South Platte River Issues

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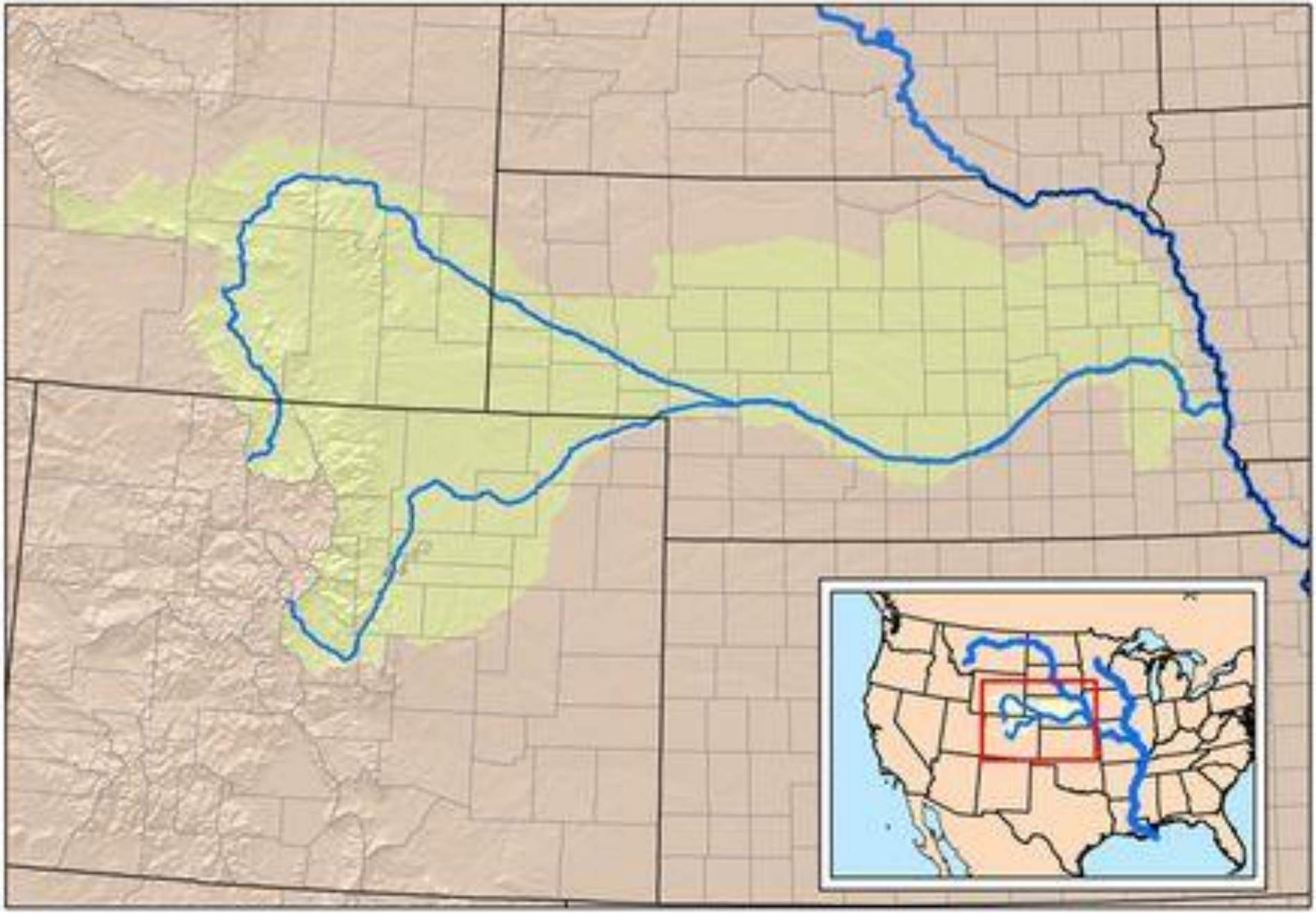
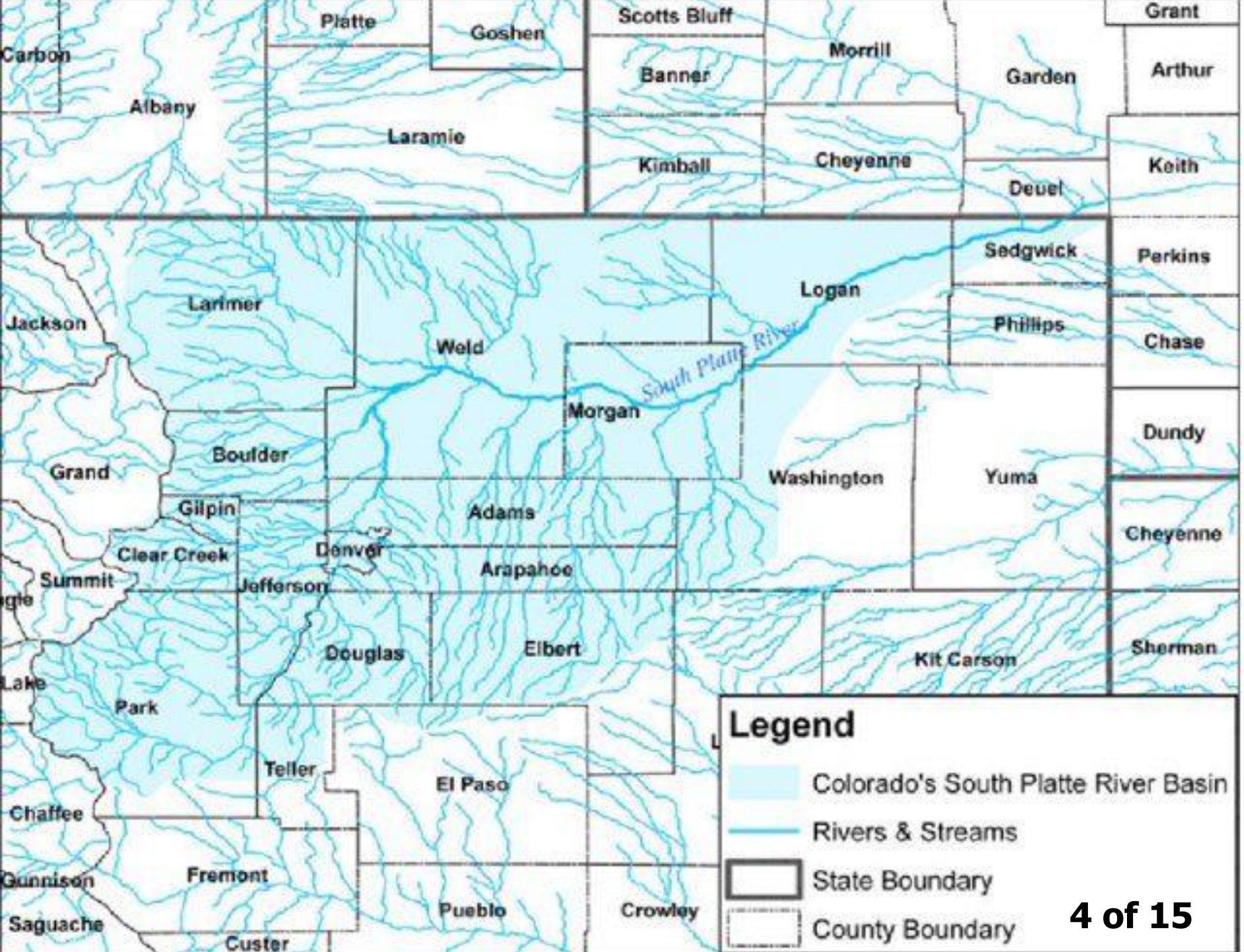
South Platte compact fundamentals

