts considered, though the use of water per acre in the lower valley is generally greater than in Colorado.

“Alfalfa is one of the leading crops in western Colorado. It is also grown extensively in Maricopa county, Arizona, and Imperial county, California. It will be seen from the tables before referred to that the average yield of alfalfa in the nineteen counties in western Colorado in 1919 was 2.3 tons per acre, compared with 2.8 tons in Maricopa county, Arizona, and 2.0 tons in Imperial county, California. . . .

“Other crops for which average yields per acre are given for both western Colorado and the lower basin are potatoes, corn, wheat and oats. It will be noted that the average yields vary but little, except in the case of potatoes, where the average yield for western Colorado is considerably more than twice as great as that for the lower basin. Potatoes are not grown extensively in the lower basin.

“It is admitted that comparisons of crop production in different localities for a single year do not furnish a fair index to the relative crop producing value of the localities, for the reason that conditions vary greatly from year to year and are seldom the same in any two widely separated areas. In order that the comparison may afford a fair basis for reaching the desired conclusions we have found it necessary to look into climatic conditions for the localities under comparison for the year 1919 to determine what kind of a crop season it was. We have taken crop condition figures for the various crops under comparison, as shown by the reports of the Bureau of Crop Estimates of the United States Department of Agriculture.

“In Colorado crop conditions are ascertained monthly by counties for all important crops, which makes it easy for us to show what the average condition of crops in any given group of counties was at any time since this system was put into effect. We have here no data giving condition of crops for Arizona and California by counties in 1919 but, for Arizona, conditions in Maricopa county generally are about the same as for the state as a whole, since Maricopa County is by far the most important agricultural district in the state.

“On August 1, 1919, the average condition of alfalfa in the nineteen counties of western Colorado was 88 per cent of normal. At the same time the average condition of alfalfa in Arizona was 94 per cent. The average condition of winter wheat at harvest time in western Colorado was 78 per cent, compared

with 75 per cent in Arizona. The average conditions of spring wheat at harvest time in western Colorado was 82 per cent. No spring wheat is grown in Arizona. The average condition of oats at harvest time in western Colorado was 83 per cent, compared with 95 per cent in Arizona. The average condition of barley at harvest time in western Colorado was 83 per cent, compared with 95 per cent in Arizona. The average condition of corn on September 1 in western Colorado was 75 per cent, compared with 96 per cent in Arizona. The average condition of potatoes on September first in western Colorado was 80 per cent, compared with 92 per cent in Arizona.

“From these official figures it will be noted that conditions of all crops in 1919, with the single exception of winter wheat, were much better in Arizona than in western Colorado. In other words, the season of 1919 was much more favorable to crop production in Arizona than it was in western Colorado. If a year could be selected when crop conditions were the same in each district it would be found that average yields for western Colorado would be higher in relation to those for Arizona than are those for 1919.

“It should also be borne in mind that much of the acreage cultivated in western Colorado is not irrigated, while practically all crops grown in Maricopa county, Arizona, and Imperial county, California, are irrigated. Reports of county assessors to the Colorado Department of Immigration show that only 59 per cent of the corn grown in western Colorado in 1919 was irrigated, 44 per cent of the winter wheat, 59 per cent of the spring wheat, 64 per cent of the oats and 87 per cent of the potatoes. Data are not available giving the average yields for irrigated crops alone in western Colorado in 1919, but if they were they would undoubtedly show yields from 15 to 20 per cent higher than those given in the tables.

“Considerable areas in the lower Colorado basin are devoted to crops which yield high returns per acre, and which are not grown at all in Colorado. It is evident, however, that the expense of producing these crops is high, for our Colorado people are required to pay 50 cents to \$1.00 per dozen for Arizona and California oranges, while they can buy our western slope potatoes at \$2.00 per 100 pounds. For this reason we can eat those California and Arizona oranges but once a day, usually to give us an appetite for real food, and a good many of us can not afford to eat them at all. Colorado potatoes, however, are on our tables from two to three times a day the year round.”—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 84-88, March 31, 1922.

(2) *Table Compiled by Mr. R. I. Meeker, Irrigation Engineer, Special Deputy State Engineer, Colorado.*

“The following table, Crop Report Data U. S. Reclamation Service Projects, which is offered as an exhibit. (See Exhibit F, Appendix, Denver Hearings), shows that the average value per acre of staple crops on the lower basin United States Reclamation projects averages less than double the price for upper basin project lands over a five-year period. In other words, available data indicate that an acre-foot of water applied on upper basin project lands produces as much or more per acre in food products and crop values than along the lower Colorado River. In addition to crop production, livestock is dependent on agriculture, and in the last analysis should be added in any economic comparison of two

areas.'"—Meeker, R. I., *Colorado Data—Colorado River Basin*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 16, March 31, 1922.

"CROP REPORT DATA  
U.S.R.S. PROJECTS—COLORADO RIVER BASIN<sup>1</sup>

Compiled from published reports U. S. Reclamation Service. Acres under crop and average value per acre of all crops produced. Compiled by R. I. Meeker.

