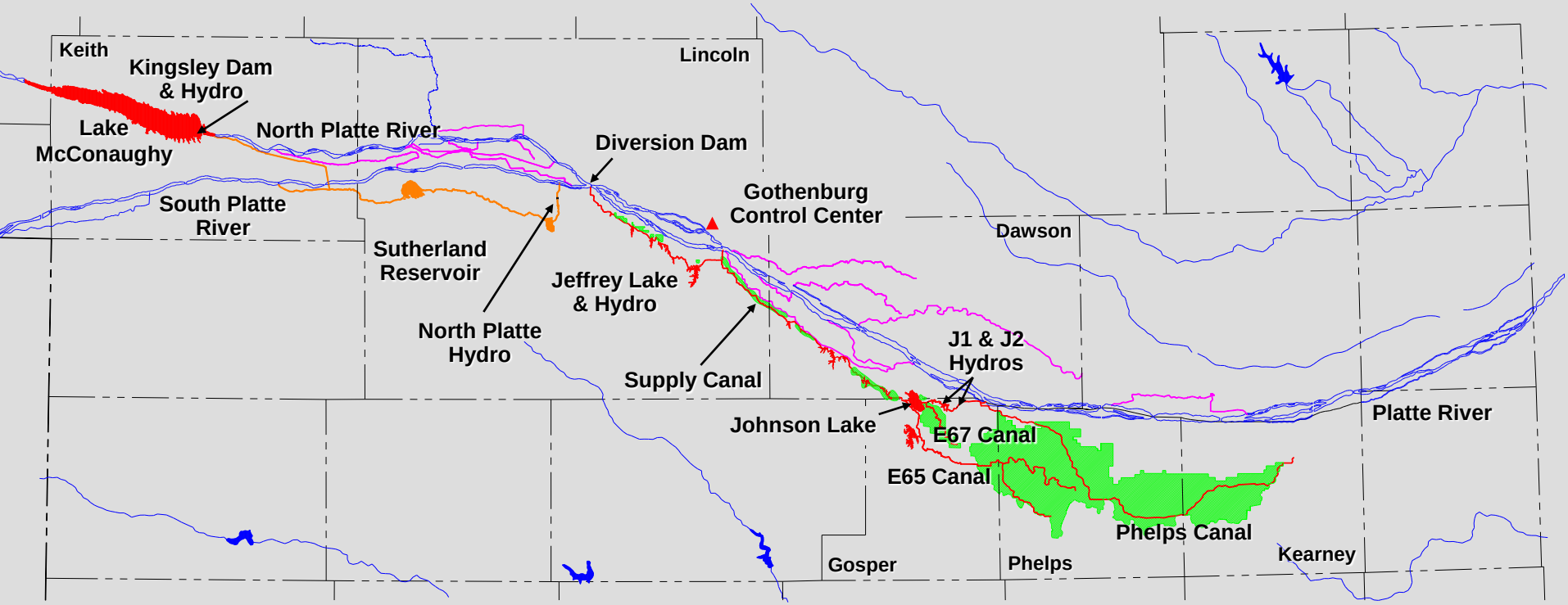
Water Sustainability Platte River

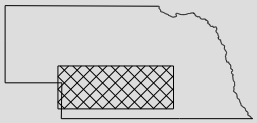
Don Kraus, P.E., General Manager

The Central Nebraska Public Power and Irrigation District

Water Funding Task Force: Aug. 22, 2013

Platte River Surface Water Projects





