Development: The Systematic Construction of the Structural Deficit

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40th Annual GWC Summer Conference

University of Colorado School of Law

Thursday, June 6th, 2019

Western Resource Advocates

- Conservation non-profit with headquarters in Boulder, CO
- We work across 7 states in the Intermountain West
- It's our 30th Anniversary! We've been protecting the West's land, air, and water since 1989

Overview

- Research questions
- Understanding the planning horizon
- Important assumptions in the Law of the River
- Conclusion
- Further questions

Questions:

- How did the Colorado River become over-apportioned, leading to outflows greater than inflows to the system's main reservoir storage?

- Specifically, how was the structural deficit systematically constructed?

ABSTRACT OF SECRETARY HOOVER'S STATEMENT
ON THE COLORADO RIVER BEFORE THE HOUSE
COMMITTEE ON IRRIGATION AND RECLAMATION
MARCH 3, 1926.

views. I feel that this opposition so far as water rights are concerned arise out of a miscalculation as to the resources of the Colorado River. Certainly for all practical development that could be undertaken within the next 75 years there is more water than can be used by the whole of the 7 states. The Colorado River compact allots approximately 60 per cent of the water. 40 per cent of it as provided in the compact can be reallocated at the end of 40 years. There is ample provision therefore for readjustment in the respective rights of the different states based upon the merits at that time.

It seems to me almost fantastical to be fighting the shadows of what may happen under these circumstances 75 years hence. Suppose we had endeavored in 1850 to determine and settle for today what would have been the best solution of any of a hundred problems. For instance, Faraday's great discovery in electrical induction, from which the whole electrical development of the world has sprung - who could have foreseen its effect on the best solution.

I am one of those who have a great deal of confidence that all anticipations over physical questions inevitably bend themselves to the forces of life and that if we can provide for equity for the next 40 to 75 years we can trust to the generation after the next to be as intelligent as we are today. They will settle it in the light of the forces of their day.

Questions:

- How did the Colorado River become over-apportioned, leading to outflows greater than inflows to the system's main reservoir storage?

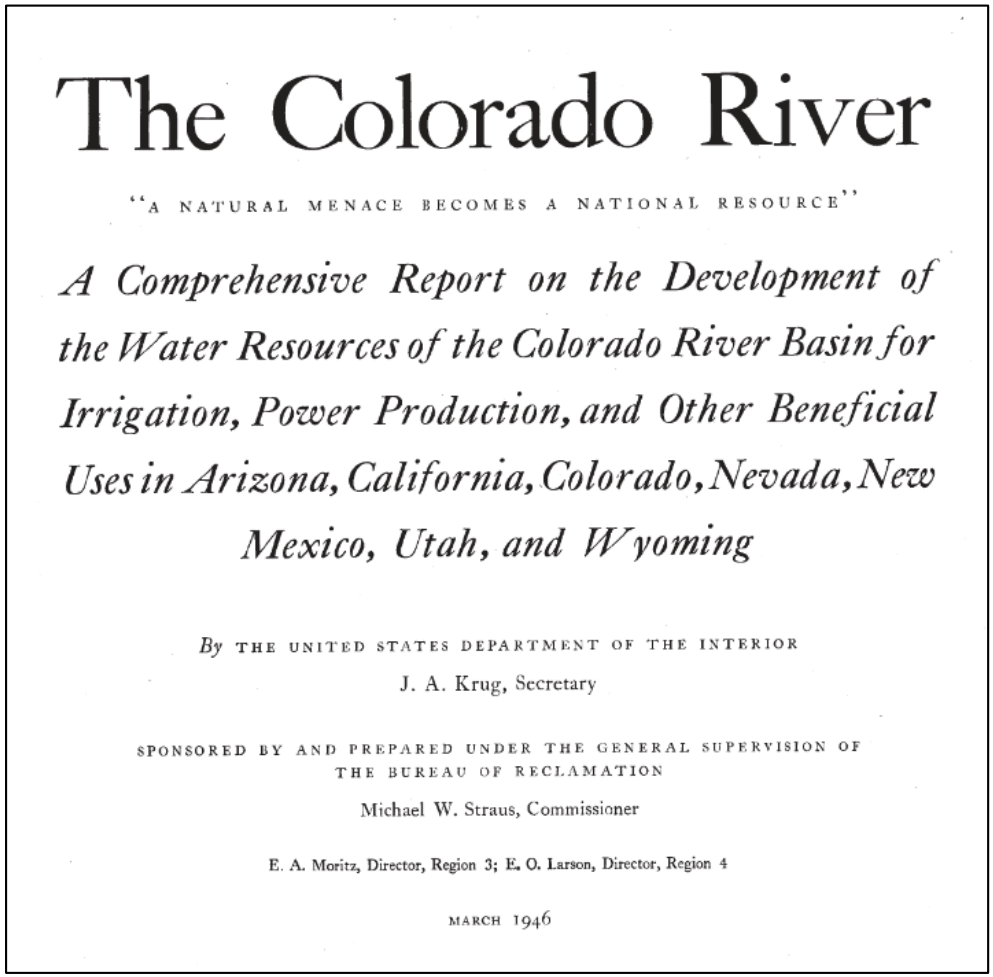
- Specifically, how was the structural deficit systematically constructed?