	<i>Acres irrigated</i> <sup>2</sup>	<i>Dollars per acre</i>
<i>1915</i>		
Uncompahgre	40,553	25.76
Yuma	25,101	34.81
Salt River	171,832	21.31
<i>1916</i>		
Grand Valley	1,561	35.03
Uncompahgre	48,352	40.32
Strawberry	25,066	52.70
Yuma	28,283	50.75
Salt River	173,359	48.65
<i>1918</i>		
Grand Valley	6,387	64.87
Uncompahgre	57,310	57.62
Strawberry	29,788	55.13
Yuma	45,049	113.32
Salt River	184,432	98.70
<i>1920</i>		
Grand Valley	10,760	48.80
Uncompahgre	63,730	53.30
Strawberry	29,250	66.50
Yuma	54,480	61.09
Salt River	193,350	96.00
<i>1919</i>		
Grand Valley	8,899	64.12
Uncompahgre	59,746	56.76
Strawberry	29,255	67.50
Yuma	152,324	134.00
Salt River	188,232	126.27

*c. Comparative Data Submitted by Mr. McCune, State Engineer of Colorado.*

"MR. McCUNE: 'I have been acquainted with agriculture in California for the last twenty-eight years. A comparative study of the two sections led me to make the statement twenty-four years ago that when properly developed, the lands of the inter-mountain valleys of the Western slope will be as valuable as

<sup>1</sup>The Yuma and Salt River Projects are the Lower Basin projects.

<sup>2</sup>"Acres irrigated"—acres under crop only.

those of California and Arizona. My experience and study since that time more strongly confirm me in this view. Especially the quality of the products grown compared to that in the lower altitude is to the advantage of the upper country.

“We are just beginning the cultivation of head-lettuce at an altitude of from 8,000 to 9,000 feet with wonderful results. \$500, \$600, \$800 and in a few instances \$1,000 per acre have been realized, and that with the use of only from six inches to an acre-foot of water. The finest quality of celery, cauliflower and seed potatoes free from disease is grown in these altitudes. The prize steer in two of the international stock shows came from these mountains, grown at an altitude of over 8,000 feet. So we can confidently say that owing to the quality of the products and the yield, we can produce as much value per acre-foot of water consumed as can be done in the lower altitudes.”—Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, p. 27, March 31, 1922.

### 3. *Products of the Coachella County Water District.*

“MR. YAGER:

“PRODUCTION OF THE CHIEF CROPS OF COACHELLA VALLEY FOR THE YEAR 1923.

<i>Crop</i>	<i>Number of cars</i>	<i>Number of pounds</i>	<i>Value</i>
Grapefruit .....	12		\$ 30,000
Grapes .....	100		250,000
Dates .....		375,000	115,000
Date offshoots (7,500).....			75,000
Garden truck.....			300,000
Onions .....	710 <sup>3</sup>		663,282
Cotton (3,800 bales).....			570,000
Cottonseed (mainly pure, for planting purposes)...			152,000
Alfalfa .....	7,000		140,000
Total value.....			2,295,282

*Hearings*, H. R. 2903, Part IV, p. 547, March 14, 1924.

### 4. *The Effect of Additional Inches of Water upon the Number of Bushels of Wheat Produced per Acre.*

“MR. McCUNE: . . . I will say though for Colorado we might be willing to fix the quantity of water but not fix the acreage. We want to give the water user an incentive to get the highest possible duty of water.

“Dr. Widtsoe has shown the following results:

30 acre-inches of water on one acre of wheat produced 48 bushels and 4,500 lbs. of straw.

30 acre-inches spread on 6 acres produced 226 bushels of wheat and 18,000 lbs. of straw.

<sup>3</sup>540 crates each. Acreage under cultivation by actual survey—12,500. Possible acreage—150,000.

30 acre-inches on one acre of beets produced 21 tons of beets.  
30 acre-inches on four acres produced 65 tons.

"We can conceive of the time when the demand for these crops will be so great as to justify such economy of water as suggested by the above experiments.

"MR. HOOVER: You are not willing to put the limitation on the acreage?"

"MR. McCUNE: No, sir, not as to acres, but to acre-feet.

"MR. HOOVER: Do you think it feasible to make a compact based on acre-feet?"

"MR. McCUNE: I think it might be done but I have not gone into that thoroughly enough to say."—Colorado River Commission, *Denver Hearing*, State Senate, Chamber, Denver, p. 32, March 31, 1922.

##### 5. *The Question of the Amount of Water Debt Which a Particular Area can Economically Support.*

"MR. HOOVER: What do you regard as the potential rights of Utah?"

"MR. ULLRICH: The right to bring such acreage under irrigation in the future as may be reclaimed under economic conditions. Anything that is possible. For instance, we may have land here at this time that would cost \$150.00 to \$300.00 per acre to irrigate, under the present conditions, and under such conditions the land might not support such an expenditure, but in the future that land may be able to support a water debt of \$150.00 per acre—that is a potential right of the State which should be maintained, and should not be abridged by any compact entered into at this time.

"MR. HOOVER: Supposing it were possible for New Mexico to develop land for \$25.00 per acre and you hold up the water—in other words, you withhold water from a State than can develop for a quarter of the money, would you consider that a potential right of the State of Utah?"

"MR. ULLRICH: That depends entirely on conditions. If New Mexico could develop land at twenty-five dollars per acre, and if water was allowed to run from the highland reaches to New Mexico, the loss may be so great that it might take four times as much water to irrigate that land as a similar tract in Utah. Another thing to be considered, you have a certain return flow from irrigating the upper land which will eventually be available to the lowland regions so that under these conditions Utah might still have a potential right as against New Mexico."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 37-38, March 27, 1922.