Area in Nebraska
Shown Above

Central Facilities

Central Irrigated Area

NPPD Facilities

Other Irrigation Canals

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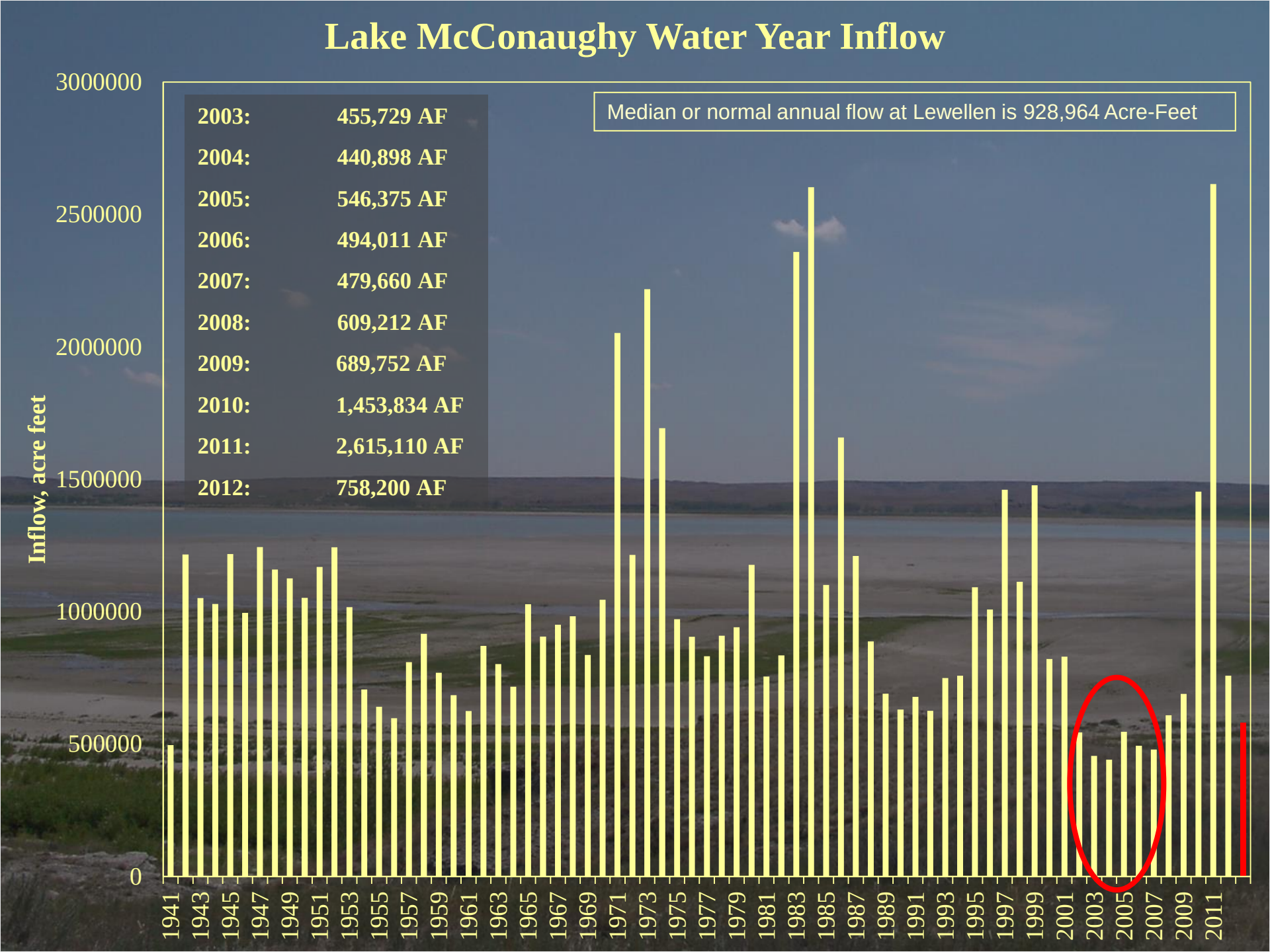
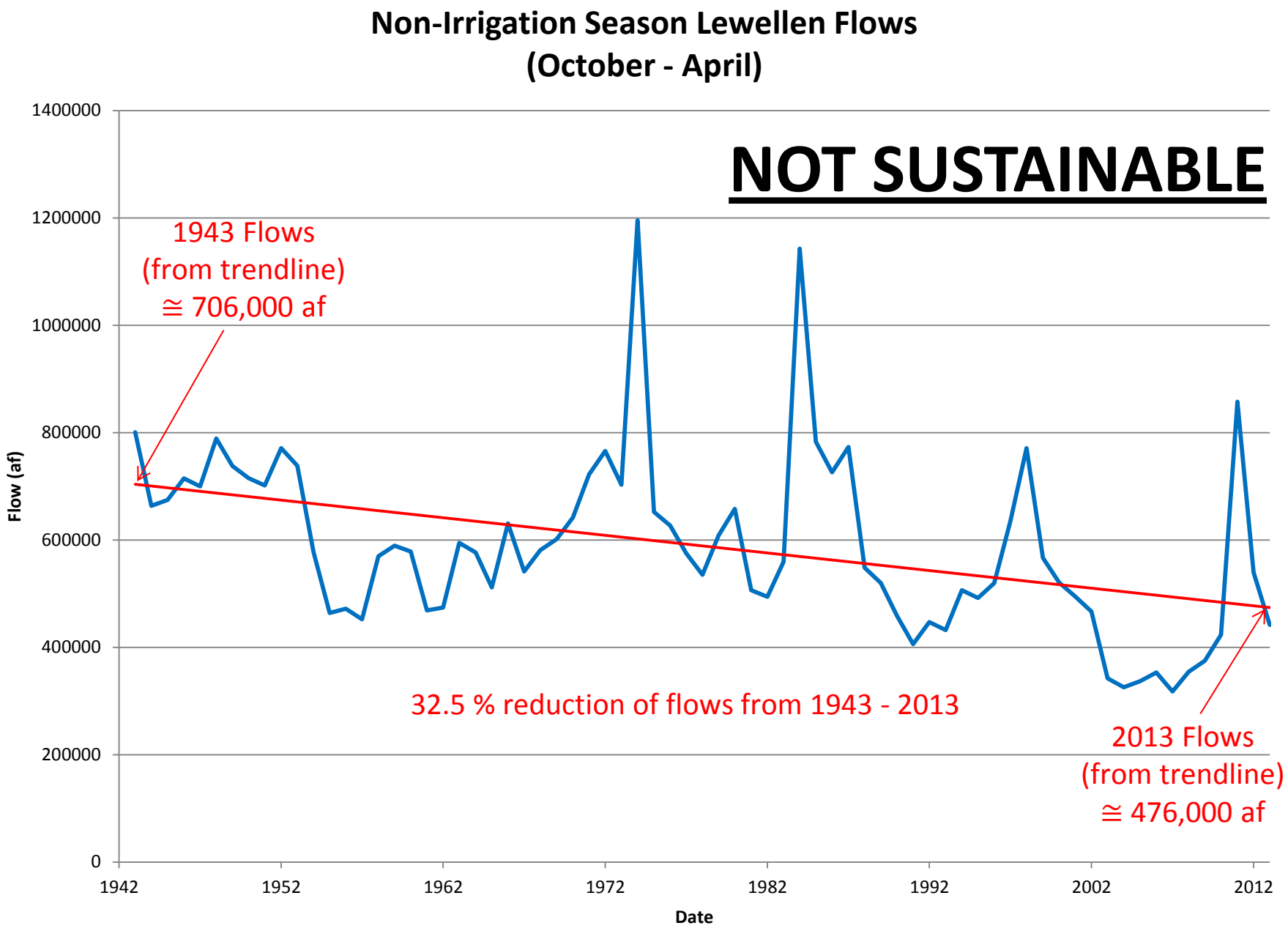
Benefits from Surface Water Projects

