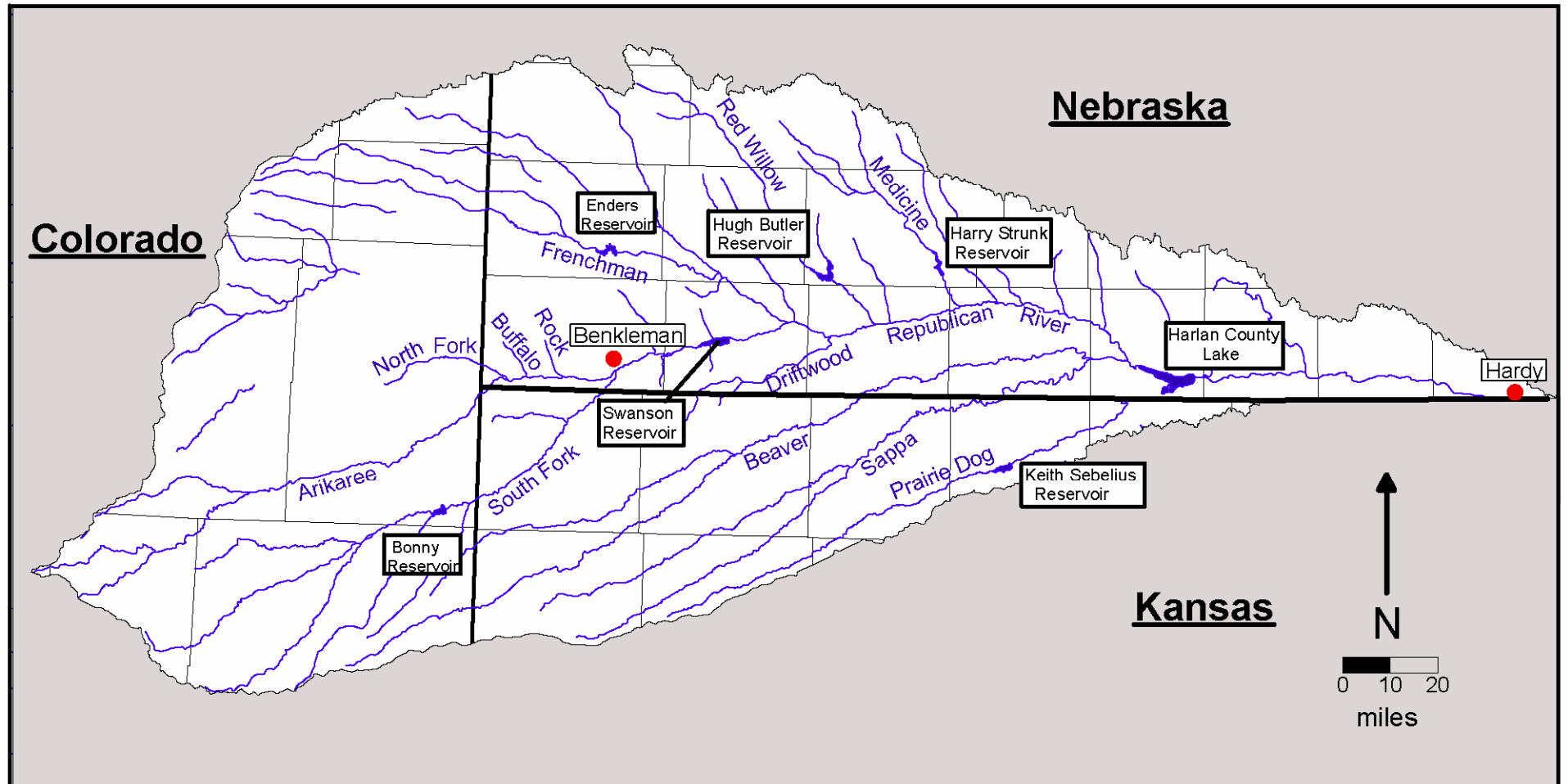




The Republican River SEO Forum September 6, 2006

Ken Knox
Chief Deputy State Engineer



REPUBLICAN RIVER COMPACT

- Compact between Colorado, Kansas, and Nebraska signed December 31, 1942
- Republican River Basin: 24,900 square miles (7,700 square miles in Colorado)
- Impetus for Compact – equitable apportionment of Republican River waters. Construction of federal storage projects for irrigation development & the aftermath of 1935 flood
- Colorado total allocation: 54,100 acre-feet per year
- Compact adjusts for variable water supply