##### 6. *Attempts to Define "Equitable" Division.*

"WHAT EQUITABLE DIVISION IS NOT.

"It is easier to say what equitable division is not in some respects than it is to say exactly what it is. For one thing it is not a division among states according to the principle of priority. For another it is not a division according to that which Nature makes unassisted by the hand of man. If the states and the

Congress in creating the Colorado River Commission had wanted to divide waters according to the principle of priority or according to the rainfall of the drainage area within the different states or according to what quantity of water passes through Arizona or California the State legislatures and the Congress would have said so and would not have directed the Commission to ascertain what would be an "equitable division". Furthermore it is evident from *Kansas vs. Colorado* that the idea of "equitable division" excludes the idea of interstate priority or of a division strictly corresponding to natural rainfall or natural flow.

"WHAT EQUITABLE DIVISION IS.

"Equitable division is an apportionment among the different states after taking into consideration a number of variable yet important factors such as the respective needs of the different states including the quantity of land in each awaiting irrigation, quantity and value of crops per acre which can be grown in each state, amount of water contributed by each state to the total volume of the stream, opportunity which each state affords for repeated use of each acre-foot of water diverted, consideration of the fact that it is more economical to use water first along the upper reaches of the river and then later along the lower, quantity and value of crops produced by the consumptive use of each acre-foot, and extent of the non-consumptive use in each state as to every acre-foot diverted.

"There may be still other factors—no single factor is controlling but is simply relevant and to be considered along with other factors and it is for the Commission, after considering the weight which ought to be given to each of the different factors, to arrive at what it would consider a fair division or allocation of the water."—Bannister, L. Ward, *Memorandum of Remarks*, Colorado River Commission, *Denver Hearing*, State Senate Chamber, Denver, pp. 135-136, March 31, 1922.

"DR. WIDTSOE: The division that first suggests itself is naturally the assignment of a certain proportion of the river flow to each of the States interested, in proportion to the probable irrigable land. However, such a mechanical partition is wholly at variance with our best irrigation experience. First, because it practically forces each State to claim a maximum quantity of water to satisfy the popular demand, as well as to protect the interests of the State as more detailed information is secured concerning irrigation possibilities. But of much graver concern is the fact that such a method of distribution carries with it a feeling of ownership of water, irrespective of use. The riparian doctrine of water ownership was rejected by the Utah pioneers within a short time after the settlement in this valley, and has been found an improper, development-retarding, impossible doctrine, wherever irrigation is practiced. The actual or prospective use of water for economic purposes should be, in an arid country, the only foundation for ownership of water. In our day, in the face of the irrigation experience of three-quarters of a century, a percentage of quantitative division of the waters of the Colorado would be, aside from its unscientific aspect, a grievous reflection upon the possibility of interstate comity, the natural patriotism and harmonious friendliness of these sister States; and a direct affront to the coming generations who would be obliged to untangle our error.

"Since the flow of the Colorado is sufficient, if conserved, to irrigate all economically irrigable lands of the Colorado Basin, it would seem wisest and most

direct to allow each of the States to appropriate, unhindered and unrestricted, except by its own State laws, the water that it needs for the projects. I think I would like to change that word "unhindered", and substitute the words "use or make use of it". This would encourage irrigation development; and should this freedom of privilege spur the States on to friendly rivalry, the Southwest would be so much more the gainer. The acceptance of the fundamental fact of an ample supply of water for all economically possible projects would be the best guarantee for the prospective use of private capital.

"At the best, under present conditions, the building of irrigation structures will move on slowly. The most rapid acceleration conceivable under present conditions is not likely to complete the present building program of the Colorado Basin, within one or two generations. When that time comes, another commission may sit to consider the problems of that day. Meanwhile, all parts of the river would have had a long period of free and unmolested development, and the commission of the future would have better data on which to base conclusions."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, pp. 148-150, passim, March 28, 1922.

"MR. CALDWELL: . . . The principle of beneficial use is fundamental and is correct; the water should go to the people who can use and benefit by the water. There is also the question of greatest benefit to the greatest number within the basin, or a given area, which must be considered."—Colorado River Commission, *Minutes of the Thirteenth Meeting*, Bishop's Lodge, Santa Fe, p. 48, Monday, 10 A. M., Nov. 13, 1922.

"MR. COLLETT: Beneficial use is the only basis on which title should be granted and in order to secure the larger development as contemplated in the control of the flood waters of the Colorado River Basin and their maximum use for power and irrigation purposes, we must concede to the Government and to this Commission these smaller rights, and the whole must be handled and adjudicated by this one body, the individual rights to be acquired under such regulations as they may develop and prescribe so that unrestricted use in each state seems to me impossible if we are to get together on larger and more comprehensive development of the whole."—Colorado River Commission, *Salt Lake City Hearing*, State Capitol Building, Salt Lake City, p. 123, March 28, 1922.