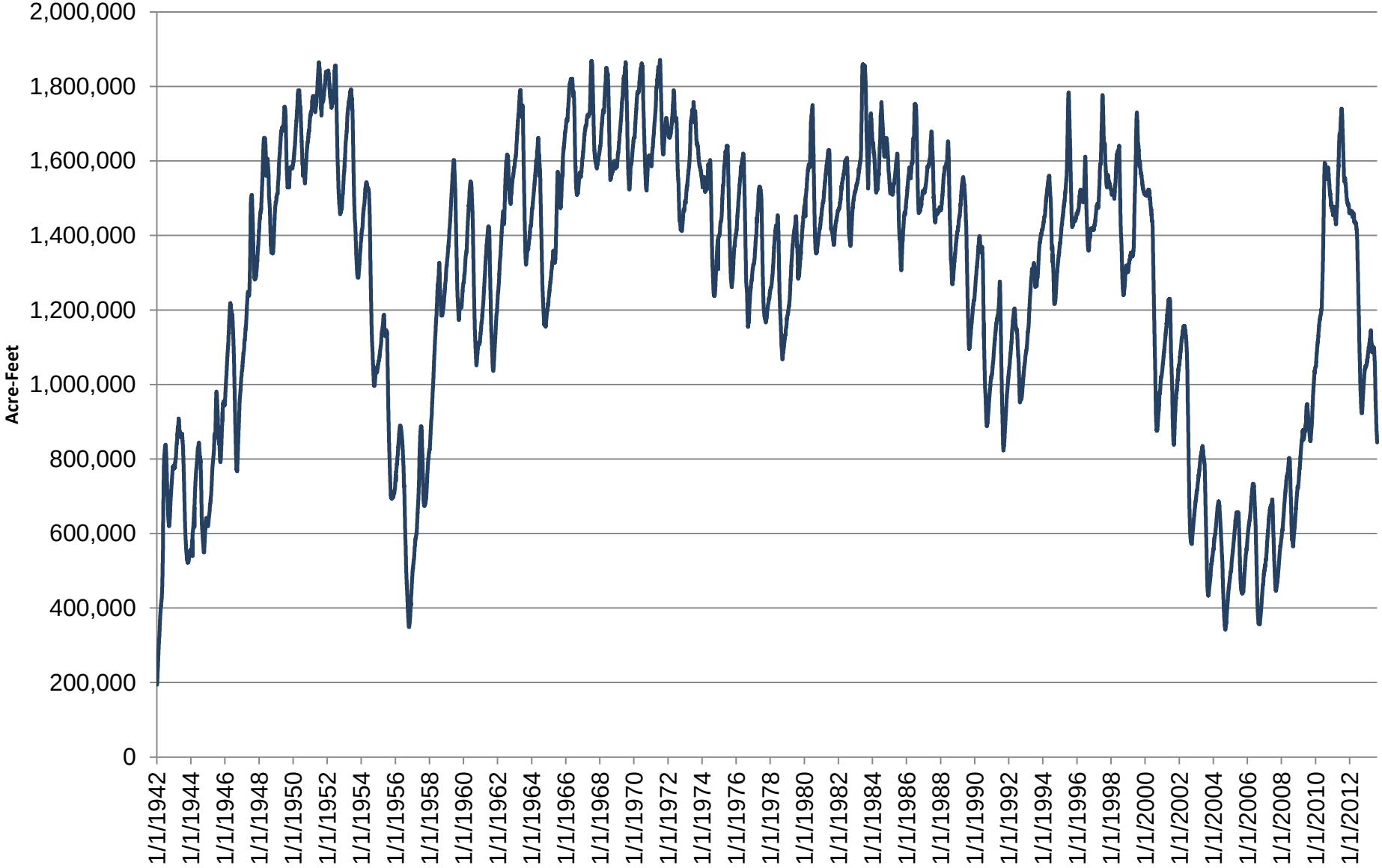
- Surface Water Irrigation
- Groundwater Irrigation
- Recreation
- Fish and Wildlife Habitat
- Hydroelectric Power
- Power Plant Cooling Water
- Flood Control

