

**Tom Cech
Director**

**One World One Water (OWOW) Center for
Urban Water Education and Stewardship**

**Metropolitan State University of Denver
Denver, Colorado, U.S.**

What Are We Going to Talk About Today:

1. One World One Water (OWOW) Center for Urban Water Education and Stewardship
2. Water Studies Minor at MSU Denver
3. Water History of Ancient Cultures
4. Water History of Colorado
5. Future Water Supply Issues in Colorado

Fort Collins, Colorado



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Denver, Colorado





Outdoor Colorado



Metropolitan State University of Denver



**40,000 students on
Auraria campus**

**157 acre campus
at Speer Blvd.**

Established in 1965

One World One Water (OWOW) Center for Urban Water Education and Stewardship



One World
Wednesday, May 2, 2012
One Water

Dedication of the monumental bronze sculpture
One World, One Water
an artistic expression of the human connection to water
created by noted artist Rik Sargent—a recent private
donation to Metro State

Reception from 4-5:30 p.m.
Program and dedication at 4:30 p.m.

Main entrance • Student Success Building
890 Auraria Parkway, Auraria Campus

RSVP to www.mscd.edu/event/dedication
to dillingb@mscd.edu or call 303-556-2999



METROPOLITAN STATE
COLLEGE of DENVER
We Educate Colorado



Three goals:

- * Establish a Water Studies minor for all students and departments at MSU Denver;
- * Develop “Water Stewards” on and beyond the Auraria Campus; and
- * Provide experiential opportunities for students

MSU Denver

Water Studies Minor

Water Essentials

Introduction to Water Law and Administration

Water Conflict Resolution

Multicultural Water Issues

Electives

Internship/Capstone Project

18 credit hours

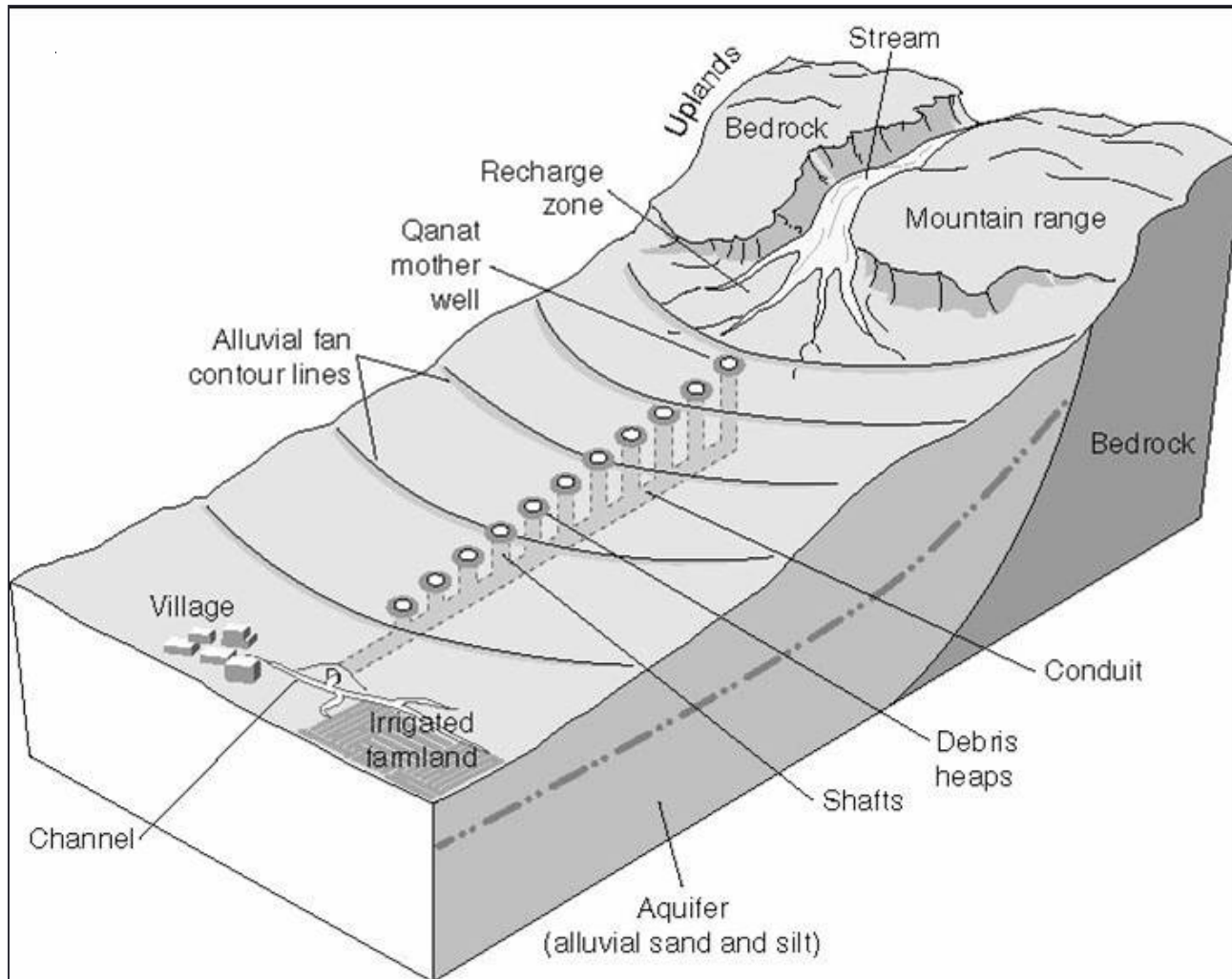
Stele of Hammurabi , Louvre Museum, Paris