"MR. CHASE: . . . We believe that the real scientific way of formulating the pact is to declare that priority of appropriations through the basin should prevail. If such declaration is adopted, it would perfect all legal titles to water both below and above. You in Wyoming and Colorado, who would desire to take water tomorrow to develop some project, would have a title to your water back of your project. However, we feel we are willing to go one step further than that. We realize, Mr. Secretary, that this Boulder Canyon project requires an act of Congress, and we realize to put over an act which would provide for the erection of a dam in the lower Colorado River, we must have the united support of the West. We do not want the lukewarm support of Mr. Carpenter; we do not want the lukewarm support of Mr. Emerson or the people of his state. We want their enthusiastic support. We need the enthusiastic support of the western senators and representatives in Congress, and want them to keep back of this bill. We are not going to get it unless there is a little give and take here. I

think we are ready to subscribe to this doctrine, if the Commission thinks that it is necessary that we go this far. We are ready to subscribe to the doctrine declared here yesterday by Mr. Nickerson and Mr. Rose which I understand is something like this: We are willing to declare that the erection of a dam on the lower Colorado River, at Boulder Canyon, shall create no priority of right, arising out of the erection of a dam or arising out of the future diversions from the dam, as against the Northern states, in so far as diversions in the upper river within the water-shed are concerned."—Colorado River Commission, *Phoenix Hearing*, Federal Court Rooms, and High School Auditorium, Phoenix, pp. 251-252, March 15-17, 1922.

"MR. ULLRICH: In my opinion the doctrine of appropriation of water rights shall hold so far as intra-state rights are concerned, but as to priority of interstate rights I maintain such enforcement shall not be to the detriment of the potential rights of the other States."—Colorado River Commission, *Salt Lake City Hearing*, Salt Lake City, p. 36, March 27, 1922.

APPENDIX III

WHO'S WHO IN COLORADO RIVER  
DEVELOPMENT



### APPENDIX III—EXHIBIT A

## WHO'S WHO IN COLORADO RIVER DEVELOPMENT

The data presented herewith have been compiled from the records of hearings on the subject of Colorado River development. They are intended to be helpful in suggesting the relation of certain people to the Colorado problem, without comprising an exhaustive statement of individual achievement. Each person whose name is listed testified before the Colorado River Commission, the Senate or House Committee on Irrigation and Reclamation, the Federal Power Commission, the League of the Southwest, or some other body having an interest in the improvement of this stream.

It is to be borne in mind, however, that the list does not include the names of members of House or Senate Committees on Irrigation and Reclamation. Neither does it include the names of numerous others interested in the question. As already stated, it is limited, except in a very few instances, to those who have testified before official bodies.

- Allison, J. C.—Consulting Engineer, Calexico, California. Lessee of Harry Chandler, Editor of the Los Angeles Times and Owner of Mexican land.
- Armstrong, Aikman—President, Palos Verdes Irrigation District, Blythe, California.
- Arnold, H. H.—Major, Air Service, Office of the Chief of Air Service, War Department, Washington, D. C.
- Ashurst, Henry F.—Senator from Arizona, Prescott, Arizona.
- Aten, Ira—Director of Imperial Irrigation District, El Centro, California.
- Ayers, George D.—Chairman of the Committee on Compacts and Agreements between the States, National Conference of Commissioners on Uniform State Laws, Saratoga Springs, New York, August, 1917. Ziegler Building, Spokane, Washington.
- Bacon, John L.—Mayor of San Diego.
- Badger, C. K.—Kern County, Bakersfield, California.
- Ballard, R. H.—Vice President and General Manager, Southern California Edison Company, Los Angeles.
- Bannister, L. Ward—Lawyer, Denver; Chairman, Committee of Interstate Waters, Denver Civic and Commercial Association; Water Rights Lecturer, Harvard Law School.
- Barre, H. A.—Executive engineer, Southern California Edison Company.
- Becker, J. A.—Norwood, Colorado.
- Bennion, Enos—Vernal, Utah.
- Beveridge, Charles E.—Green River, Wyoming.
- Bixby, Allen P.—Representative of the American Legion, Department of California.
- Blackburn, R. W.—Representing Coachella Valley Association, Indio, California.
- Boatright, W. L.—Attorney General of Colorado, Denver.
- Boyle, Emmet D.—State Engineer of Nevada; Governor of Nevada.
- Braunschweiger, Albert—Riverside, California.