Lake McConaughy Water Year Inflow

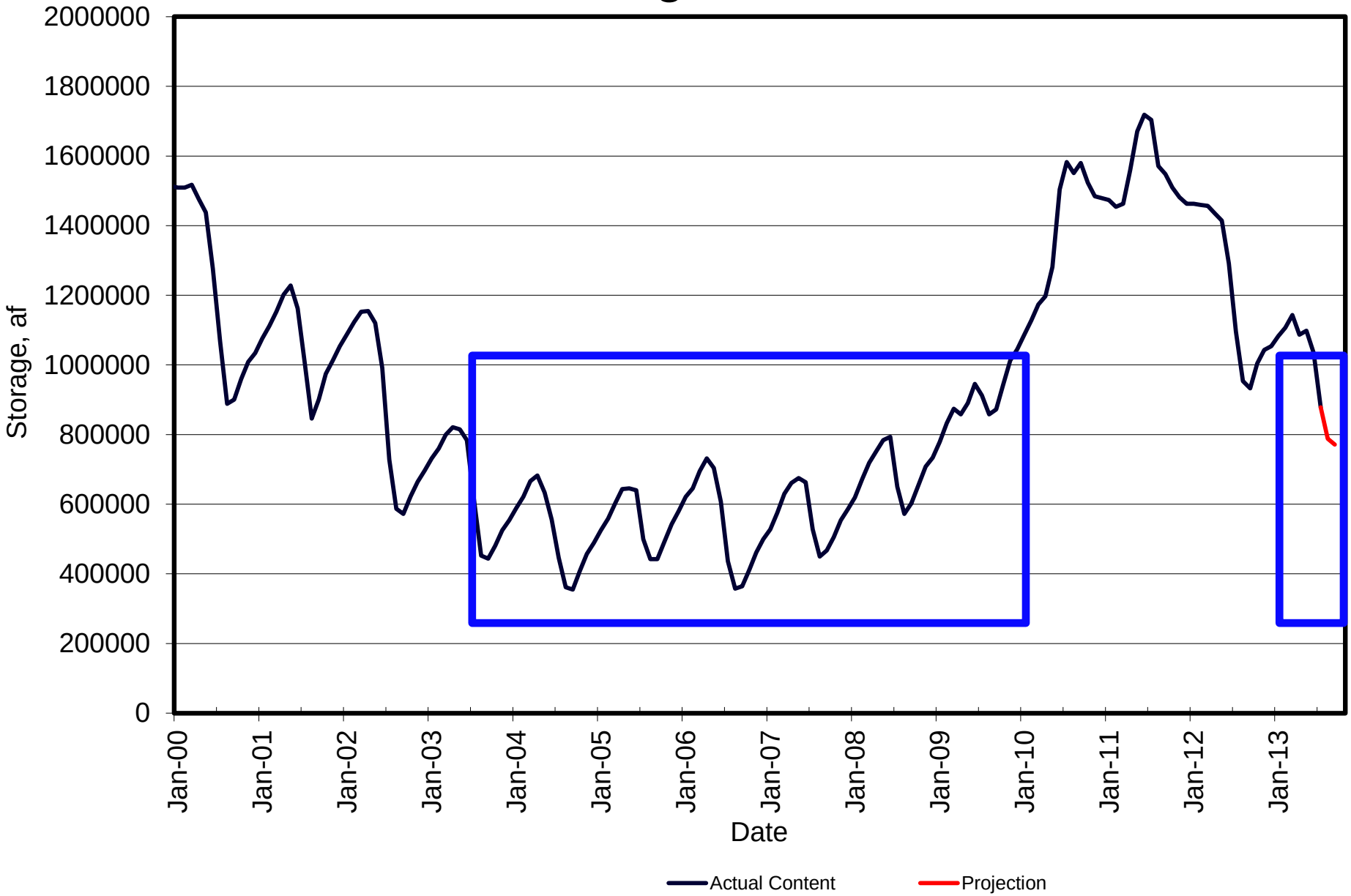



Non-Irrigation Season Lewellen Flows
(October - April)
NOT SUSTAINABLE
1943 Flows
(from trendline)
≅ 706,000 af
32.5 % reduction of flows from 1943 - 2013
2013 Flows
(from trendline)
≅ 476,000 af
Flow (af)
1400000
1200000
1000000
800000
600000
400000
200000
0
1942
1952
1962
1972
1982
1992
2002
2012
Date