Potential answers:

- Differences in the assumed planning horizon.

1946 – Bureau of Reclamation report to Congress regarding new projects in the Colorado

"There's not enough water available in the system to permit construction of all those facilities"



The Colorado River

"A NATURAL MENACE BECOMES A NATIONAL RESOURCE"

A Comprehensive Report on the Development of the Water Resources of the Colorado River Basin for Irrigation, Power Production, and Other Beneficial Uses in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming

By THE UNITED STATES DEPARTMENT OF THE INTERIOR

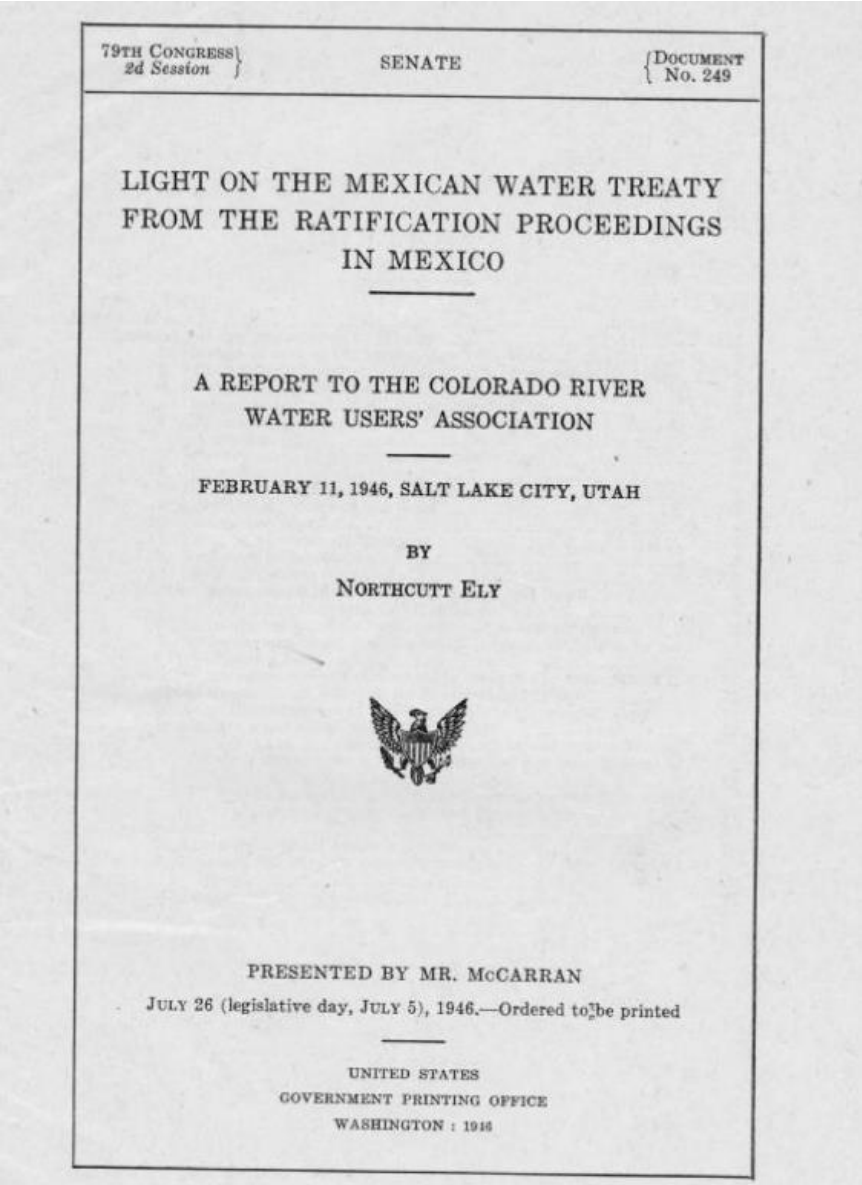
J. A. Krug, Secretary

SPONSORED BY AND PREPARED UNDER THE GENERAL SUPERVISION OF THE BUREAU OF RECLAMATION