- Bridges, G. M.—Somerton, Arizona.
- Brockman, C. W.—Director of the Imperial Irrigation District, Calexico, California.
- Brooks, W. H.—Farmer, El Centro, California.
- Brough, Thomas J.—President of Uintah County Farm Bureau, Lyman, Wyoming.
- Brown, C. S.—President of Arizona Farm Bureau, Tucson, Arizona.
- Brown, J. Stanley—County Treasurer and Director of the Imperial Irrigation District.
- Brown, W. W.—Vice-President, Eaton National Bank, Eaton, Colorado.
- Buck, Sherman O.—Representative of the Farm Bureau, Imperial Valley, California.
- Bujac, James—Assistant to the Attorney General of New Mexico, Santa Fe.
- Bull, George N.—Consulting Engineer, Denver.
- Bullock, George—Grand Junction, Colorado.
- Burdick, Frank A.—Attorney, Farmington, New Mexico.
- Caldwell, R. E.—State Engineer and Commissioner of Utah.
- Calero, Senor Don Manuel—Minister de Relaciones, Mexico.
- Call, Major Lewis W.—Judge Advocate, Chief Counsel, Federal Power Commission.
- Campbell, Thomas E.—Governor of Arizona.
- Carberry, Ray S.—Chief Engineer, Colorado River Land Company.
- Carey, Robert D.—Governor of Wyoming.
- Carpenter, Delph E.—Interstate Water Lawyer; Commissioner for Colorado.
- Carr, William J.—Lawyer; Representative of the City of Pasadena; Counsel of the Boulder Dam Association, and Director of the Boulder Dam Association; Member of the California Legislature.
- Caudry, Bert—Auditor for E. F. Sanguinetti; Representative of the Yuma Chamber of Commerce, Yuma, Arizona.
- Chandler, Harry—Editor of the Los Angeles Times; Owner of Mexican Land.
- Chase, Lucius K.—Lawyer; Representative of Los Angeles Chamber of Commerce, Los Angeles.
- Cheever, Markham—Chief Engineer of the Utah Power and Light Company, Salt Lake City.
- Childers, Charles L.—Lawyer; Attorney for the Imperial Irrigation District.
- Christensen, M. H.—Utah Construction Company, Baggs, Wyoming.
- Clark, Edward W.—Joint Commissioner and Adviser for Nevada.
- Clark, Walter H.—Consulting Engineer, New York and Los Angeles; Advocate of a high, rock-filled Boulder Canyon dam.
- Collett, R. S.—Duchesne County, Utah.
- Colter, Fred T.—Member of the Arizona legislature; Representative of Governor Hunt; Stockman, Springerville, Apache County, Arizona.
- Corthell, N. E.—Of Counsel in Wyoming v. Colorado; Lawyer, Laramie, Wyoming.
- Crawford, D. R.—Farmer, Imperial Valley, California.
- Criswell, Ralph L.—President, City Council, Los Angeles.
- Cryer, George E.—Mayor, City of Los Angeles.
- Cuff, E. W.—Representing City of Brawley, California.
- Davis, Arthur P.—Director, United States Reclamation Service, Department of the Interior, and Adviser to Federal Representative; Consulting Engineer, City of Los Angeles, etc.; Chief Engineer and General Manager of the East Bay Municipal Utility District, Oakland, California.
- Davis, H. A.—State Senator, Maricopa County, Phoenix, Arizona.

- Davis, Stephen B., Jr.—Associate Justice, Supreme Court of New Mexico; Commissioner of New Mexico; Solicitor of the Department of Commerce.
- Dern, George H.—Governor of the State of Utah, Salt Lake City.
- Deuel, J. J.—Kern County Farm Bureau, Bakersfield, California.
- Dovert, John F.—Engineer who discusses the manner in which San Diego can directly benefit by the development of the Colorado River.
- Dowd, W. J.—General Superintendent, Imperial Irrigation District.
- Durand, William F.—Professor Emeritus of Mechanical Engineering, Leland Stanford University.
- Edwards, A. A.—Fort Collins, Colorado.
- Emerson, Frank C.—State Engineer of Wyoming; Commissioner of Wyoming.
- Evans, S. C.—Mayor of Riverside, California; Executive Director of the Boulder Dam Association.
- Fall, Albert B.—Secretary of the Interior.
- Fausett, George R.—Mining Engineer, Arizona Bureau of Mines, Tucson, Arizona.
- Field, John E.—Consulting Engineer, Denver.
- Finley, S. H.—Civil Engineer, Santa Ana, California; Member of the Board of Supervisors, Orange County, California.
- Flock, E. J.—Farmer, Phoenix.
- Fly, Benjamin F.—Representative of the Chamber of Commerce, Yuma, Arizona, and of the Yuma County Water Users' Association.
- Follansbee, Robert—Engineer, United States Geological Survey, Denver.
- Forrester, Edwin E.—Farmer, El Centro, California.
- Foster, S. J.—Project Manager of the Uncompahgre Valley, Utah.
- Fowler, Frederick H.—Construction Engineer, San Francisco.
- Franklin, J. E.—President, Yuma National Bank; Representative of Yuma Mesa Landowners.
- Fredericks, Captain John D.—President, Los Angeles Chamber of Commerce; Representative in Congress.
- Frisbie, Charles G.—Consulting Engineer, 532 Stack Building, Los Angeles; Representative of the Imperial Irrigation District.
- Garrison, Lloyd—Assistant State Engineer, Salt Lake City.
- Getty, H. C.—Engineer, Montrose, Colorado.
- Girand, James B.—Applicant for license to construct Diamond Creek project under Federal Water Power Act.
- Goethals, General George—Consulting Engineer, New York City; Advocates high, rock-filled Boulder Canyon dam.
- Goodwin, T. R.—Engineer of the State Highway Commission, State of California, Winterhaven, Imperial County, California.
- Gordon, James H.—Weather Bureau, United States Department of Agriculture, Washington, D. C.
- Grimshaw, Ira L.—Senior Economic Analyst, Department of Commerce, Washington, D. C.
- Grunsky, C. E.—Construction Engineer, C. E. Grunsky Company, San Francisco; President, American Society of Civil Engineers.
- Hamele, Ottamar—Chief Counsel, United States Reclamation Service, Department of the Interior; Adviser to Federal Representative.
- Hansen, W. L.—Salt Lake City.
- Harper, S. O.—Manager of the Grand Valley Project, United States Reclamation Service.
- Harrigan, D. A.—Horticultural Expert, Imperial County, California; Residence at El Centro, California.