Lake McConaughy Volume
1942 to Present

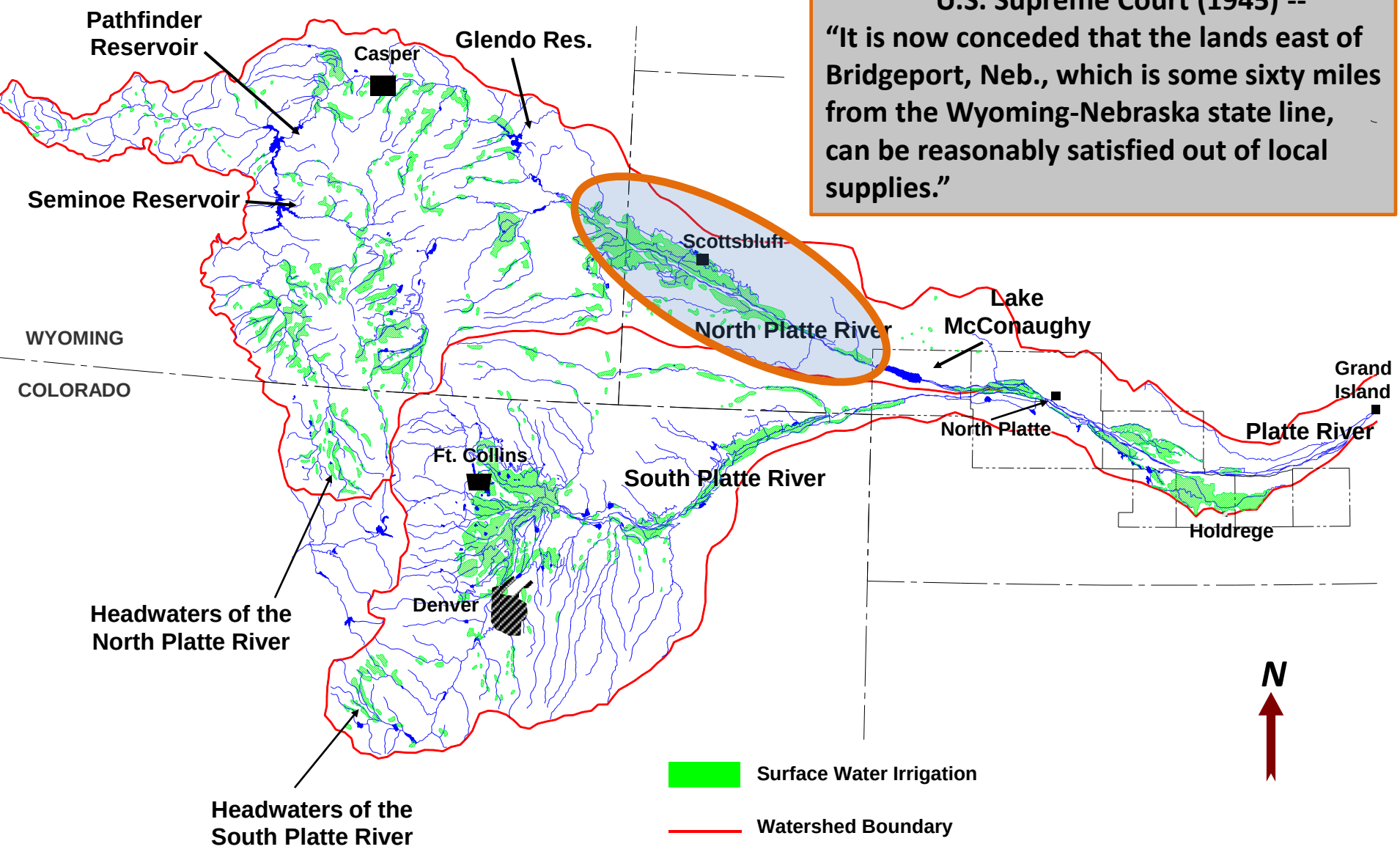


Lake McConaughy
Storage Contents



Source of Central's Water Supply: North and South Platte River Basins

U.S. Supreme Court (1945) --
"It is now conceded that the lands east of Bridgeport, Neb., which is some sixty miles from the Wyoming-Nebraska state line, can be reasonably satisfied out of local supplies."



