Sharing Water:
A Necessity for Peace in a Changing World

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Colorado Supreme Court
United States of America

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Colorado Supreme Court

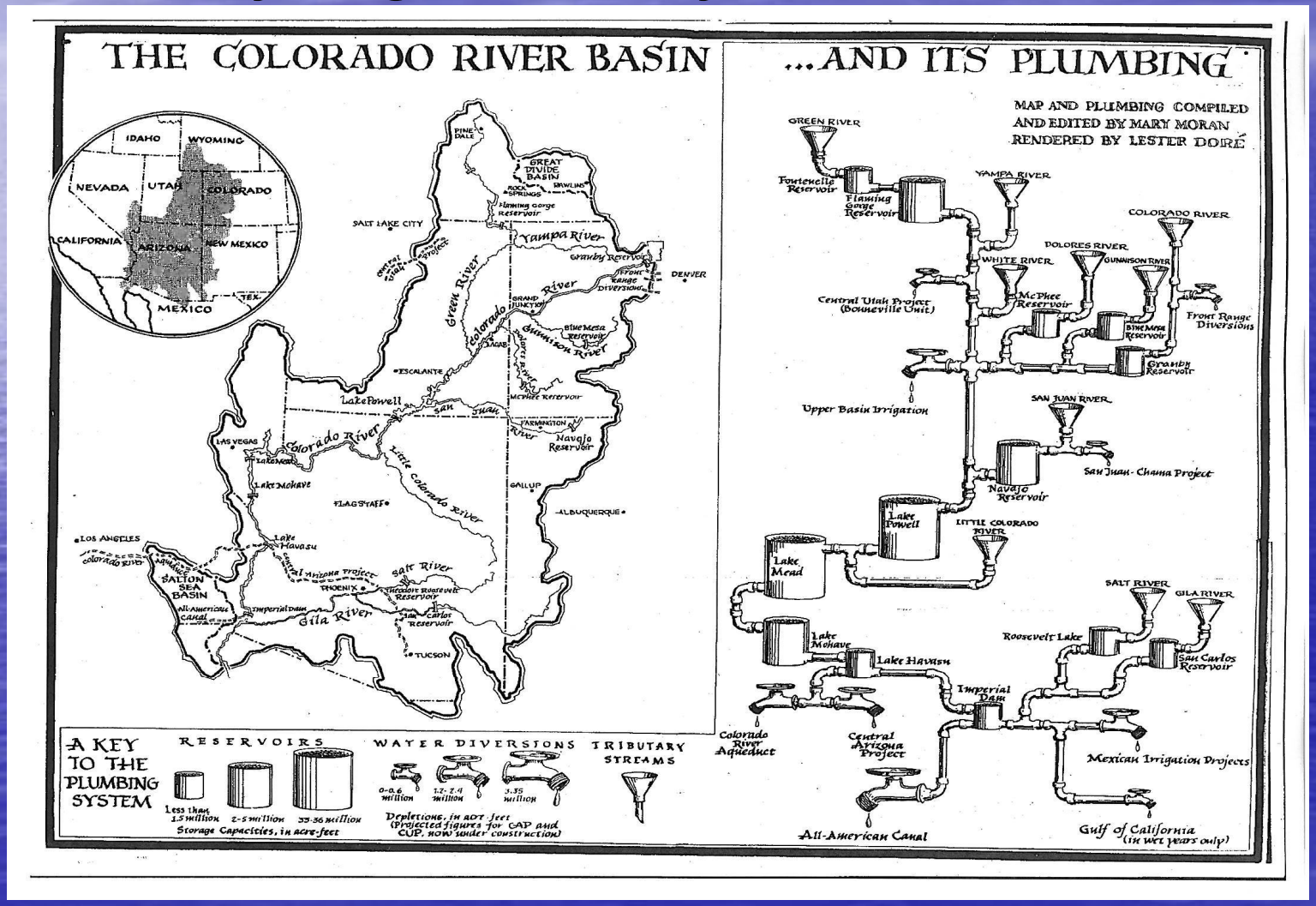
Water Allocation in Western U.S.