- Hart, R. A.—Senior Drainage Engineer, United States Department of Agriculture, Salt Lake City.
- Hartman, Dr. George A.—State Chaplain, American Legion, Department of California. Pastor of the Presbyterian Church, El Centro, California.
- Hay, John W.—Rock Springs, Wyoming.
- Heald, Elmer W.—Representing the Department of California of the American Legion, Calipatria, California.
- Heard, Dwight B.—President and Publisher of The Arizona Republican, Phoenix.
- Hereford, Frank H.—Lawyer, Tucson, Arizona.
- Hinkle, James F.—Governor of New Mexico.
- Hollingsworth, W. I.—Representing California Real Estate Dealers Association, Los Angeles.
- Hoodenpyl, George L.—City Attorney, Long Beach.
- Hoover, Herbert—Secretary of Commerce, Chairman of the Colorado River Commission and Representative of the United States Government.
- Hopkins, S. G.—Commissioner of Interstate Water Rights for Wyoming, Cheyenne.
- Horton, Harry—Lawyer; Representative of Members of the Colorado River Control Club, El Centro, California.
- Hosea, R. G.—Deputy State Engineer, Denver.
- House, L. C.—Physician and Surgeon, Health Officer, Imperial County, California.
- Hovland, Joseph T.—Representative of the Arizona High-Line Reclamation Association; Mining Engineer, 46 North Church Street, Tucson, Arizona.
- Howell, David J.—Attorney General of the State of Wyoming, Cheyenne.
- Hoyt, John C.—United States Geological Survey, Department of the Interior, Washington.
- Hughes, Charles Evans—Secretary of State.
- Hunt, George W. P.—Governor of Arizona; Vigorous Opponent of the Compact.
- Inch, S. R.—General Manager, Utah Power and Light Company, Salt Lake City.
- Ingham, C. W.—Secretary, Yuma County Water Users' Association.
- Ives, First Lieutenant J. C.—Commander of the Colorado Exploring Expedition, 1860.
- Jacobucci, J. H.—Green River, Wyoming.
- Jensen, Joseph—Salt Lake City.
- Johnson, Hiram W.—Senator, California Advocate of the Swing-Johnson bill.
- Joyce, W. H.—Member of the Farm Loan Board, Treasury Department, Washington, D. C.
- Kelly, Colonel William—Chief Engineer, Federal Power Commission; Secretary, California Debris Commission; in charge of the third California engineering district (includes flood protection project of the Sacramento River); service with the Peace Commission preparing information on the Rhine, Danube, Elbe, Oder and Niemen Rivers.
- Keyes, Victor E.—Attorney General, Denver.
- Kimball, Thomas S.—Farmer, Graham County, Arizona.
- King, John R.—National Commander of the American Legion.
- King, Wesley E.—Salt Lake City.
- King, William H.—Senator from the State of Utah.
- Knapp, Cleon T.—Bisbee, Arizona.
- Kruckman, Arnold—Secretary and Treasurer, League of the Southwest, Wright-Callender Building, 403 South Hill Street, Los Angeles.
- Lacey, Herbert V.—Cheyenne, Wyoming.
- Landis, Felix—Secretary of the San Diego Farm Bureau, San Diego, California.

- LaRue, E. C.—Hydraulic Engineer, United States Geological Survey, Pasadena.  
Mr. LaRue has been with the Geological Survey for 20 years. His first trips into the Colorado River Basin were made in 1910.
- Lee, Murray—Denver.
- Lewis, C. C.—Assistant State Water Commissioner and Adviser for Arizona.
- Lindauer, S. A.—University Club, Los Angeles.
- Lineberger, Walter F.—Congressman from the Ninth Congressional District, Long Beach, California.
- Longstreth, J. W.—Secretary, First Yuma Mesa Unit Holders Association, Yuma, Arizona.
- Lorraine, G. M.—Representing the City of Alhambra, California.
- Mabey, Charles R.—Governor of Utah.
- Maddock, Thomas—Civil Engineer, Phoenix.
- Marsh, James A.—Lawyer, Denver.
- Mathews, W. B.—Counsel for the City of Los Angeles.
- Maxwell, George H.—Executive Secretary, National Reclamation Association, Phoenix. From 1909 to 1912 Mr. Maxwell was Director of the Flood Commission, Pittsburg, and has more recently been interested in flood work in New Orleans.
- May, Charles A.—State Engineer and Adviser for New Mexico.
- McClure, W. F.—State Engineer, Department of Public Works of California; Commissioner for California.
- McCluskey, H. S.—Secretary to Governor Hunt, Arizona.
- McCune, A. J.—State Engineer and Adviser for Colorado.
- McGregor, A. G.—Engineer, Warren, Arizona.
- McIver, S. H.—Secretary and Treasurer of the Imperial Irrigation District; Resident of El Centro, California.
- McKisick, R. T.—Deputy Attorney General and Adviser for California.
- McPherrin, R. D.—Representing the Imperial Irrigation District, Imperial, California.
- Mead, Elwood—Commissioner of the Bureau of Reclamation, Department of the Interior.  
Mr. Mead testified that his connection with irrigation began in 1882 when he was appointed Professor of Irrigation Engineering in the College of Colorado. In 1907 he became Chairman of the Rivers and Water-Supply Commission of Australia, returning to the United States in 1915.
- Means, Thomas H.—Civil Engineer, San Francisco.  
Mr. Means appeared before the House Committee on Irrigation and Reclamation while in the employ of the Southern Sierras Power Company. His experience in the building of irrigation districts has been quite extensive—Happy Valley, Corcoran, Tule, Baxter, Madera, Medano, and South San Joaquin.
- Mechem, Merritt C.—Governor of New Mexico.
- Meeker, R. I.—Deputy State Engineer and Adviser for Colorado.
- Mejorada, J. Sanchez—Chief of the First Irrigation Zone, Mexicali, Lower California, Mexico.
- Merrill, Frank C.—Engineer, Fruita, Colorado.
- Merrill, O. C.—Executive Secretary, Federal Power Commission.  
Before becoming Executive Secretary of the Federal Power Commission, Mr. Merrill was Chief Engineer of the United States Forest Service.
- Michael, E. W.—President, Board of Directors of the Verde River Irrigation and Power District, Phoenix.
- Miller, John B.—President, Southern California Edison Company, Los Angeles.
- Miller, N. C.—Judge of County Court, Mesa County, Colorado.
- Mills, W. F. R.—General Manager, Board of Water Commissioners, Denver.