King Hammurabi,
BCE 1795-BCE
1750, organized
laws of
Babylonia
(Mesopotamia)
into the “Code of
Hammurabi”

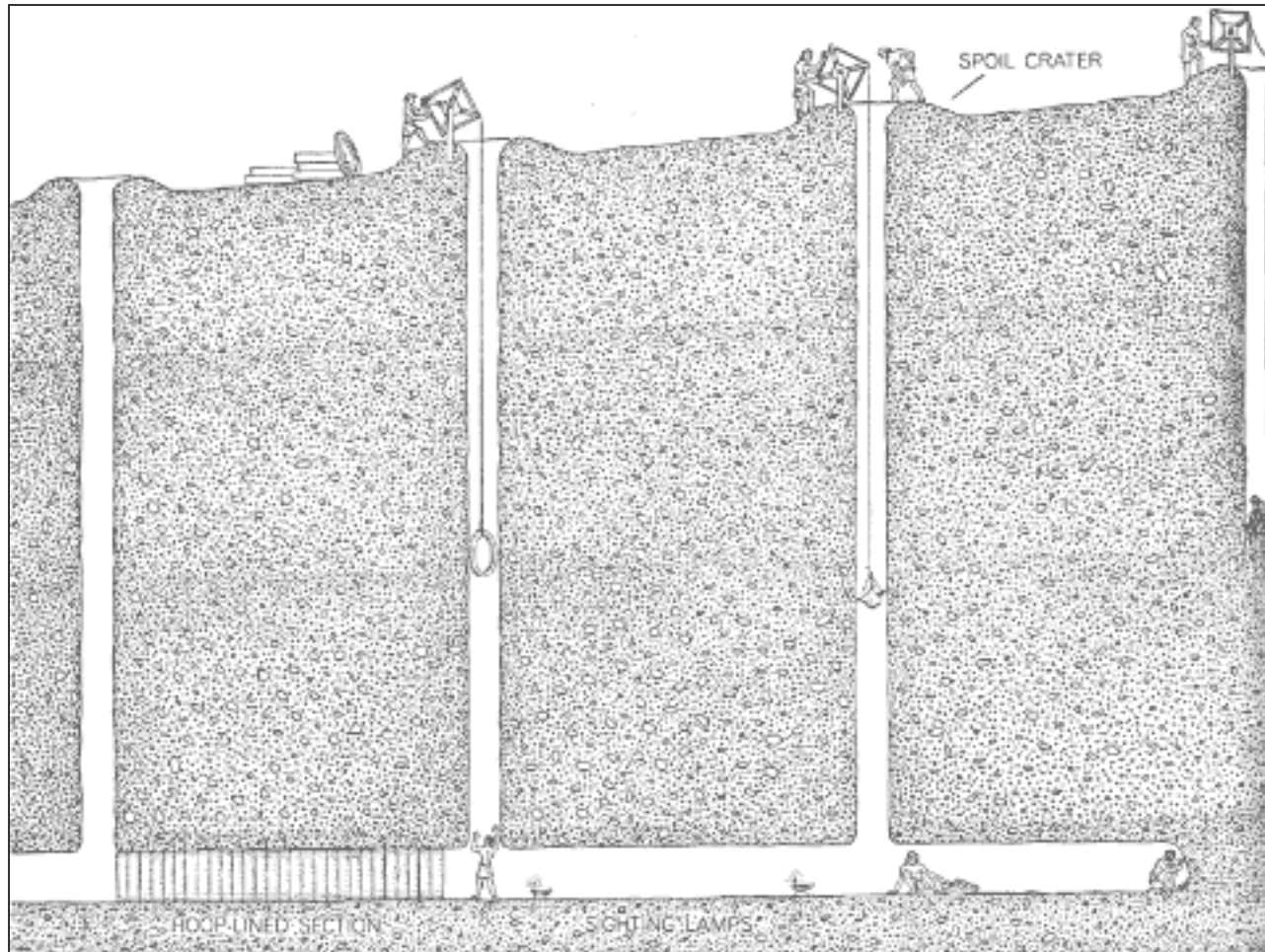
If a man has released waters and so has let the water carry away the works on his neighbor's field, he shall pay 10 gur of corn for every bur (of land) flooded.