- Prior Appropriation: “first in time, first in right”
  - Beneficial use
- 1922 Colorado River Compact
  - Available at http://www.usbr.gov/lc/region/g1000/pdfiles/crcompct.pdf
- 1948 Upper Colorado River Basin Compact
  - Available at http://www.usbr.gov/lc/region/pao/pdfiles/ucbsnact.pdf
- 2007 Colorado River Interim Guidelines for Lower Basin Shortages
  - Available at http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf

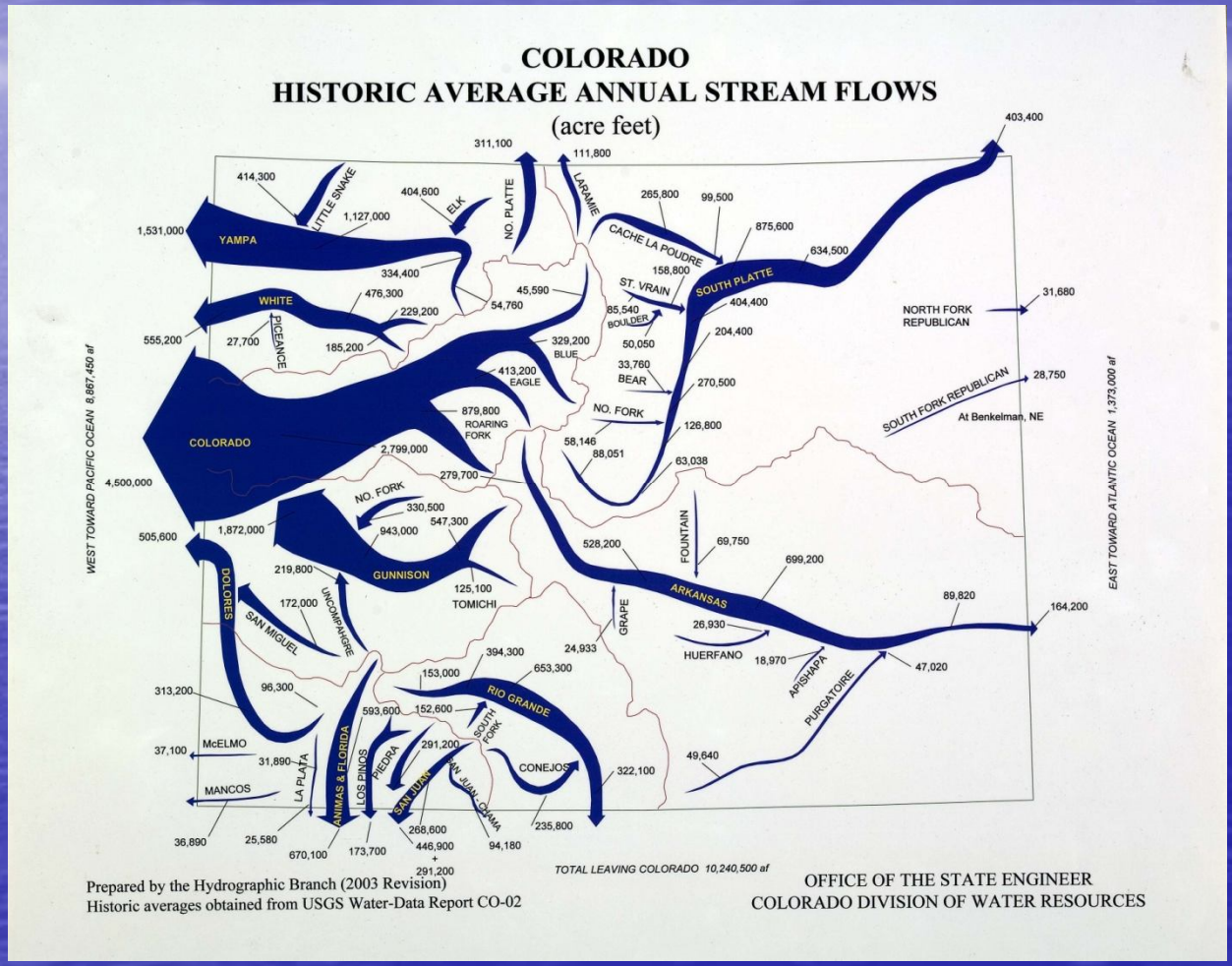
Colorado River Basin States

Colorado River Basin "Plumbing"