- Monell, Tony—County Clerk, Montrose, Colorado.
- Moynihan, Charles J.—Lawyer, Montrose, Colorado.
- Mulholland, William—Chief Engineer, Bureau of Water Works and Supply, Los Angeles.
- Mullendore, William C.—Private Secretary of Mr. Hoover, Federal Representative and Chairman of the Colorado River Commission, during the series of meetings at which the Compact was drafted. Since that time Mr. Mullendore has served with the law firm of Fredericks and Hanna, Pacific Mutual Building, Los Angeles.
- Murphy, Ralph—Citrus Grower and Hotel Operator, Phoenix.
- Nickerson, J. M.—President, Imperial Valley Irrigation District, El Centro, California.
- Norviel, W. S.—State Water Commissioner, Commissioner for Arizona.
- Olin, W. H.—Agricultural Agent, Denver and Rio Grande Railroad, Denver.
- Otis, Harrison Gray—Founder of the Los Angeles Times.
- Panter, T. A.—Electrical Engineer, Bureau of Power and Light, Los Angeles.
- Pederson, J. D.—Jackson, Wyoming.
- Peters, R. P.—Rancher, San Bernardino County, California.
- Phipps, Jr., Lawrence C.—Vice President and Treasurer of the Southern Sierras Power Company.
- Pittman, Key—Senator from Nevada.
- Porter, Rev. Horace—Student of the early history of the Colorado River, Riverside, California.
- Pound, Earl C.—President, Imperial Irrigation District.
- Preston, P. J.—Superintendent of Bureau of Reclamation, Yuma Project, Yuma, Arizona.
- Pridham, R. W.—President, Los Angeles Chamber of Commerce.
- Priest, Ray M.—Superintendent of Construction, Yuma Project, Yuma, Arizona.
- Reagan, J. W.—Chief Engineer, Los Angeles County Flood Control District, Los Angeles.
- Reid, F. A.—President, Salt River Valley Water Users' Association, Phoenix.
- Ricketts, Louis D.—Mining Engineer, Bisbee, Arizona.
- Roberts, Charles M.—Wilcox, Arizona.
- Robinson, Sam—Farmer; President of the Conservation Club of Imperial Valley (lineal descendant of the Swing-for-Congress Club), El Centro, California.
- Rogers, Platt—Denver, Colorado.
- Rose, Fred—City Manager of Operation, San Diego.
- Rose, Mark—Representative of Imperial County Farm Bureau, El Centro, California; Representative of Imperial Irrigation District, Holtville, California.
- Rump, Charles—General Manager, Red Lands Land Company, Red Lands, Colorado.
- Sabin, Fred A.—Lawyer, LaJunta, Colorado.
- Saunders, Russel—Secretary, Chamber of Commerce, Las Vegas, Nevada.
- Sayers, James H.—Representative of the Arizona High-Line Association, Phoenix.
- Scattergood, E. F.—Manager, Bureau of Power and Light, Los Angeles.
- Schmitt, F. E.—Assistant Editor, Engineering News-Record.
- Scott, Charles E.—Lawyer; Representative of the Colorado River Control Club, El Centro, California.
- Scrugham, W. G.—State Engineer for Nevada; Commissioner for Nevada; Governor of Nevada.
- Shaw, Clark—Chief Engineer, Municipal Water Department, Long Beach, California.
- Shields, John Franklin—Philadelphia.