Michael W. Straus, Commissioner

E. A. Moritz, Director, Region 3; E. O. Larson, Director, Region 4

MARCH 1946



79TH CONGRESS, 2d Session } SENATE { DOCUMENT No. 249

LIGHT ON THE MEXICAN WATER TREATY FROM THE RATIFICATION PROCEEDINGS IN MEXICO

A REPORT TO THE COLORADO RIVER WATER USERS' ASSOCIATION

FEBRUARY 11, 1946, SALT LAKE CITY, UTAH

BY

NORTHCUTT ELY

PRESENTED BY MR. McCARRAN

JULY 26 (legislative day, JULY 5), 1946.—Ordered to be printed

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1946

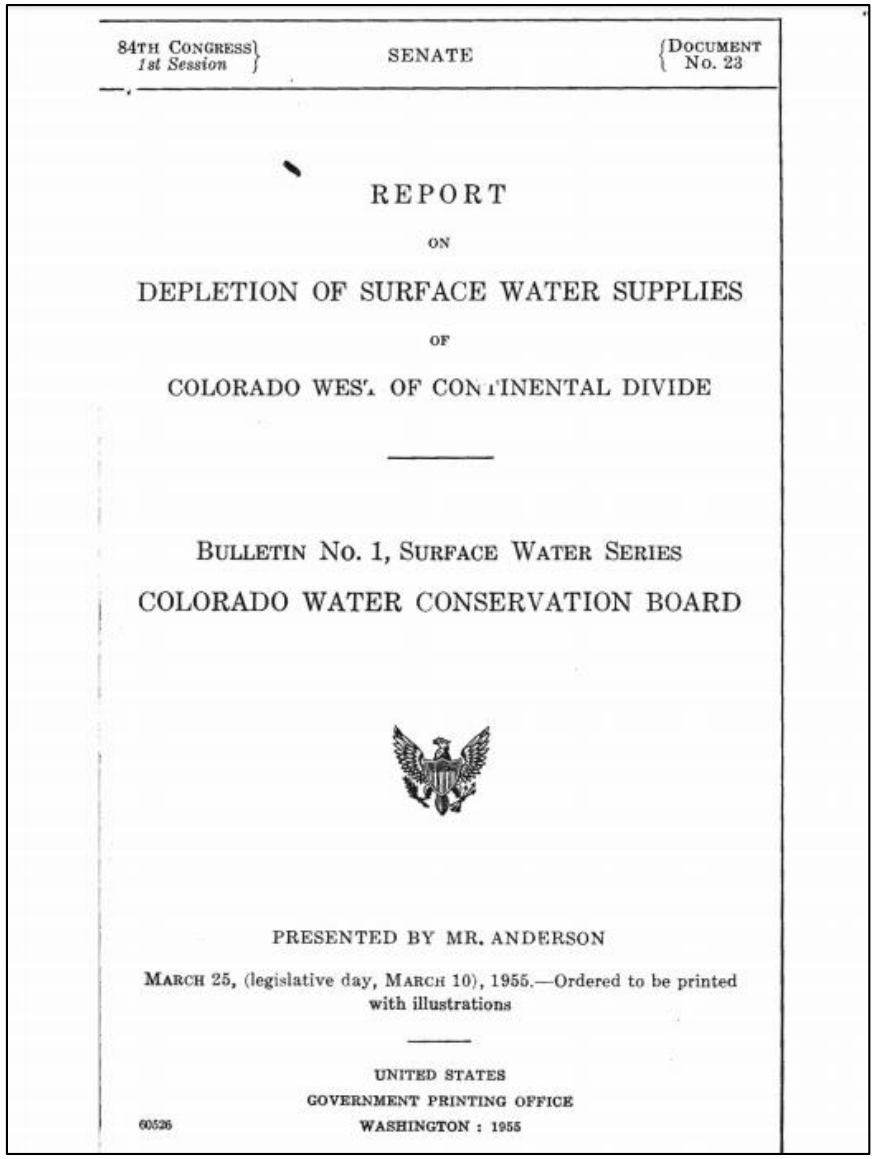
1946 – Northcutt Ely wrote a report for the Colorado River Water Users Association about the recent ratification of the 1944 Treaty with Mexico