Qanats (Iran & Iraq)



I.

Cross-section of a qanat



Interior of a qanat





The Water Court (Tribunal de Las Aguas) has been sitting in the Cathedral of Valencia, Spain, since 961, every Thursday at 11 AM, to resolve farm border, irrigation and other water-related disputes between local farmers.

The seven members are elected by local farmers and the hearings are held without oaths, written records or lawyers. The Court sits on a circular velvet couch to listen and render judgment in the local Valencia dialect. The Court was created by Moorish farmers.

Tin Mining in the United Kingdom 1300 A.D.



Leats (canals) were used to divert water to tin-rich regions away from streams.

This etching shows the removal of overburden and the washing away of unwanted gravel to separate out the heavier tin ore.

Colorado Gold Mining

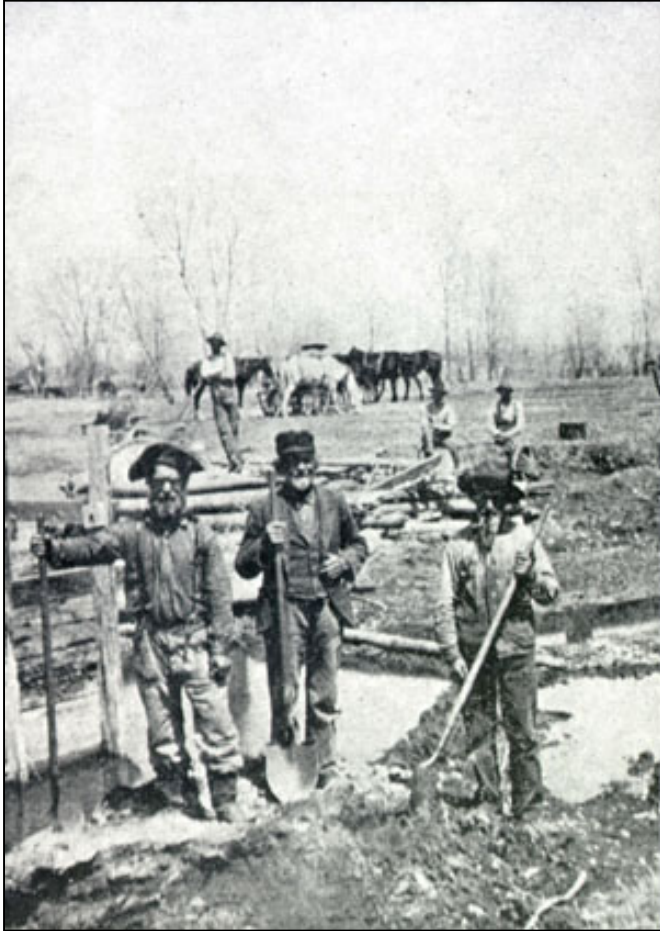


1859 – Gold Rush in Colorado

1876 – Colorado becomes a state, and a strict Doctrine of Prior Appropriation is adopted, an Innovative idea for its time.



Colorado Water Development History



Hundreds of irrigation ditches (canals) were constructed between 1860-1890 along the South Platte River and across Colorado.

Under the Doctrine of Prior Appropriation, irrigation ditches received a river diversion priority date, such as May 2, 1863 for 75 cubic feet/second. Wells received no priority date.



Settlers in Oklahoma – 1890s



<https://www.youtube.com/watch?v=s5kHdhithds>

Good Precipitation (rain) in Oklahoma – 1900 - 1930



<https://www.bing.com/videos/search?q=oklahoma+musical+wedding+song+youtube&view=detail&mid=C61E01F57699C958DD22C61E01F57699C958DD22&FORM=VIRE>

<https://www.bing.com/videos/search?q=oklahoma+musical+wedding+song&view=detail&mid=C61E01F57699C958DD22C61E01F57699C958DD22&FORM=VIRE>

Dust Bowl in Oklahoma – 1930s



<https://www.bing.com/videos/search?q=grapes+of+wrath+dust+storm&&view=detail&mid=85FCF6A20B14ABE4753B85FCF6A20B14ABE4753B&&FORM=VDRVR>
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Dust Bowl in Oklahoma – 1930s