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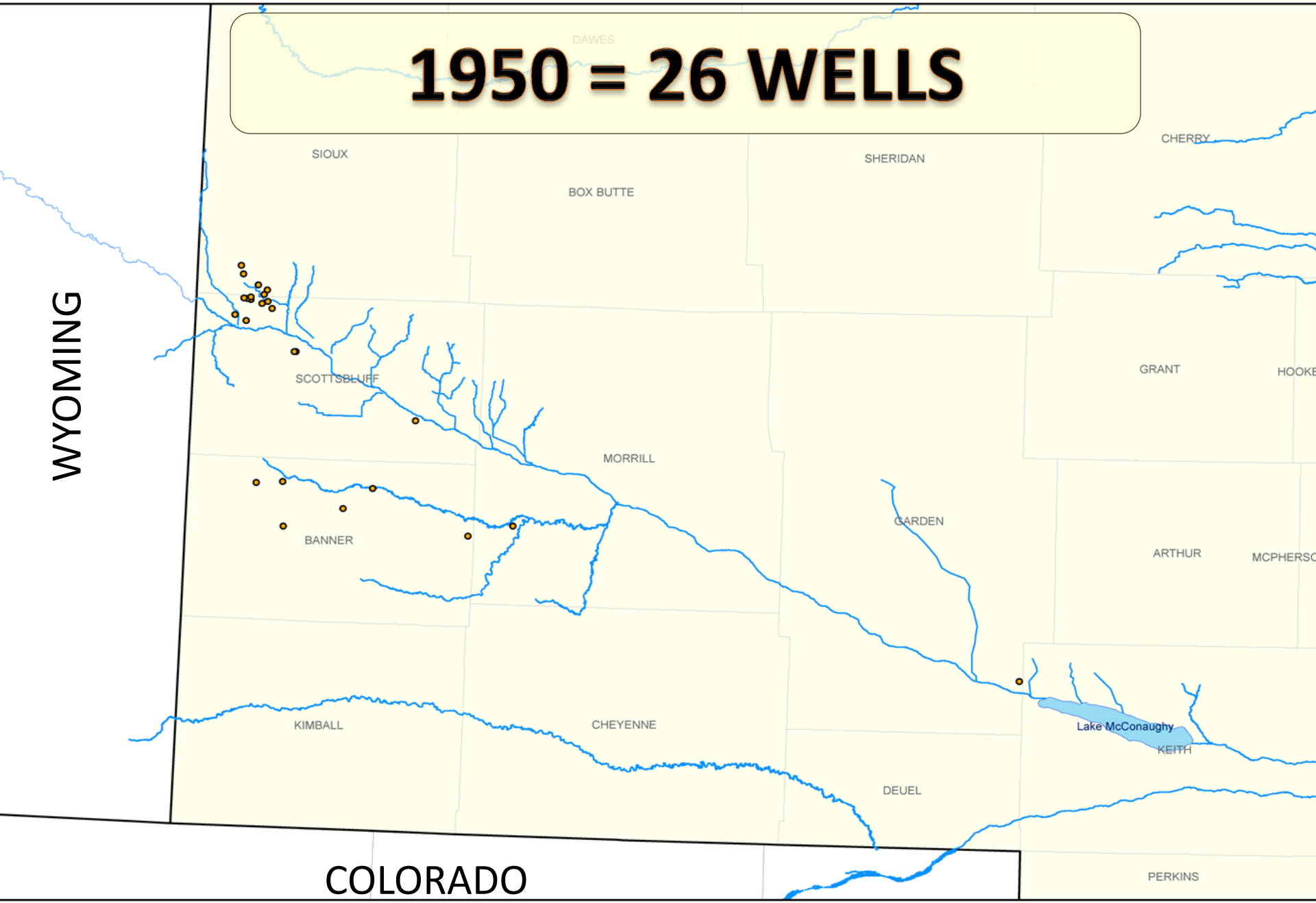
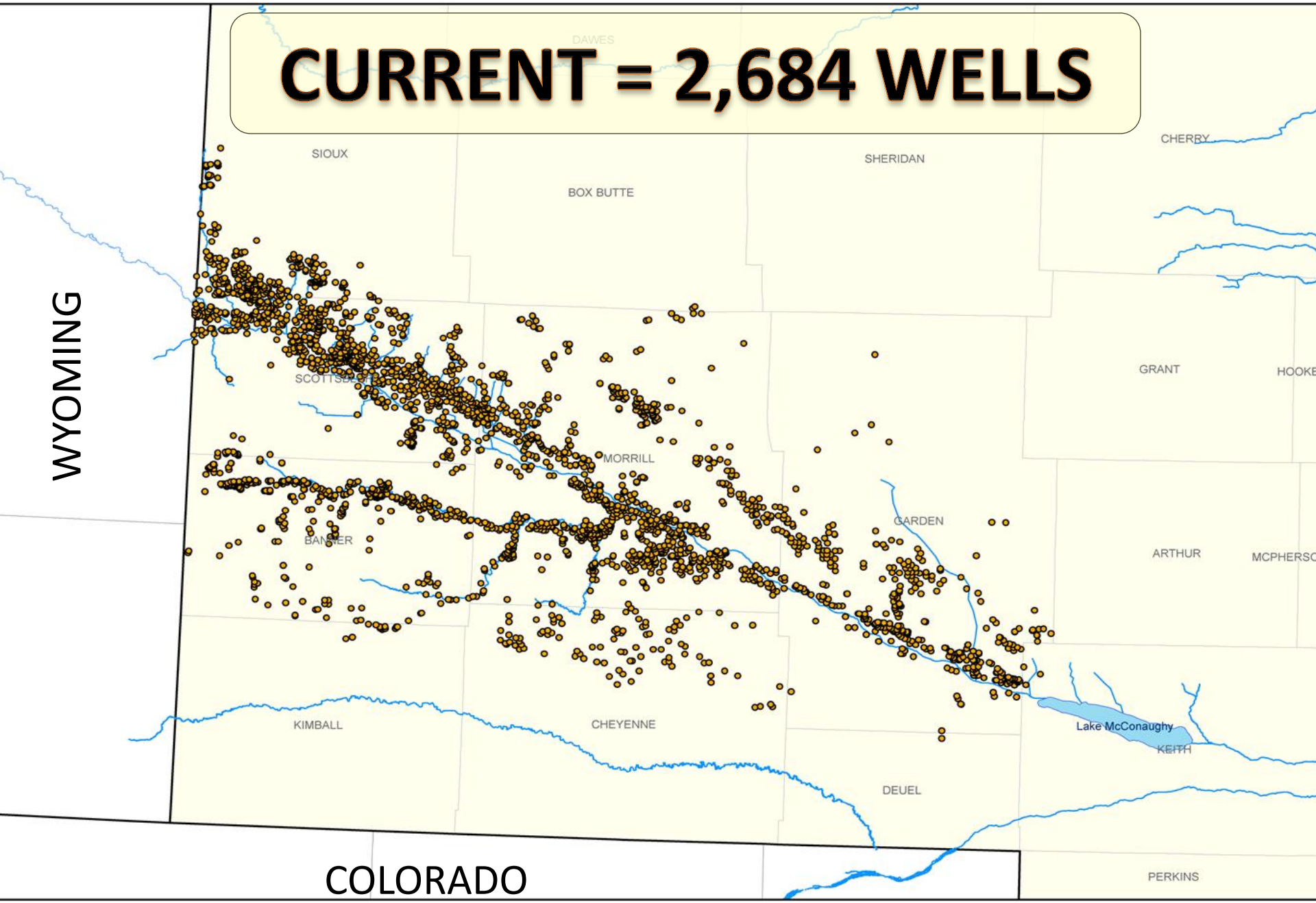
1950 = 26 WELLS