- If Arizona were to receive its full 2.8 MAF allocation, then California would only be able to use 3.6 MAF.
- *"No sound planning can be done for new projects until the water budget is balanced again in some way"* (Ely, 1946, p. 20).

1955 – Consultant report for the Colorado Water Conservation Board used updated streamflow records to determine the viability of the Upper Basin's apportionment

- *"All of the 7,500,000 acre-feet of water per annum apportioned to the Upper Basin by the Colorado River compact may not actually be available for use because of the requirement that 75 million acre-feet be delivered at Lee Ferry during each consecutive period."*
  (Colorado Water Conservation Board, 1955, p. 29)

- The report concluded that the Upper Basin may be limited to 6.2 MAF if it were to comply with the Colorado River Compact.



84TH CONGRESS, 1st Session } SENATE { DOCUMENT No. 23

REPORT

ON

DEPLETION OF SURFACE WATER SUPPLIES

OF

COLORADO WEST OF CONTINENTAL DIVIDE

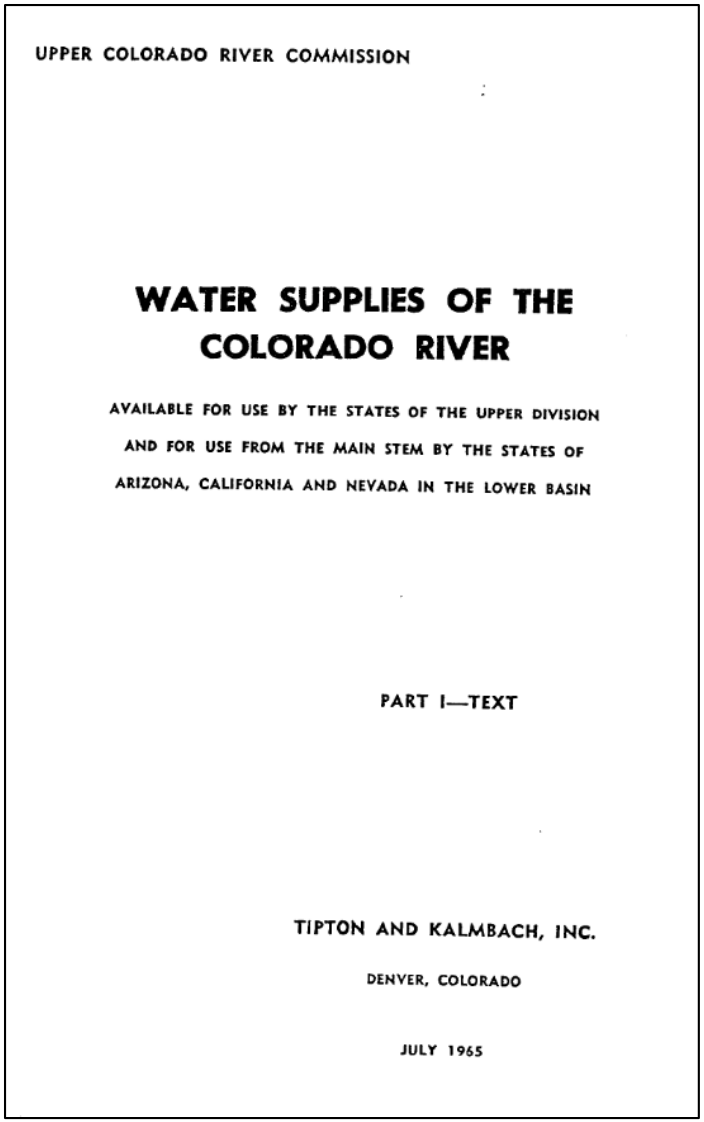
BULLETIN No. 1, SURFACE WATER SERIES

COLORADO WATER CONSERVATION BOARD

PRESENTED BY MR. ANDERSON

MARCH 25, (legislative day, MARCH 10), 1955.—Ordered to be printed with illustrations