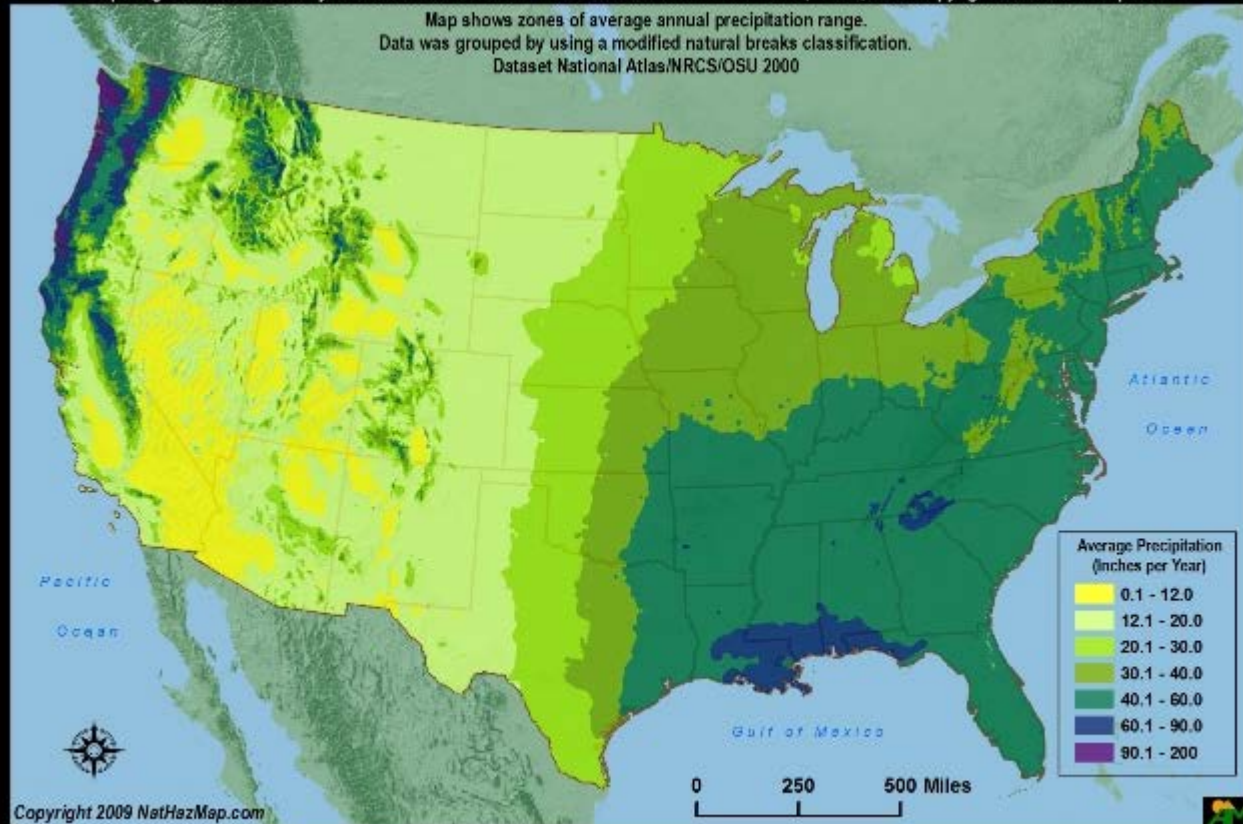


Grapes of Wrath Movie, John Steinbeck

<https://www.bing.com/videos/search?q=grapes+of+wrath+crawlers+house&&view=detail&mid=8003C042E13F0ACE01788003C042E13F0ACE0178&&FORM=VRDGAR>

Map for general reference only. Not to be used for