as seen by High Country News



Colorado Average Streamflow



1922 Colorado River Compact

- Average Colorado River production from 1899-1920 was 16,400,000 acre-feet
  - Lower basin was more developed and wanted yearly guarantee at Lee Ferry, averaged out to 7.5 million acre-feet
  - Upper basin was less developed and lacked storage capability, which led to 1948 Upper Colorado River Basin Compact
- Yearly Allocation: Upper Basin – 7.5 million acre-feet; Lower Basin – 7.5 million acre-feet; 1.5 million acre-feet to Mexico under the 1906 Rio Grande Treaty and the 1944 Colorado River Treaty
- Seven states: Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming

1948 Upper Colorado River Basin Compact

- Upper Basin states method of allocating shortages
  - Based on percentage of available water, not acre-feet, because percentages work in times of surplus and shortage.
  - Formed commission to resolve disagreements among Upper Basin states
  - Upper Basin States: Colorado, New Mexico, Utah, Wyoming

2007 Interim Guidelines

- Commits all seven states to consultation and negotiation before resorting to litigation
- Hailed the most important agreement among seven Colorado River Basin states since 1922 Colorado River Compact
- Highlights
  - Water levels in Lake Mead to determine when there is a shortage condition
  - Rules established for shortages – who will take reduction and when
  - Operational rules for Lake Mead and Lake Powell that allow the two reservoirs to rise and fall in tandem, thereby better sharing risk of drought
  - Guidelines for surplus
  - Implementation of mechanisms to encourage augmentation/ conservation of water in Lake Mead

Climate Change Effects

- Impact recognized by government in 2008 report issued by US Dept. of Agriculture
  - Reduction of up to 25% of water in some areas
  - Available at http://www.climatescience.gov/Library/sap/sap4-3/final-report/default.htm
- 2006 California Climate Change Center Report estimates mean temperature rise of 3-10 degrees leading to increased water demands
  - Decline in snowpack runoff over time, resulting in reduction of usable CA water up to 25%
  - Available at http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF
- 2008 California Climate Change Center Report indicates that irrigation in Central Valley is cooling region, but amount of water available for irrigation is leveling off, leading to future concern of accelerated warming
  - Available at http://www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF

Shortages

- In Colorado, junior water right holders subject to call by downstream senior holder, potentially losing right to any water
- 1948 Compact apportions shortage to each party-state based on percentage, not fixed amount
- Through shortage, innovative conservation themes emerge

Conservation Efforts

- Pricing increases based on usage
- Restrictions on outdoor watering
- Instream flow rights
- Policy of conservation in conflict with Western United States beneficial use doctrine
  - If water is not beneficially used, water right may be lost

Legislative Efforts to Address Shortages

- California's Senate Bill 1
  - Incentivized conservation
  - Created target conservation goals with built-in flexibility to customize plan to suit community's needs
- Other California legislation
  - Water pricing structure to accommodate irrigation and conservation efforts
- Linking water usage to land use planning for municipality growth projections

Linking water and land use policies

- Continuing unlimited growth accommodation
- Capping growth
- Shifting the burden of supply acquisition to local governments and developers
- Adopting aggressive, technological, and managerial water conservation initiatives such as information provision, xeroscaping requirements, marginal cost pricing, desalinization and the use of grey water
- Constraining growth to match available and projected supplies

A. Dan Tarlock, How Well Can Water Law Adapt to the Potential Stresses of Global Climate Change?, 14 U. Den. Water L. Rev. (forthcoming).