UNITED STATES
GOVERNMENT PRINTING OFFICE
60526 WASHINGTON : 1955


UPPER COLORADO RIVER COMMISSION

WATER SUPPLIES OF THE COLORADO RIVER

AVAILABLE FOR USE BY THE STATES OF THE UPPER DIVISION AND FOR USE FROM THE MAIN STEM BY THE STATES OF ARIZONA, CALIFORNIA AND NEVADA IN THE LOWER BASIN

PART I—TEXT

TIPTON AND KALMBACH, INC.

DENVER, COLORADO

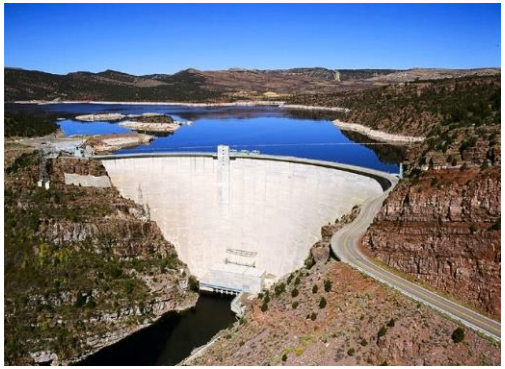
JULY 1965

1965 – Upper Colorado River Commission engineering studies

- *"…it is assumed that the total net beneficial consumptive use in the States of the upper division cannot be more than 5.6 maf per year, and might not be more than 4.8 maf per year…*
- *…it would appear that it might be unwise at this time to authorize a new project for use of substantial amounts of water from the main stem of the Colorado River in the Lower Basin when a study of stream-flow records discloses that the requirements for such a project might cause the depletion of Lake Mead below the level where it could generate power….*
- *…the authorization of [Lower Basin] projects… would be unwise at this time unless at the same time a project, or projects, for the importation of substantial amounts of water from sources of surplus are authorized."*