- 1. 1923 compact divides South Platte into upper section & lower section. **Nebraska has no water rights in the upper section**. Denver is in the upper section.
- 2. compact negotiated IMO to insure that Colorado would administer junior Colorado surface water diversions in lower section to protect the senior Western Canal. 120 cfs is IMO for the Western Canal.
- 3. In lower section Nebraska is entitled to up to 500 cfs off-season flows for Perkins Cty Canal, less up to 35,000 AF for Colo.
- 500 cfs = 165,000 AF – 35,000 AF = 130,000 AF
- 300 cfs = 64,000 AF 250 cfs = 47,000 AF 1 cfs = 1.98 AF/day. I don't know how much post-compact storage Colo has.
- $500 million / 50,000 AF = $10,000/AF




Platte
Goshen
Scotts Bluff
Grant
Carbon
Morrill
Banner
Garden
Arthur
Albany
Laramie
Kimball
Cheyenne
Keith
Deuel
Sedgwick
Perkins
Logan
Larimer
Jackson
Phillips
Chase
Weld
South Platte River
Morgan
Dundy
Boulder
Grand
Washington
Yuma
Gilpin
Adams
Cheyenne
Clear Creek
Denver
Summit
Arapahoe
Jefferson
Douglas
Elbert
Kit Carson
Sherman
Lake
Park
Teller
El Paso
Chaffee
Gunnison
Fremont
Pueblo
Crowley
Saguache
Custer
Legend
Colorado's South Platte River Basin
Rivers & Streams
State Boundary
County Boundary

South Platte basin Colorado irrigation

- around 1 million acres irrigated in SP basin – 30% of Colorado total irrigated acres (2007 – ~900,000 now?)
  - 550,000 ac surface water irrigated--55% [16% in Neb]
  - 170,000 ac well irrigated—17% [84% in Neb]
  - 280,000 ac surface & supplemental well irrigated—28%
- around 9,000 irrigation wells decreed but some abandoned
  - since 2002 close to 5,000 irrigation wells have been permanently shut off because they cannot compensate the river for their stream depletion effect
  - another ~1000 wells can pump only 2 days/week
- SP surface water: 1.4 MAF [million acre feet] native + 0.4 MAF trans-mountain diversion inflows = 1.8 MAF total avg supply
- 4 MAF irrigation diversions – lots of reuse ☺