determination of local hazard. Data: ESRI, NRCS, OSU. Copyright 2009 NatHazMap.com.

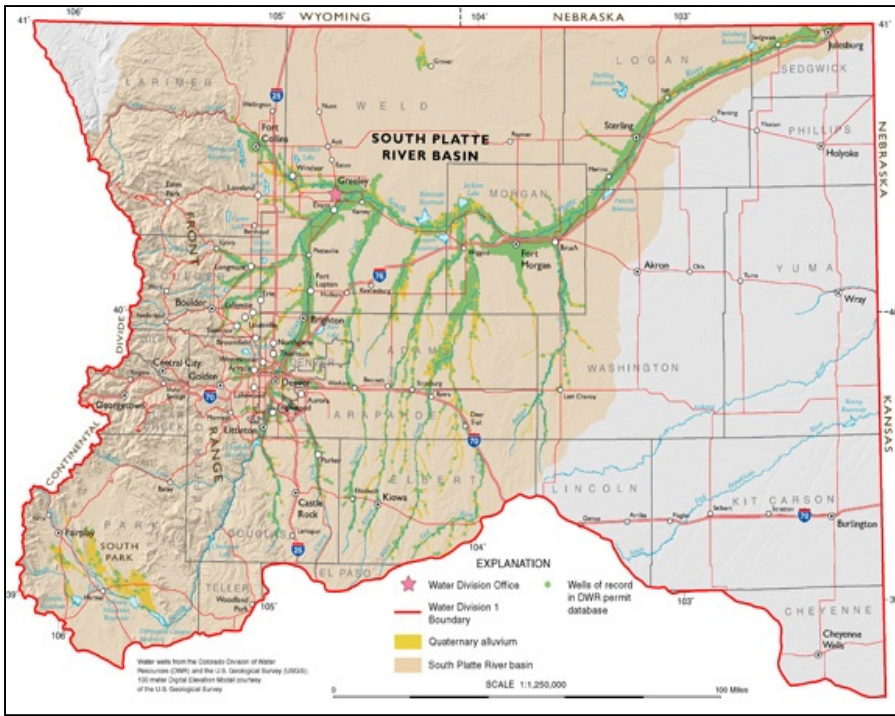
Map shows zones of average annual precipitation range.
Data was grouped by using a modified natural breaks classification.
Dataset National Atlas/NRCS/OSU 2000