KANSAS V. NEBRASKA & COLORADO

- Kansas filed complaint against Nebraska in May 1998 (Colorado named, but no complaint)
- Focus of Kansas' complaints against Nebraska
 1. Overuse, primarily through groundwater use
 2. Injury to Kansas
- United States as amicus curiae
- Appointment of Vincent McKusick as Special Master
- Colorado included as formal party in November 2000
- First Report of the Special Master included groundwater "to the extent it depletes Republican River Basin streamflows."
- Affirmed by United States Supreme Court

SETTLEMENT NEGOTIATIONS

- Settlement efforts began October 2001
 1. Stay of trial schedule and briefs
 2. Settlement Principles, April 2002
- Final Settlement Stipulation December 15, 2002
 1. Waives all claims through December 15, 2002
 2. “Moratorium” – no relaxation of existing laws and regulations
 3. Accounting – sub-basins may be added together (except Beaver Creek in “trigger” years – very important for our compliance)
 4. Groundwater accounting done through jointly developed model

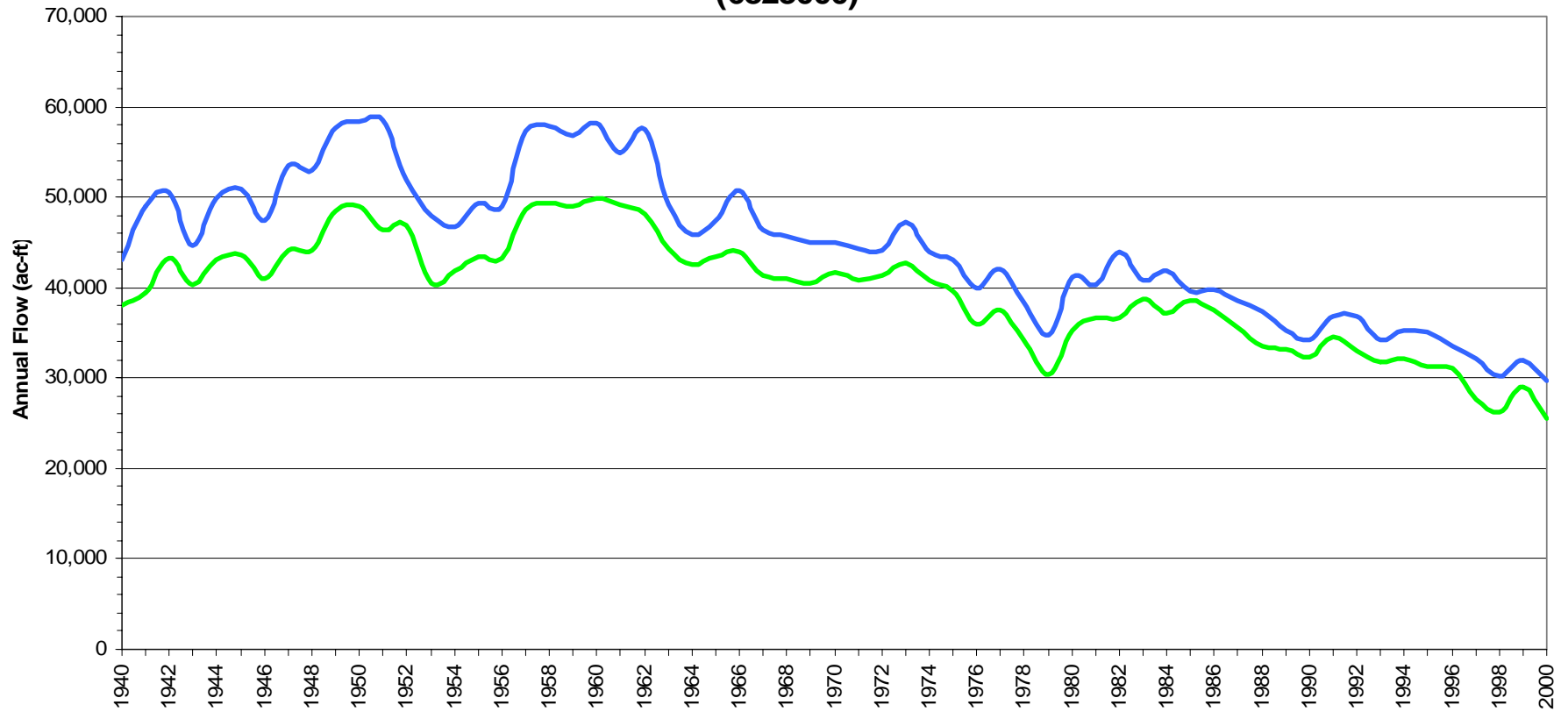
SETTLEMENT NEGOTIATIONS

- Final Settlement Stipulation (con't)
 5. Accounting Procedures re-done for much more specificity
 6. Agreement between Kansas and Nebraska on Guide Rock compliance
 7. Study on small reservoirs and on terracing
 8. Dispute resolution process
 9. First year of calculating five year running average for Compact compliance 2003
 10. Does not mandate any particular actions Colorado must take to assure consumption is within the Compact allowance

GROUND WATER MODEL