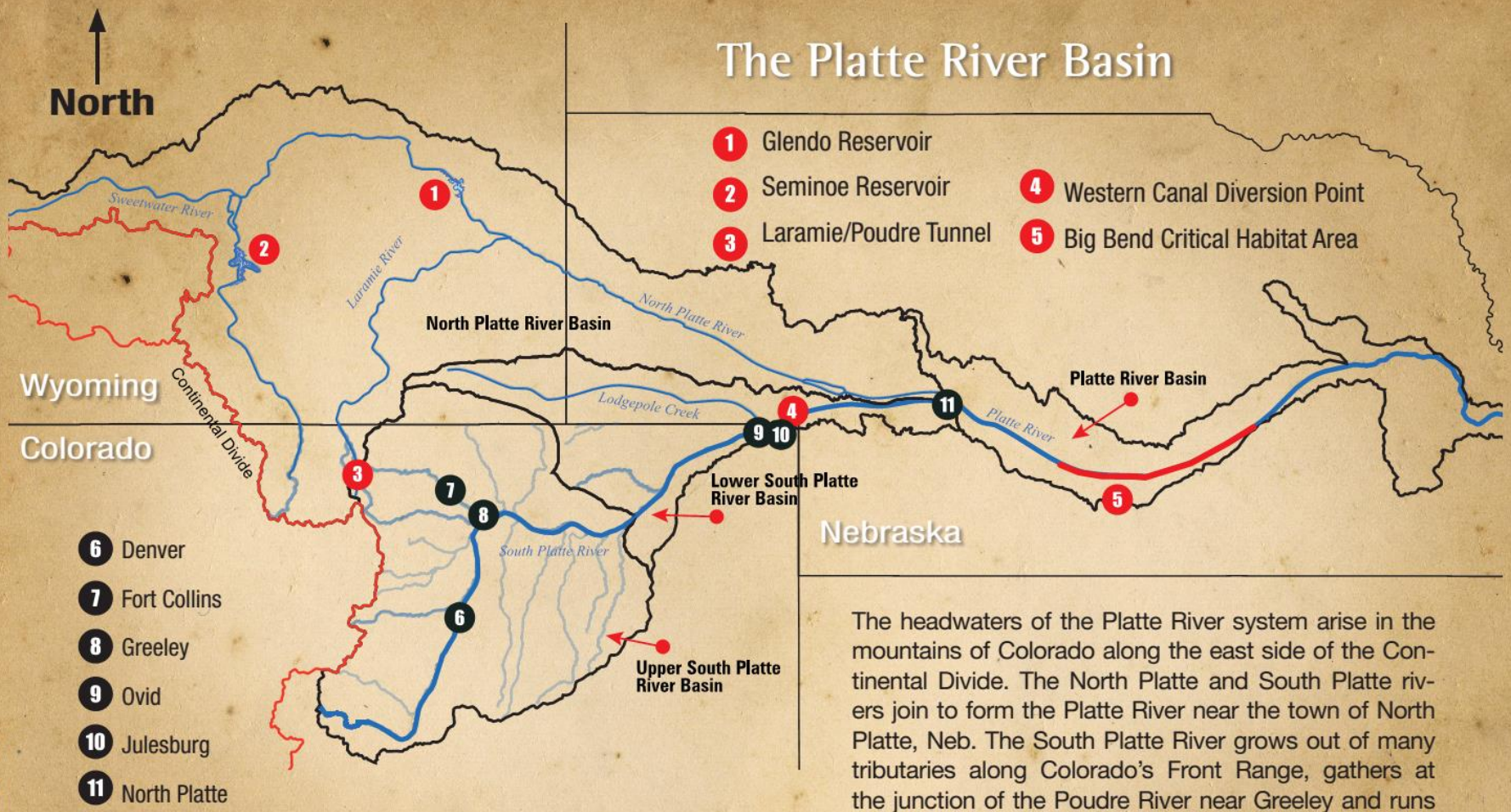
Colorado water background

- 2002: ongoing 1000+ year drought in Colo River basin began
- 2002: 4000+ junior wells shut down in South Platte basin
- 2007 South Platte Water Task Force authorized
- 2010 Colorado Water Plan published – "buy & dry" for Denver
- 2013 Colorado Water Plan update authorized (ongoing)
  - plans for 8 regions + state, including SP basin
  - Led by regional basin roundtables
- 2015 South Platte Basin Implementation Plan Jan 2016
- 2022 South Platte Basin Implementation Plan Jan 2022