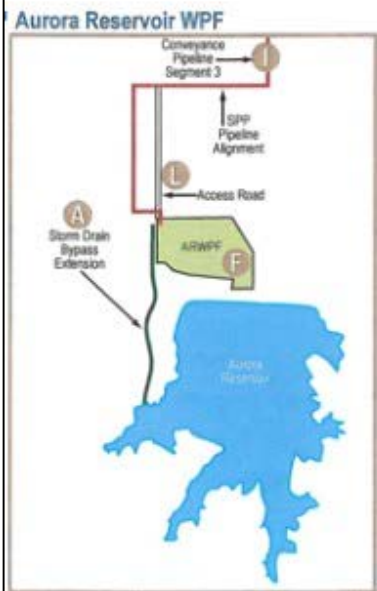
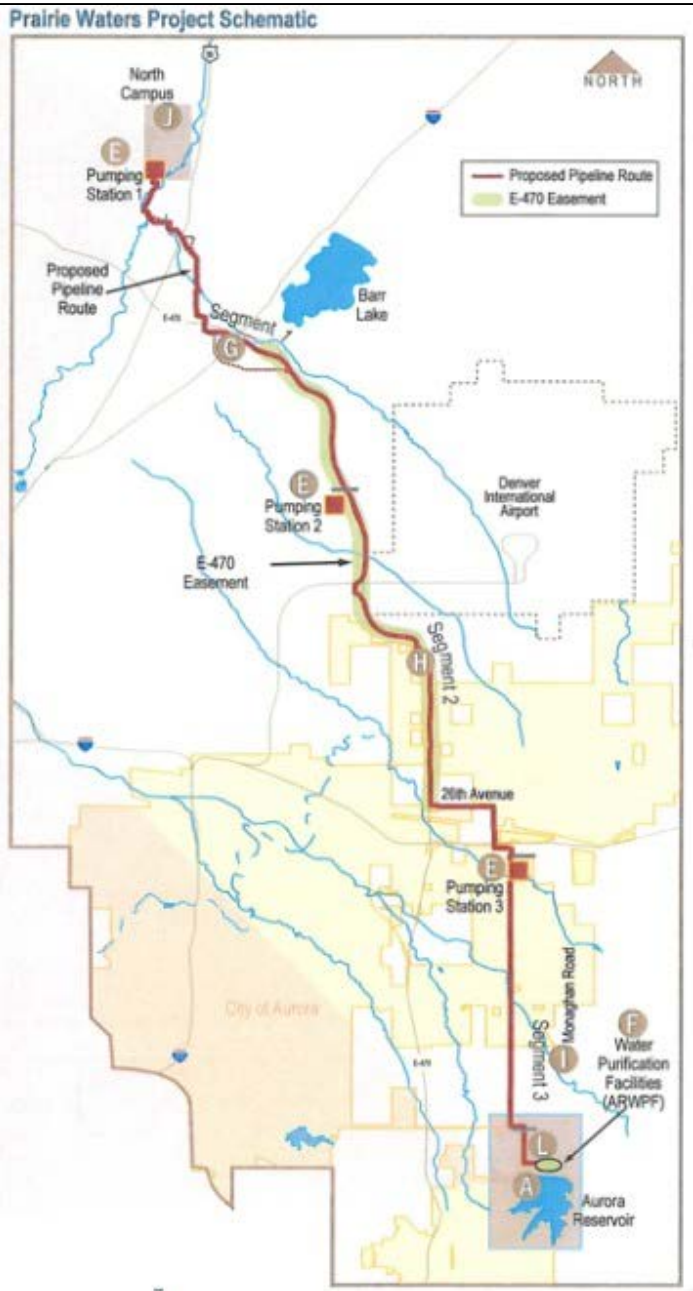
Average Annual Precipitation in the Conterminous United States: 1961-1990

South Platte River Basin Facts

Colorado Population – 5.0 million
 2030 projection – 7.1 million
 Denver Metro Population – 2.4 million
 (30% growth since 1990)
 Denver projected
 2030 projection – 3.9 million