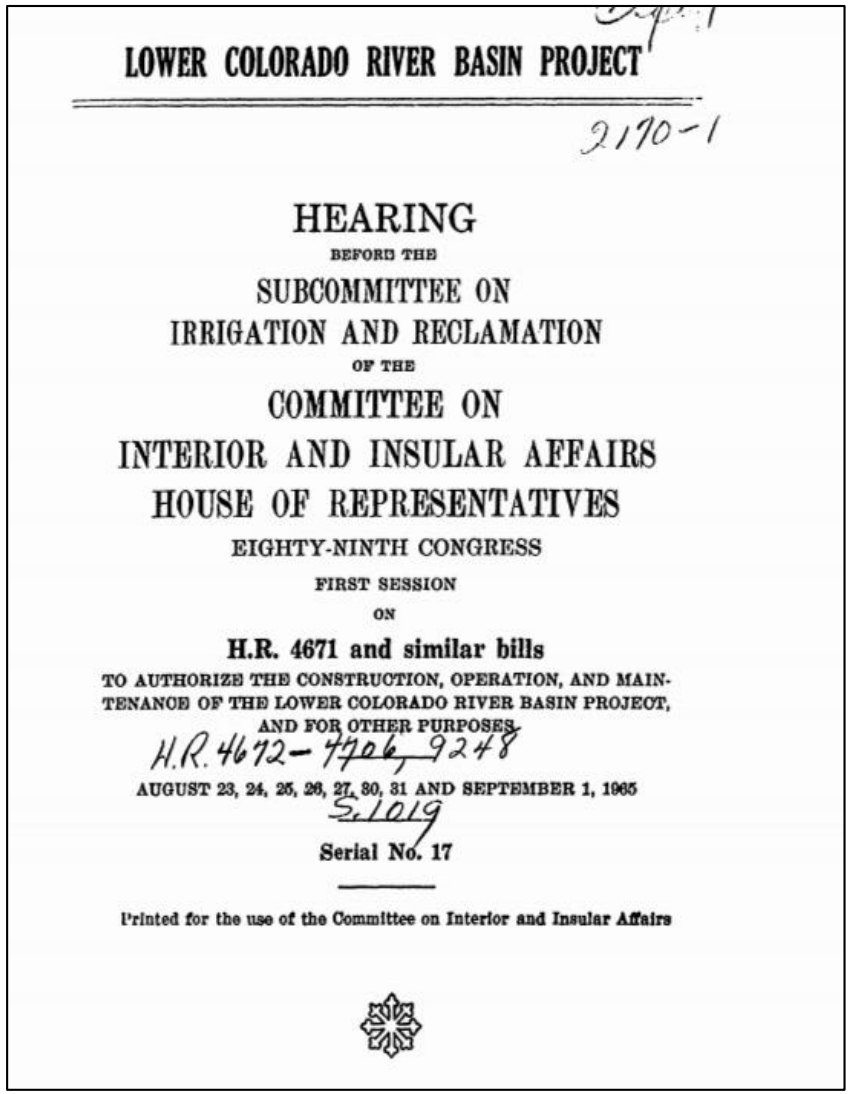
(Tipton and Kalmbach, 1965)

1968 – At this point, many of the large projects had been built



- There was significant debate about authorizing the Central Arizona Project (and a few other projects), and whether there was enough water.

- At the heart of this debate was how much water the CAP could come to rely on in the long-term as both the Lower and Upper Basins moved towards utilizing their full allocations.



LOWER COLORADO RIVER BASIN PROJECT

2170-1

HEARING

BEFORE THE

SUBCOMMITTEE ON
IRRIGATION AND RECLAMATION

OF THE

COMMITTEE ON
INTERIOR AND INSULAR AFFAIRS
HOUSE OF REPRESENTATIVES

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 4671 and similar bills

TO AUTHORIZE THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE LOWER COLORADO RIVER BASIN PROJECT, AND FOR OTHER PURPOSES

H.R. 4672 - 4706, 9248

AUGUST 23, 24, 25, 26, 27, 30, 31 AND SEPTEMBER 1, 1965

S.1019

Serial No. 17

Printed for the use of the Committee on Interior and Insular Affairs

"Mr. Chairman, we estimate that through the year 1990 the central Arizona Unit would have a full divertible water supply from the Colorado River of 1,200,000 acre-feet per year. After that year, as the upper basin depletions increase, the water supply from the Colorado River available to the lower basin States will decrease accordingly."

-Floyd Dominy, Bureau of Reclamation Commissioner, 1965

Future CAP water supply:

- 1990 – 1,200,000 acre-feet
- 2000 – 900,000 acre-feet
- 2030 – 580,000 acre-feet

1202

Public Law 90-537
90th Congress, S. 1004
September 30, 1968

An Act

To authorize the construction, operation, and maintenance of the Colorado River Basin project, and for other purposes.

Be it enacted by the Senate and House of Representative of the United States of America in Congress assembled,

TITLE 1 – COLORADO RIVER BASIN PROJECT; OBJECTIVES

Colorado River Basin Project Act.

SEC. 101. That this Act may be cited as the "Colorado River Basin Project Act".

82 STAT. 885
82 STAT. 886

SEC. 102 (a) It is the object of this Act to provide a program for the further comprehensive development of the water resources of the Colorado River Basin and for the provision of additional and adequate water supplies for use in the upper as well as in the lower Colorado River Basin. This program is declared to be for the purposes, among others, of regulating the flow of the Colorado River; controlling floods; improving navigation; providing for the storage and delivery of the waters of the Colorado River for reclamation of lands, including supplemental water supplies and for municipal industrial and other

What were the proponent's arguments?