2015 South Platte priority issues

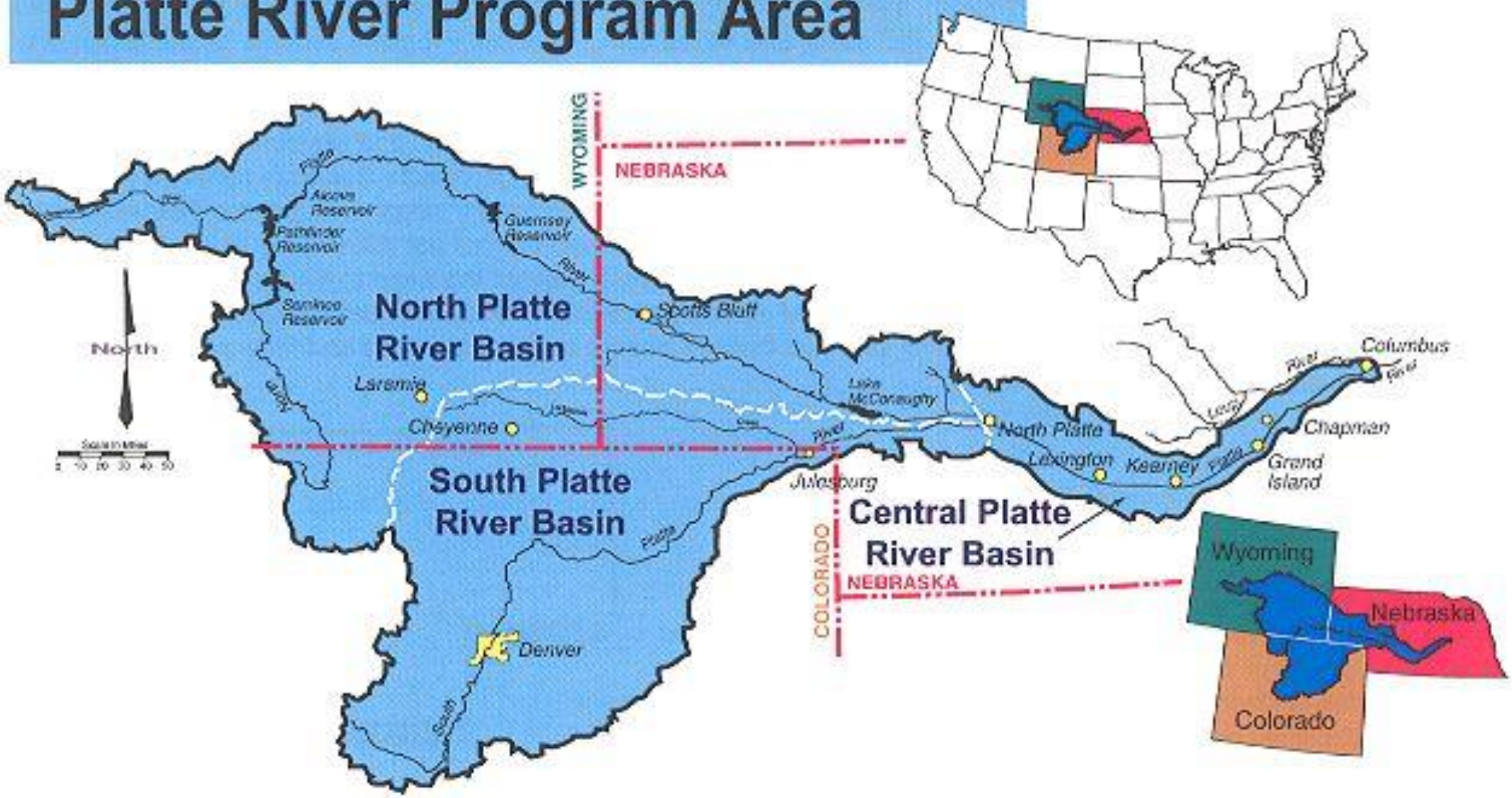
- address projected 500 KAF (thousand acre feet) municipal & industrial (M&I) supply gap in 2050
- addressing state's largest regional supply gap in South Platte basin – Colorado's most populous & most agriculturally productive basin
- reduce "buy & dry" transfers of irrigation water to cities
  - up to 340,000 irrigated acres could be "dried up" to satisfy Denver's projected 2050 population. So SP ag interests want Denver to get its water some other way.