CURRENT = 2,684 WELLS



Impact from Reductions to Return Flows

Less Surface Water Deliveries

Reduced Recharge to Aquifer

Groundwater Aquifer Declines

Lower Return Flows – Platte Basin

Lower Return Flows - Republican Basin

Reduced Recreation Benefits

Less Hydro Generation

Recommendations for Funding

Upstream

- Reduce consumptive use
- Increase water supply

Downstream

- Reduce demand
- Conservation
- Enhanced conjunctive management
- Compensation for injury to water rights

END

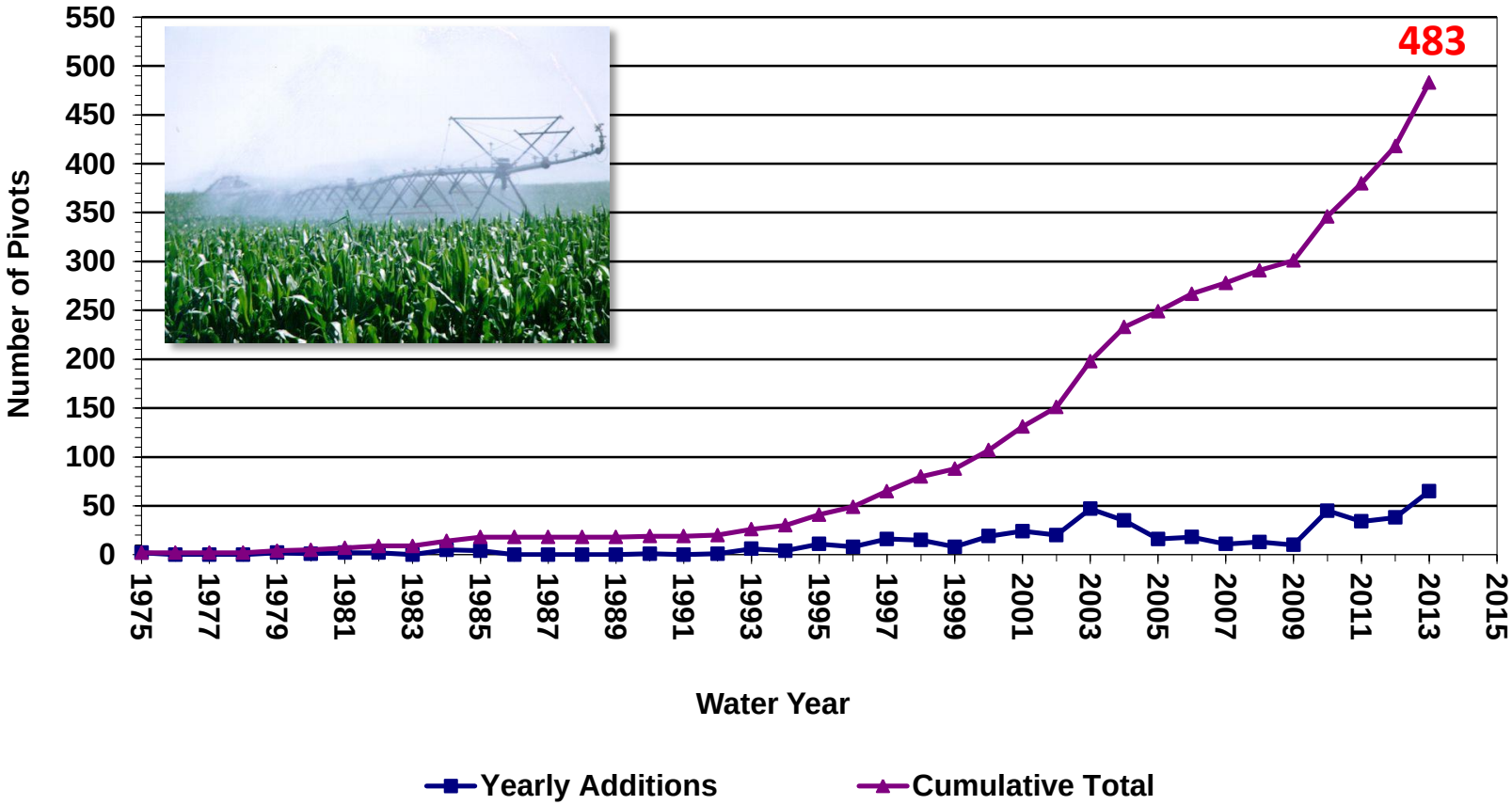
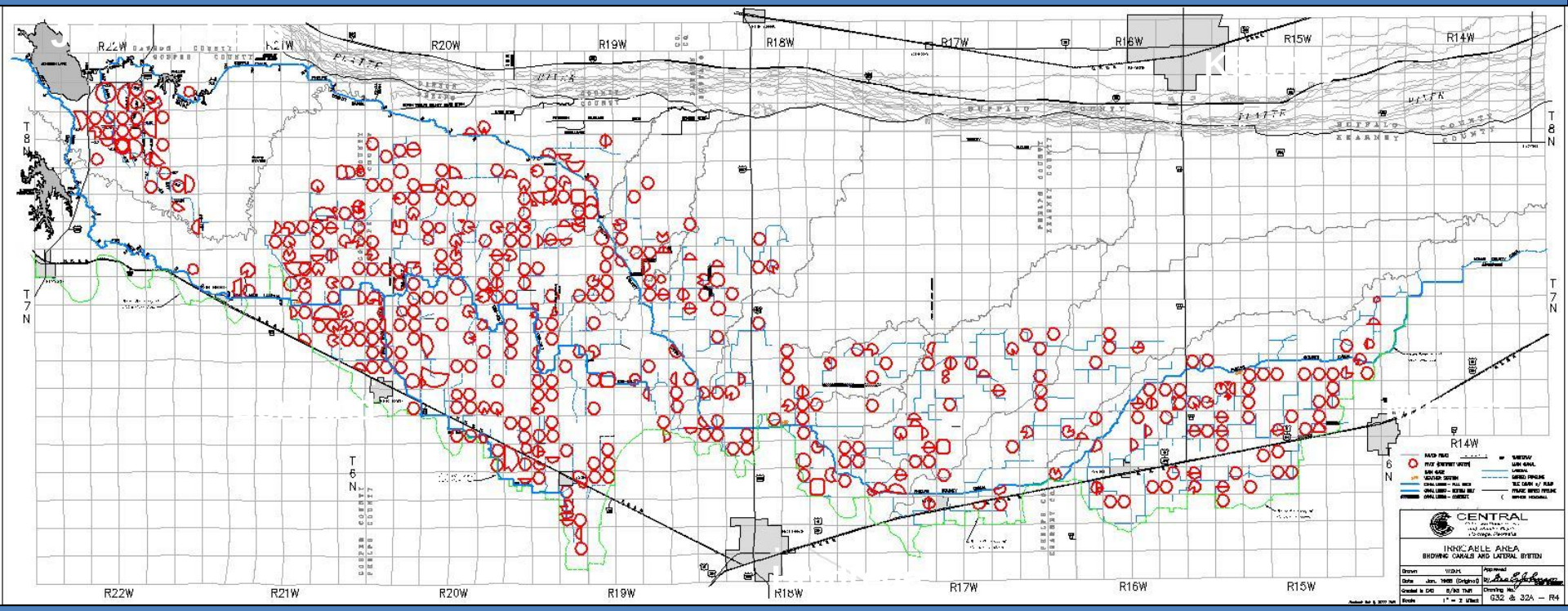
Supplemental Information

Measures Implemented by Central and its Customers to Extend Water Supplies

- More than 480 pivots covering 51% of acres under contract with Central
- Sub-surface drip irrigation installations, gated pipe, surge valves
- Supply Canal system drawdown (including Johnson Lake) at end of irrigation seasons
- All customers' water deliveries measured; meters on more than 90% of customers' turnouts
- Temporary waivers from FWS of winter release requirements
- Incremental Pricing Program to encourage customers to use only the amount of water required by the crop
- Automated, supervisory control of canal system
- Assistance to irrigators installing conservation measures (e.g., conversions to pivot turnouts)
- Demonstration sites for best management practices (BMPs)
- Support automated weather stations and ET stations
- Eliminate use of Elwood Reservoir in water short years

CNPPID Pivot Data

(Number of pivots delivering water from CNPPID irrigation system)



Location of Pivots (483) on Central's System, 2013