- Completed through mutual collaboration on July 1, 2003
- Purpose – to determine the amount, location, and timing of streamflow depletions caused by ground water pumping and accretions from recharge of imported water from the Platte River Basin into the Republican River Basin
- RRCA Ground Water Model represents the physical and hydrogeologic characteristics of the Republican River Basin for the period 1918 to 2000, now being updated for 2001 through 2005

Estimated Baseflow - North Fork of Republican River at the Colo-Neb Stateline (6823000)



(values in ac-ft)	Avg 1950-1964	Avg 1986-2000	Difference
Total	53,287	34,730	-18,558
Baseflow	46,139	31,616	-14,523

CURRENT STATUS (2005)

- Irrigated Acreage in Republican River Basin in Colorado

Surface water irrigated	4,763
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<u>Ground water irrigated</u>	<u>573,190</u>
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Total irrigated acreage	577,953
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- Dry-Land Farming in Colorado

Corn	549,914
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Wheat	844,463
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<u>Alfalfa</u>	<u>83,911</u>
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Total	1,478,288
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- Pasture Range in Colorado 1,776,769

CURRENT STATUS (2005)

- Land conservation and tillage practices have reduced runoff
- Irrigation well development beginning in 1960's
- Pumping estimates for 3,967 wells in Colorado: 725,069 acre-feet
- Drought reduced streamflows since 1998