The Platte River Basin



The headwaters of the Platte River system arise in the mountains of Colorado along the east side of the Continental Divide. The North Platte and South Platte rivers join to form the Platte River near the town of North Platte, Neb. The South Platte River grows out of many tributaries along Colorado's Front Range, gathers at the junction of the Poudre River near Greeley and runs into Nebraska below Julesburg. The Laramie and North Platte rivers arise in Colorado north of Rocky Mountain National Park and join in Wyoming. Colorado's share of Laramie and North Platte river water is governed by the Supreme Court's equitable apportionment decrees in *Wyoming v. Colorado* and *Nebraska v. Wyoming*. The State Engineers are authorized to administer the South Platte Compact.

Platte River Program Area



2017 South Platte Storage Study

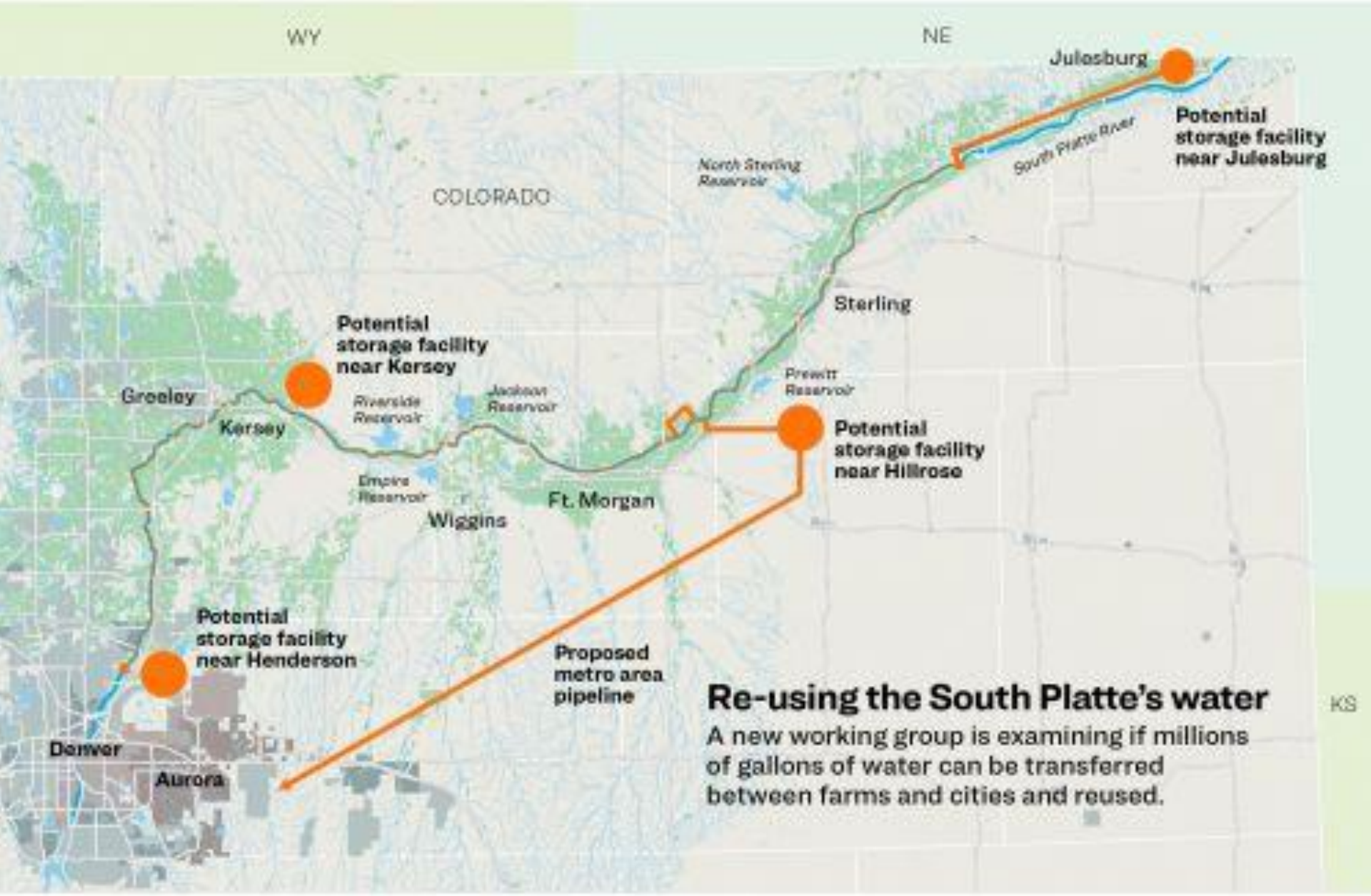
- study estimated average annual “surplus” flows entering Neb average 397 KAF, ranging from 79 KAF to 951 KAF.
- Adjusted for expected lower basin Colorado water developments as per 2017, this would fall to annual average of 332 KAF, ranging from 54 KAF to 815 KAF.
- if Neb gets serious about this, would need to double-check this study IMO