- Shoemaker, R. W.—Electrical Engineer, Turlock and Merced Irrigation Districts, California.
- Shoup, Oliver H.—Governor of Colorado.
- Silver, Gray—Washington representative of the American Farm Bureau Federation.
- Sloan, Richard E.—Lawyer, Representative of the City of Phoenix; Legal Adviser for Arizona.
- Smith, Anson H.—Editor and Publisher of the Mohave County Miner, Kingman, Arizona.
- Smith, Professor G. E. P.—Professor of Irrigation Engineering, University of Arizona, Tucson, Arizona.
- ~~Mr. Smith was with the Berlin Iron Bridge Company of Berlin, Connecticut, for 28 or 30 years.~~
- Sonderegger, A. L.—Los Angeles.
- Souden, O. M.—Chairman, Board of Directors, United States National Bank, Los Angeles.
- Spaulding, P. W.—Evanston, Wyoming.
- Spilsbury, P. G.—President, Arizona Industrial Congress and Adviser for Arizona, Phoenix.
- Squires, Charles P.—Joint Commissioner and Adviser for Nevada; Editor of the Las Vegas Age, Las Vegas, Nevada; Secretary of the Colorado River Commission of Nevada, Las Vegas, Nevada.
- Stabler, Herman—Civil Engineer; Chief, Land Classification Branch, United States Geological Survey.
- Stern, Charles F.—Executive Vice-President, The First National Bank of Los Angeles, Pacific Southwest Trust and Savings Bank, and First Securities Company, Los Angeles.
- Stetson, Clarence C.—Executive Secretary, Colorado River Commission.
- Stetson, G. Henry—Applicant for license to construct Boulder Canyon dam under Federal Water Power Act, 1005 Land Title Building, Philadelphia.
- Stone, H. B.—City Manager, City of Glendale, California.
- Sullivan, H. D.—Deputy State Immigration Commissioner, Denver.
- Sweet, Lou D.—President, Crystal River Land Company, Denver.
- Swing, Philip D.—Representative, 11th Congressional District, California; Advocate of the Swing-Johnson bill.
- Taliaferro, T. S. Jr.—Rock Springs, Wyoming.
- Taylor, John Thomas—Vice-Chairman, Legislature Committee of the American Legion.
- Teasdale, Everett P.—Representing Las Vegas Realty Board, Las Vegas, Nevada.
- Thompson, Carl D.—Secretary, Colorado River Public Ownership League of America, Chicago.
- Tobin, J. J.—State senator, Montrose, Colorado.
- Trott, Frank P.—State Water Commissioner, Arizona; Chief Engineer of the Colorado River Survey, February, 1925.
- Ullrich, C. J.—Lawyer and Engineer, Salt Lake City.
- Vaile, J. P.—Los Angeles County Farm Bureau, Los Angeles.
- Van Norman, H. A.—Assistant Chief Engineer, Bureau of Water Works and Supply, Los Angeles.
- Wadsworth, Hiram W.—City Director, Pasadena, California; President, Colorado River Aqueduct Association.
- Walker, Dr. W. H.—Member of the Board of Directors, American Farm Bureau Federation, Washington, D. C.
- Wallace, Henry C.—Secretary of Agriculture; Member of the Federal Power Commission.

- Wallace, W. R.—Chairman, Utah Storage Commission, Salt Lake City.
- Ward, Shirley C.—Chairman of Citizens Committee of Fifteen, City of Los Angeles.
- Weber, Lane D.—First Vice-President, San Diego Chamber of Commerce; Vice-President, First Trust and Savings Bank, San Diego, California.
- Webster, Q. C.—Chairman of the County Farm Bureau, Imperial County, California, Brawley, California.
- Weeks, John W.—Secretary of War; Chairman of the Federal Power Commission.
- Wells, Philip P.—Deputy Attorney General, Commonwealth of Pennsylvania.
- West, A. B.—President, the Southern Sierras Power Company, the Interstate Telegraph Company, the Imperial Ice Development Company, the Silver Lake Power and Irrigation Company, the Sierras Construction Company; Vice-President, the Nevada-California Power Company, the Hillside Water Company, the Cain Irrigation Company, and the Desert Water, Oil and Irrigation Company.
- Weymouth, Frank E.—Consulting Engineer, City of Los Angeles; President, Brock and Weymouth Engineering Corporation, Philadelphia; Chief Engineer, United States Reclamation Service, Denver.
- Whistler, John T.—Engineer, United States Reclamation Service.
- White, Samuel—Legal Adviser to the Governor of Arizona, Phoenix.
- Whyte, J. H.—Editor of the Arizona Gazette, Phoenix.
- Wickham, Loyd J.—Assistant Cashier, Citizens National Bank, Los Angeles.
- Widtsoe, Dr. John A.—Adviser for Utah; President, Utah Agricultural College.
- Wilde, R. W.—Lawyer, Kingman, Arizona.
- Williams, Robert H.—Civil Engineer and Lawyer, Phoenix.
- Wilson, Bingham C.—President of the Wilson Farming Tool Syndicate, Salina, California.
- Wisener, William—Member of Arizona Legislature; President of Yuma County Water Users' Association.
- Work, Hubert—Secretary of the Interior; Member of the Federal Power Commission.
- Yager, Thomas C.—Lawyer; Representative of Coachella Valley County Water District, Coachella, California.

APPENDIX IV  
MAPS AND PROFILE





APPENDIX IV---EXHIBIT B  
 MAP OF COLORADO RIVER BASIN  
 1924



APPENDIX IV—EXHIBIT C  
MAP OF COLORADO RIVER DELTA REGION









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"Department of Commerce  
Office of the Secretary  
Washington.

October 16, 1924.

"Mr. R. L. Olson,  
Cambridge, Mass.

"Dear Sir:

"The minutes of the various meetings of the Colorado River Commission have not been completely edited or arranged; but they are all of them available here and you may have access to them at any time that you desire.

Very truly yours,

(Signed) S. B. Davis,  
Acting Secretary of Commerce."

"Federal Power Commission  
Washington.

October 21, 1924.

"Mr. R. L. Olson,  
Cambridge, Mass.

"Dear Sir:

"I am in receipt of your letter of October 10 making certain inquiries regarding the records of the meetings of the Colorado River Commission. I am not aware of any special study which has been made of the minutes of the meetings of this Commission. All of these records are on file in the Department of Commerce, and I am informed that they will be glad to make them accessible to you in the event you should come to Washington. Mr. Paul S. Clapp, who has charge of this work in the office of the Secretary of Commerce, states that he will be pleased to furnish you with any information which you may desire in connection with this work.

Very truly yours,

(Signed) O. C. Merrill,  
Executive Secretary."

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