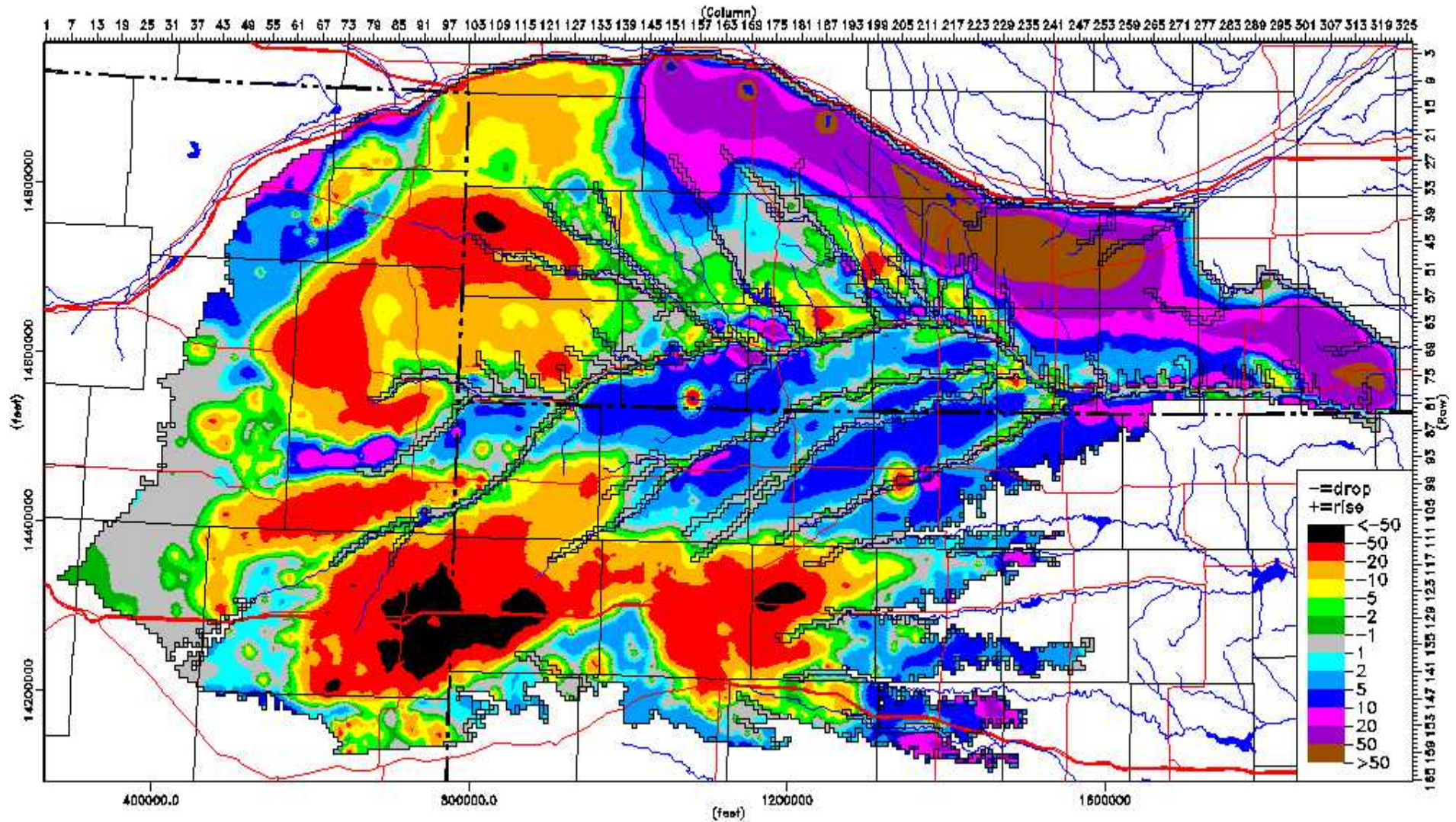
CURRENT STATUS (2005)

- Total Colorado Compact entitlement 25,040 af
Total Colorado consumptive use 35,460 af
Out-of-compliance 10,420 af
- 3-year running average (2003-2005) 11,530 af
out-of-compliance
- Accounting/compliance began in 2003 as first year
in 5-yr running average