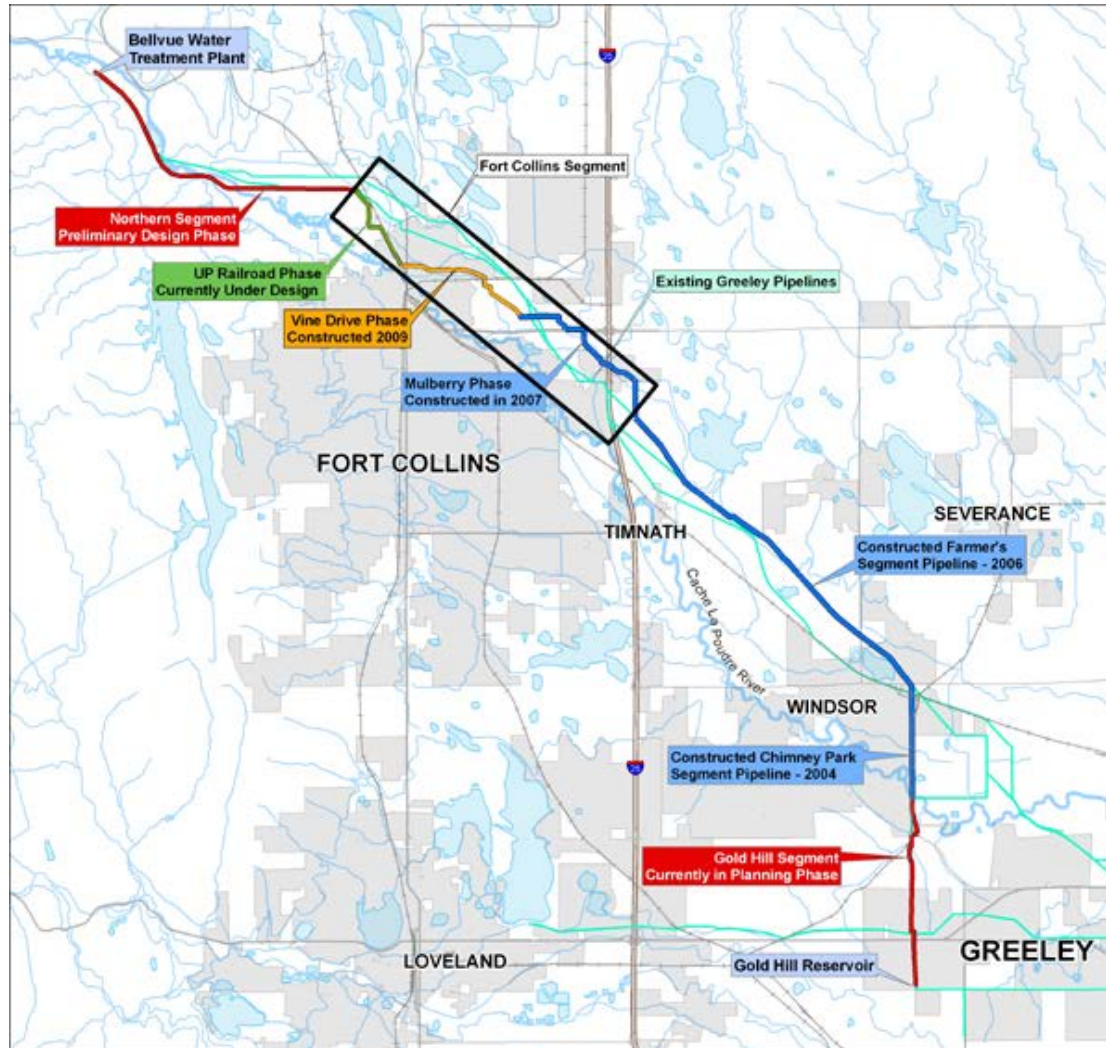
Water shortfall by 2030 in the South Platte Basin
 410,000 acre-feet (134 billion gallons)
 Acres of irrigated land expected to be dried up by
 2030 in the South Platte Basin –
 133,000 – 226,000 acres