2020 SPROWG study

- South Platte Regional Opportunities Water Group study ($354,000 study costs)
- would capture return flows & runoff before it gets to lower section & pipe it back to Denver for treatment for M&I use
  - 215 KAF to 409 KAF storage
- state political benefits: (1) Denver gets credit with western slope for intensively reusing Colo River transmountain diversions & (2) gets some SP ag credit for trying to reduce 2050 500 KAF M&I supply gap
  - but only ~50 KAF M&I, ~100 KAF in droughts.

SPROWG, con't

- Project would provide between 42 KAF to 65 KAF M&I in normal & wet years and between 82 KAF to 115 KAF in dry years.
- would provide 3 KAF to 14 KAF ag in average & wet years and 10 KAF to 35 KAF in dry years.
- Cost $1.2-$1.8 billion for all untreated water ($18,400 - $22,800/AF) and $2.4-$3.4 billion for all treated water ($33-$43,200/AF).
- just a concept now, not a firm project proposal but most likely the biggest threat to Nebraska


WY
NE
Julesburg
Potential storage facility near Julesburg
South Platte River
North Sterling Reservoir
COLORADO
Sterling
Potential storage facility near Kersey
Greeley
Kersey
Riverside Reservoir
Jackson Reservoir
Prewitt Reservoir
Potential storage facility near Hillrose
Empire Reservoir
Wiggins
Ft. Morgan
Potential storage facility near Henderson
Proposed metro area pipeline
Denver
Aurora
KS
Re-using the South Platte's water
A new working group is examining if millions of gallons of water can be transferred between farms and cities and reused.

2020 Colorado water plan project funding

- up to $19 million/year of Colo sports gaming tax to fund the water plan (but plan needs $100 million/year)
- from 2015-20, the Colorado Water Conservation Board has made statewide
  - grants of $63.5 million for 241 projects, or $263,485 per project
  - loans of $420 million for 82 projects, or $5.122 million per project – from bonds
- the 280+ SP projects are mostly at the discussion stage now
- SPROWG has most political push, is upper section.

Nebraska response

- $500 million proposed in Governor's budget for Perkins Cty Canal
  - Appropriations committee likely to authorize $55 million
  - many many unanswered questions when Governor & NDNR chief addressed legislative committees
- how much water would we get in Neb with Perkins canal? what would it do? no new water – prevent future flow reductions?
- negotiating with Colo could be better way to deal with this – might get enforceable rights to some of the Perkins canal water without spending $500+ million

Questions? ☺

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