Head Change: Steady State to 12/31/2000

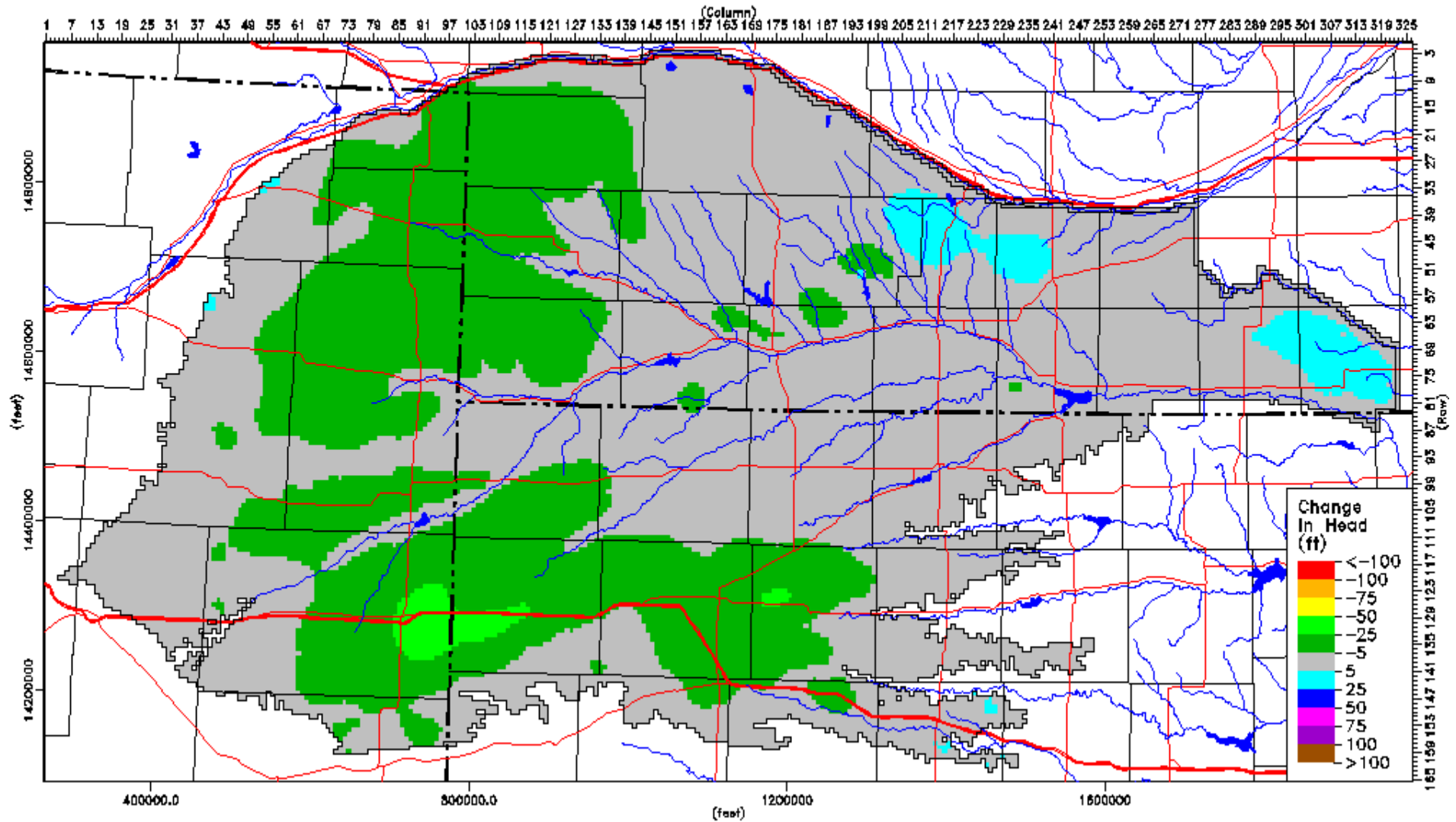
Republican River Settlement Model Version 12p