Aurora's Prairie Waters Pipeline



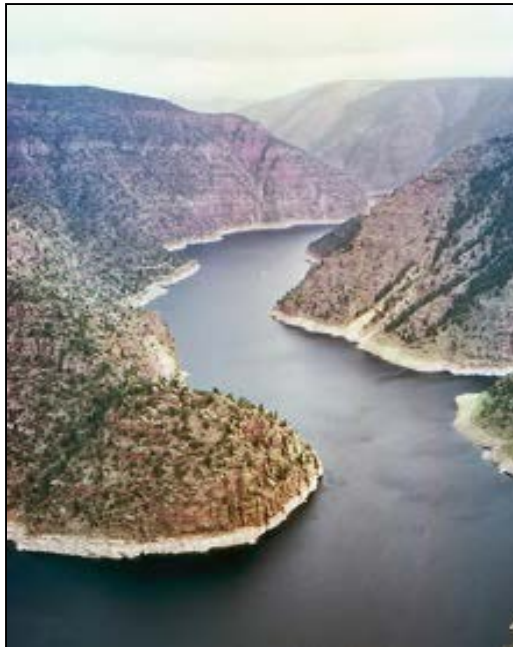
City of Greeley Water Pipeline



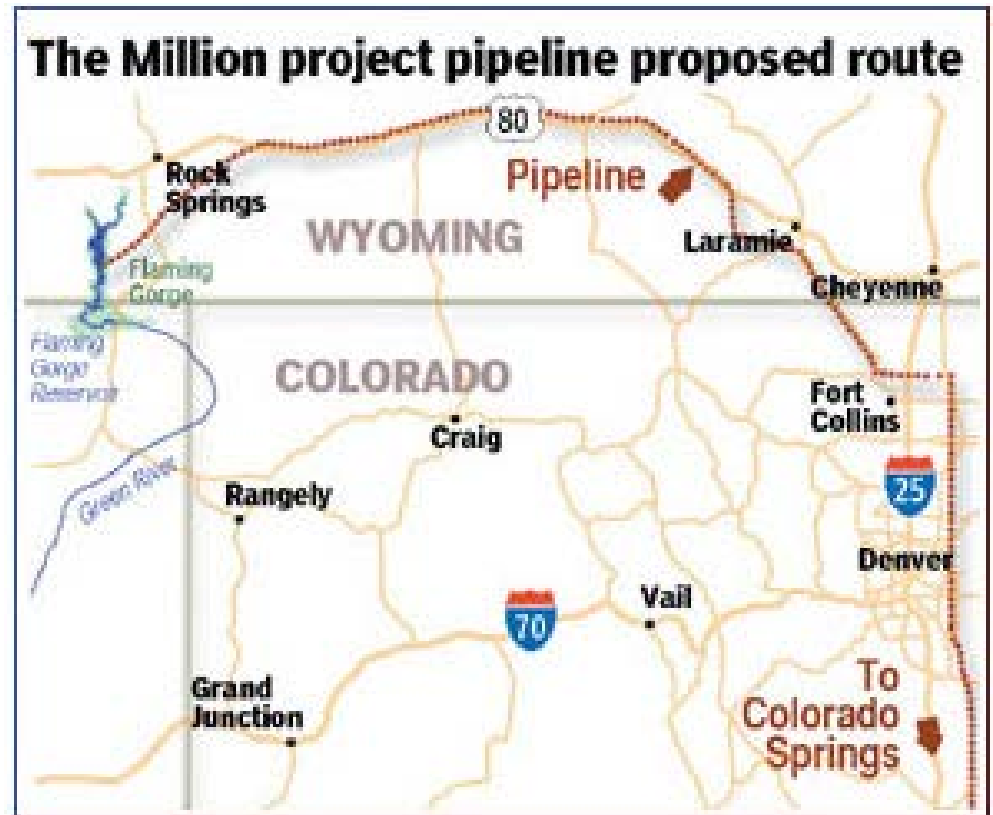
Proposed Flaming Gorge Water Pipeline



Aaron Million



Flaming Gorge in Wyoming



Denver, Colorado



**1 million people moving
to Denver by 2030**

**Where will the water
come from?**



Information:

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