- Augmentation.

- Only once new water was brought into the Colorado River Basin could each of the states have a long-term, reliable supply.

Colorado River Basin Project Act of 1968

"For ***a period of ten years*** from the date of this Act, the ***Secretary shall not undertake reconnaissance studies of any plan for the importation of water into the Colorado River Basin*** from any other natural river drainage basin lying outside the States of Arizona, California, Colorado, New Mexico, and those portions of Nevada, Utah, and Wyoming which are in the natural drainage basin of the Colorado River."

- Colorado River Basin Project Act of 1968, Title II, Section 201

Senator Henry “Scoop” Jackson, D-Wash., speaking to Representative Mo Udall, D-Ariz., regarding augmentation in the Colorado River Basin:

“Mo, you’re not allowed to dream about it, you’re not to think about it. The only thing you’re allowed to do is forget about it.”

Congressional testimony

Congressman Harold Johnson, D-Cali., was questioning Secretary Udall and Dominy about whether augmentation would have an impact on California's Colorado River apportionment:

"Mr. Johnson: *The legislation does not entail, if we were to bring in a source of saline water for an additional source of water to northern California, that this would have anything to do with the reduction of the amount of water from the Colorado into 4.4 million acre-feet. Is that correct?*

Secretary Udall: *The gentleman is correct in that assumption*.

Mr. Johnson: *As we look to the Pacific Northwest and other areas of the United States for water to bring into the Colorado River watershed this would build up* ***the additional 2.5 million acre-feet which you figure is absolutely necessary****, and those studies are provided in the legislation*.

Secretary Udall: *That is correct.*"

(Subcommittee on Irrigation and Reclamation, 1965, p. 131).

Congressional testimony

1968 – Congressman Mo Udall, D-Ariz., pressed Dominy on whether or not the CAP had a favorable benefit-cost ratio:

"Let's assume there is no augmentation in the river—not a drop. ***I think this is a very violent assumption, because I am as sure as anything in this life that there will be augmentation***" (Colorado River Basin Project – Part II, 1968, p. 837).

1966 – The House was considering H.R. 4671, which would have authorized CAP and was ultimately the predecessor to the Colorado River Basin Project Act:

> "Secretary Udall and Commissioner of Reclamation Floyd Dominy appeared in support of H.R. 4671. ***Both agreed that augmentation of the Colorado River water supply would be necessary if all long-term needs of the Basin were to be met***, and Secretary Udall indicated that such augmentation could be achieved by desalting sea water or by importing fresh water from northern California or from the Columbia River below Bonneville Dam" (Johnson, 1977, p. 186).

Colorado River Basin Project Act of 1968

"Accordingly, the States of the Upper Division and the States of the Lower Division ***shall be relieved from all obligations which may have been imposed upon them by article III(c)*** of the Colorado River Compact so long as the Secretary shall determine and proclaim that ***means are available and in operation which augment the water supply of the Colorado River system in such a quantity as to satisfy the requirements of the Mexican Water Treaty***…

…Provided, that the satisfaction of the requirements of the Mexican Water Treaty shall be from the water of the Colorado River pursuant to the treaties, laws, and compacts presently relating thereto, until such time ***as a feasible plan showing the economical means of augmenting the water supply available*** in the Colorado River below Lee Ferry by ***two and one-half million acre-feet*** shall be authorized by the Congress and is in operation as provided in this Act."

-Colorado River Basin Project Act of 1968, Title II, Section 202

Questions:

- How did the Colorado River become over-apportioned, leading to outflows greater than inflows to the system's main reservoir storage?

- Specifically, how was the structural deficit systematically constructed?

Potential answers:

- Differences in the assumed planning horizon.