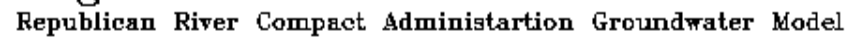




Head Change 2001 - 2020: 1981-2000 repeated

Republican River Compact Administration Groundwater Model

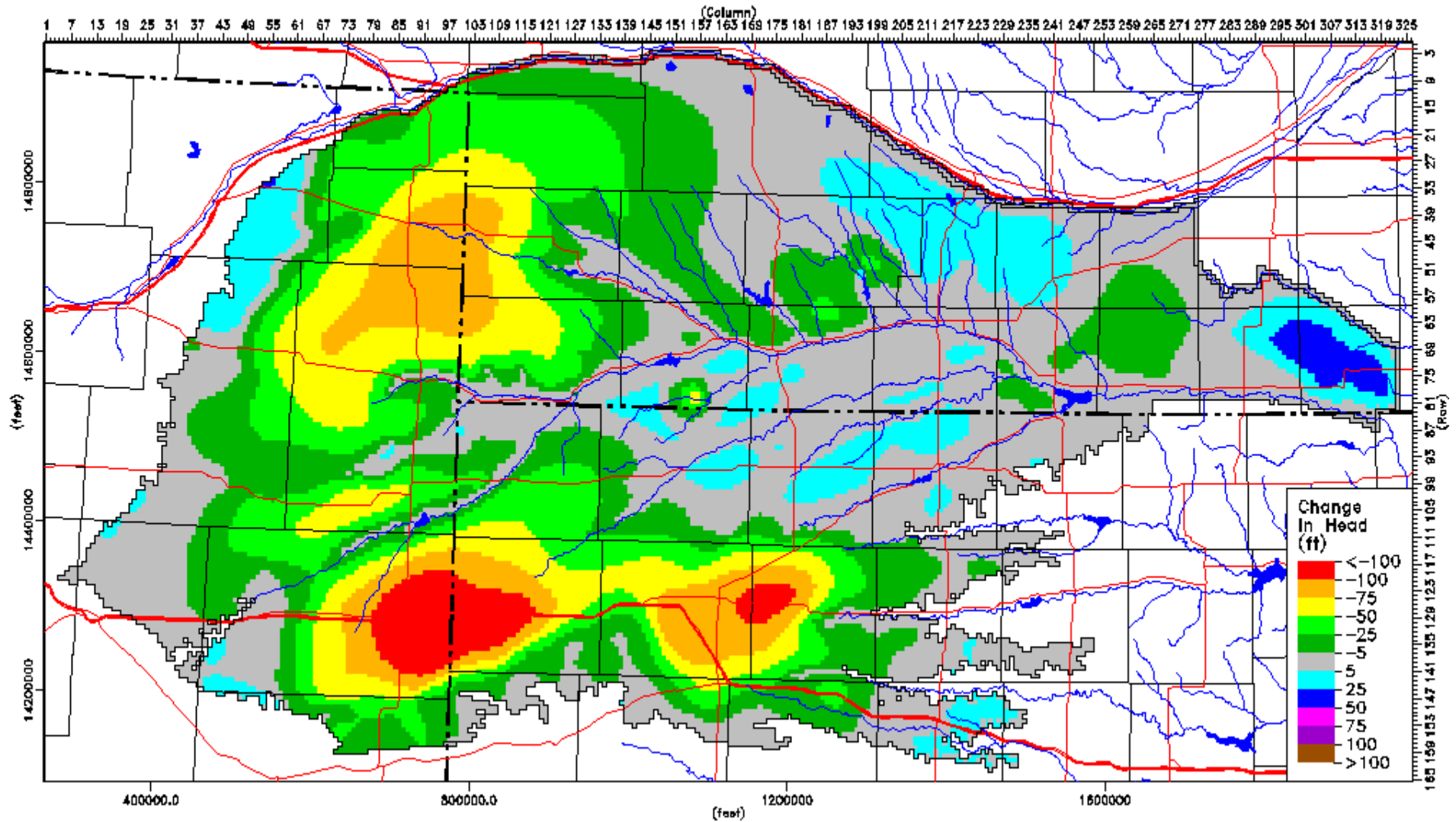






Head Change 2001 - 2100: 1981-2000 repeated

Republican River Compact Administration Groundwater Model



Goals

Compliance with the Republican River Compact and
Decree of the United States Supreme Court

Protection of agriculture and economic development
in northeast Colorado



Actions Taken Toward Compact Compliance

- **Legislative Leadership (SB 04-225 and SB 04-235)**
- **Community Involvement and Education**
- **Crafting a Solution through Local Decision-Making**
- **Reducing Consumptive Use through Land Retirement**



Thank You



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