Colorado's common law

- Common law doctrine (pre-Pagosa)
  - Municipalities can acquire water rights to plan for future growth without putting water to actual beneficial use; speculative
- Pagosa Area Springs v. Trout Unlimited, 219 P.3d 774 (Colo. 2009)
  - Municipal planning subject to anti-speculation doctrine
    - Reasonable planning period
    - Population projections
    - Amount of water reasonably necessary to serve reasonably anticipated needs during planning period

Legislating development

- Arizona's Groundwater Management Act
  - Duty for new developments in groundwater basins to establish a "sufficient supply of water which will be physically available to satisfy the applicant's 100-year projected water demand"
- California
  - Water supply statute only applies to developments over 500 units and certain industrial facilities
  - 20 year projection
- Colorado
  - Approval of new residential developments conditioned on developer securing adequate water supply

Principles of a Good Water Policy

- Reflect the customs & values of community
- Public ownership of surface and groundwater
- Safe, reliable, affordable drinking water
- Indigenous communities have water rights
- Sustain ecosystem
- Agreement, negotiated and honored, among watershed nations
- Allocation serves myriad beneficial uses
- Historical water uses identified
- Natural interaction of tributary aquifers and streams is respected
- Water use allocated by priority
- Water quality standards in place
- Conservation and efficiency promoted
- New allocations and changes allowed only if prior rights are not injured
- Program for restoring damaged aquatic environment
- Cooperative forums for resolving water use conflicts
- Available financing mechanisms
- Quality and quantity data maintained and available for public
- Drought and flood planning
- Public water education

UN Convention on the Law of Non-Navigational Uses of International Watercourses

- Intended to codify customary international water law, without affecting existing agreements
- General principles include:
  - Equitable and reasonable utilization of watercourses
  - Duty to cooperate with other riparian users in the protection and development of watercourses
  - Obligation to not harm other watercourse states
  - Exchange information
  - Mandatory notification and consultation procedure if planned improvement has significant adverse impact on other watercourse states
  - Section of Convention to promote protection and preservation of ecosystems, including reduction of pollution
  - Mitigate damages caused naturally or through human conduct
  - Dispute resolution including negotiation, mediation, arbitration, etc.
- Available at http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

Two Primary Water Sharing Approaches

- Collaborative Needs-Based Approach
  - Allocation determined by cooperative assessment of the minimum requirements of each riparian state. Gabriel Eckstein, Water Scarcity, Conflict, and Security in a Climate Change World: Challenges and Opportunities for International Law and Policy, 27 Wisc. Int'l L.J. 436
  - Allocation determined through basin-wide commitment to a shared set of priorities, principles and goals. Green Cross International, National Sovereignty and International Watercourses 17 (March 2000).
- Property Rights model
  - Cooperative, equitable apportionment regime will not promote climate change adaptation absent firm property rights to promote certainty and incentives to conserve resources. A. Dan Tarlock, How Well Can International Water Allocation Regimes Adapt to Global Climate Change, 15 J. Land Use & Envtl. L. 423 (2000).

International Adaptation Issues

- Professor A. Dan Tarlock of the Chicago-Kent College of Law posits that: “International water management and allocation regimes will face more difficult adaptation problems than domestic water law regimes for three reasons.”
  - Less developed property rights
  - Less flexibility than domestic regimes
  - Conservation and ecosystem protection remains subordinate to multi-purpose water development

Water Sharing Agreements

- Recognize preexisting uses
- Baseline for environment
- Hierarchy of uses
- Regulated market
- Consideration of customs and values
- Collaboration
- Transboundary, watershed wide decision making authority
- Transparency
- Alternative Dispute Resolution
- Data Sharing
- Public Education

Potential Solution

- Apportionment by percentage
  - Entitlement to particular quantity of water is problematic in times of shortage
  - Instead, base entire water allocation on particular percentage of any given flow
    - Incentivizes rights holders to conserve water during drought and store in time of surplus
    - Flexible approach to account for decreasing supplies
    - Protection of aquatic ecosystems through instream flow dedications
    - Based on property rights, but compatible with collaborative ideals

Conclusion

Greg and Bobbie Hobbs rafting on the Colorado River in the Grand Canyon