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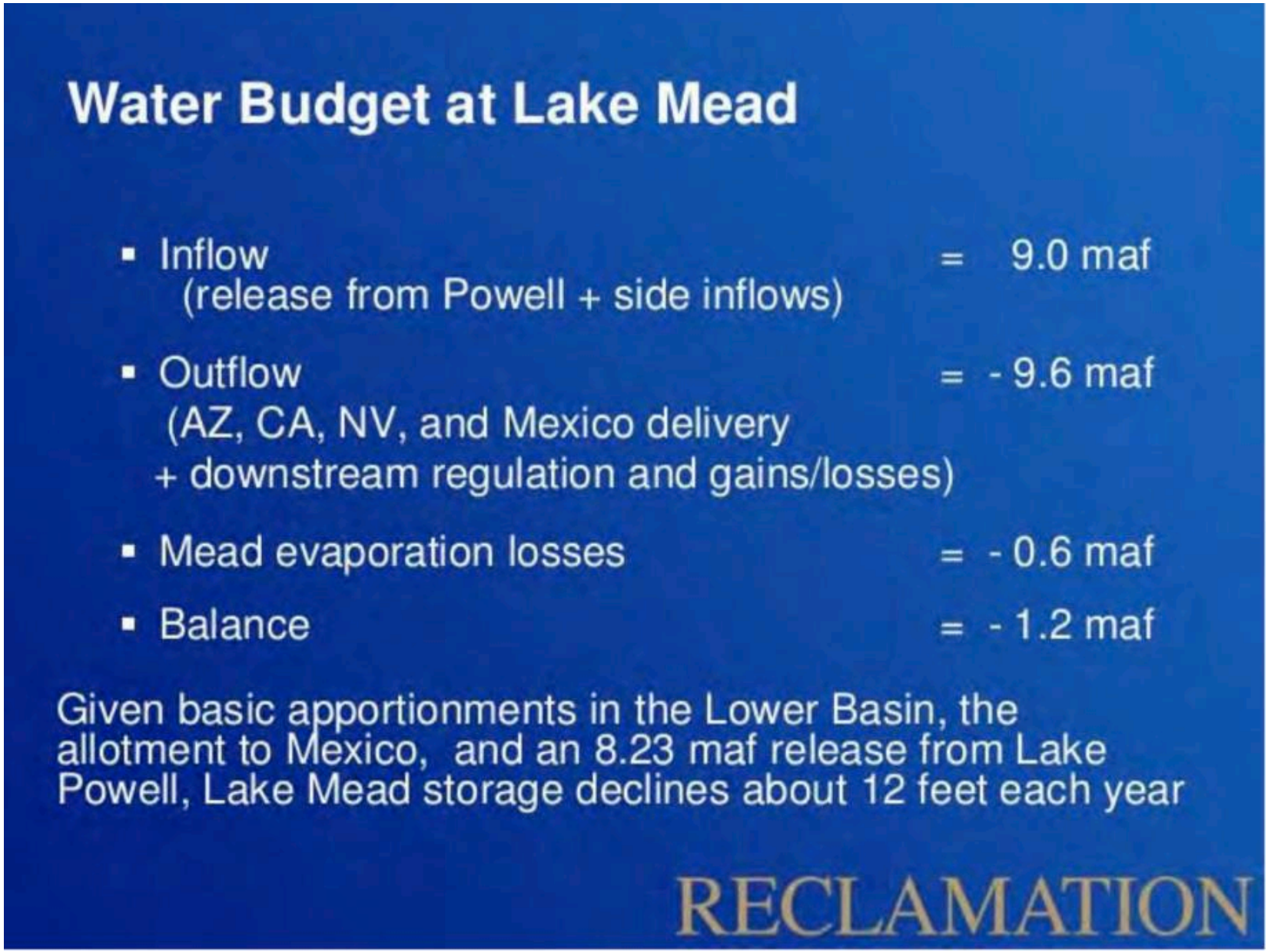
Potential answers:

- Differences in the assumed planning horizon.

- A primary assumption (and justification) in developing the Law of the River has not been realized, and most likely will never be.

The structural deficit



Conclusion

- The intentions of the negotiators were such that future generations could reallocate the Colorado River, as Secretary Hoover put it, “in the light of the forces of their day”.

- Many of the negotiators and decision-makers assumed that long-term reliability of the system required augmentation from outside the hydrologic basin.

Returning to Fleck's questions…

- How will climate change impacts be distributed?
- What about current legal ambiguities and uncertainties?
- Ultimately, how do we fix the structural deficit?

Thank you!

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