

Colorado's Water Plan

Town of New Castle
Trustee Presentation
May 20th

Louis Meyer PE

THE TIME IS RIGHT...

Critical to our *interstate* positions that our *intrastate* house is in order.



Explanation

-  State water plan
-  Planning program but no comprehensive state plan

Governor Hickenlooper's Executive Order What?

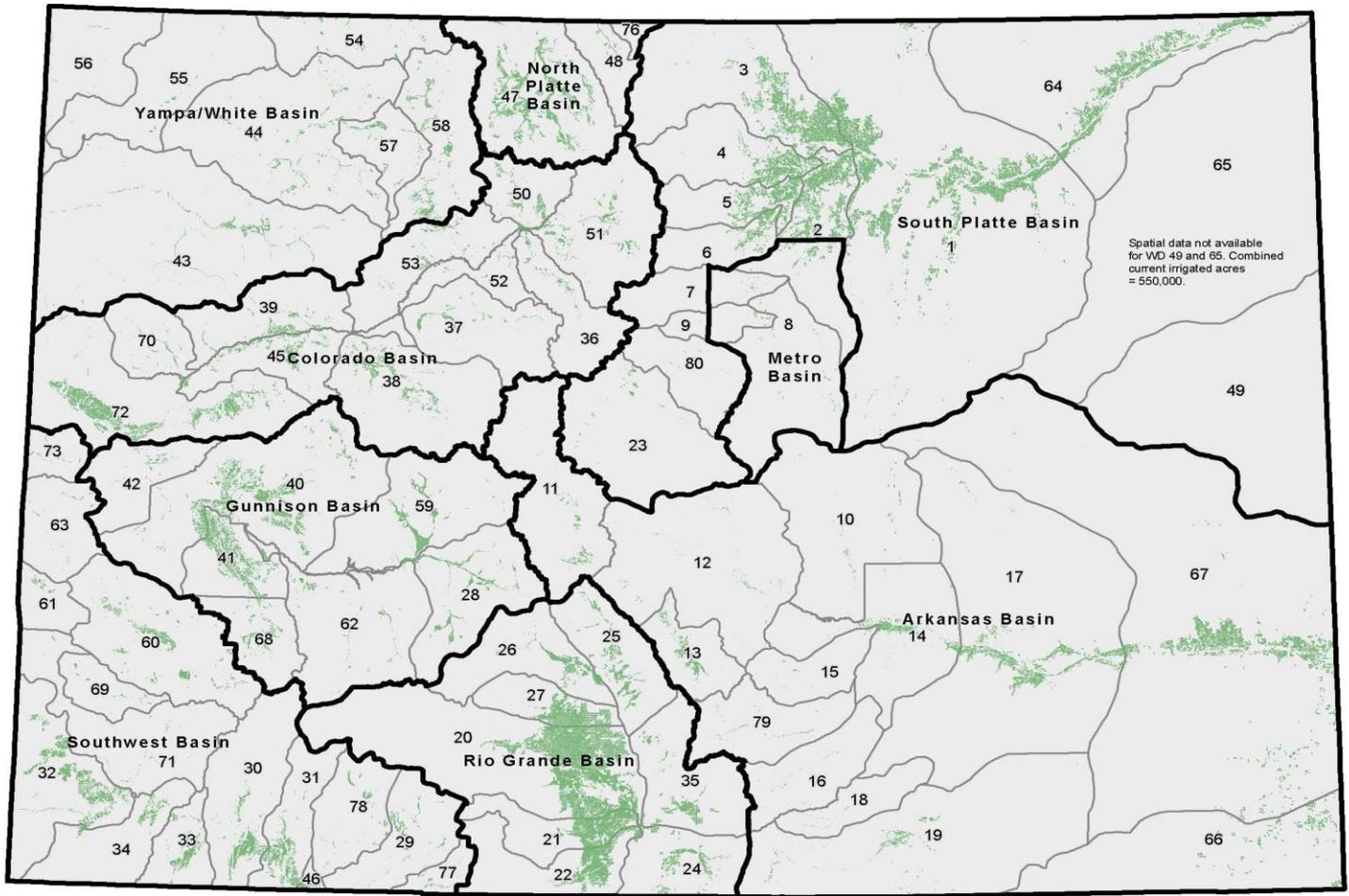
- May of 2013....start
- Colorado Water Conservation Board (CWCB) will coordinate the plan
- Plan will be prepared by the 9 Roundtables
- Draft on CWCB's desk by July 2014
- Plan has to show how we meet the consumptive and non-consumptive Gap
- Planning horizon is 2050

Governor's Executive Order-Why?

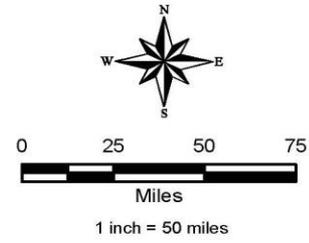
- The “Gap” between future demand and future projects is real....500,000 acre-feet per year
- Population
 - Statewide growth to double from 5 to 10 million
 - Fastest growth will be in the Colorado Basin Counties, more than 240%
 - Garfield County growth projected to be 274%
- Drought
- Transfer of water rights from agriculture is unacceptable
- Water quality impacts are becoming acute
- Interstate issues pressing
- Front Range new supply project

Your Opportunity

- CWP is an opportunity to transition from an individual perspective to a regional perspective.
- This is the Colorado Basins first opportunity to have a basin at large plan!!



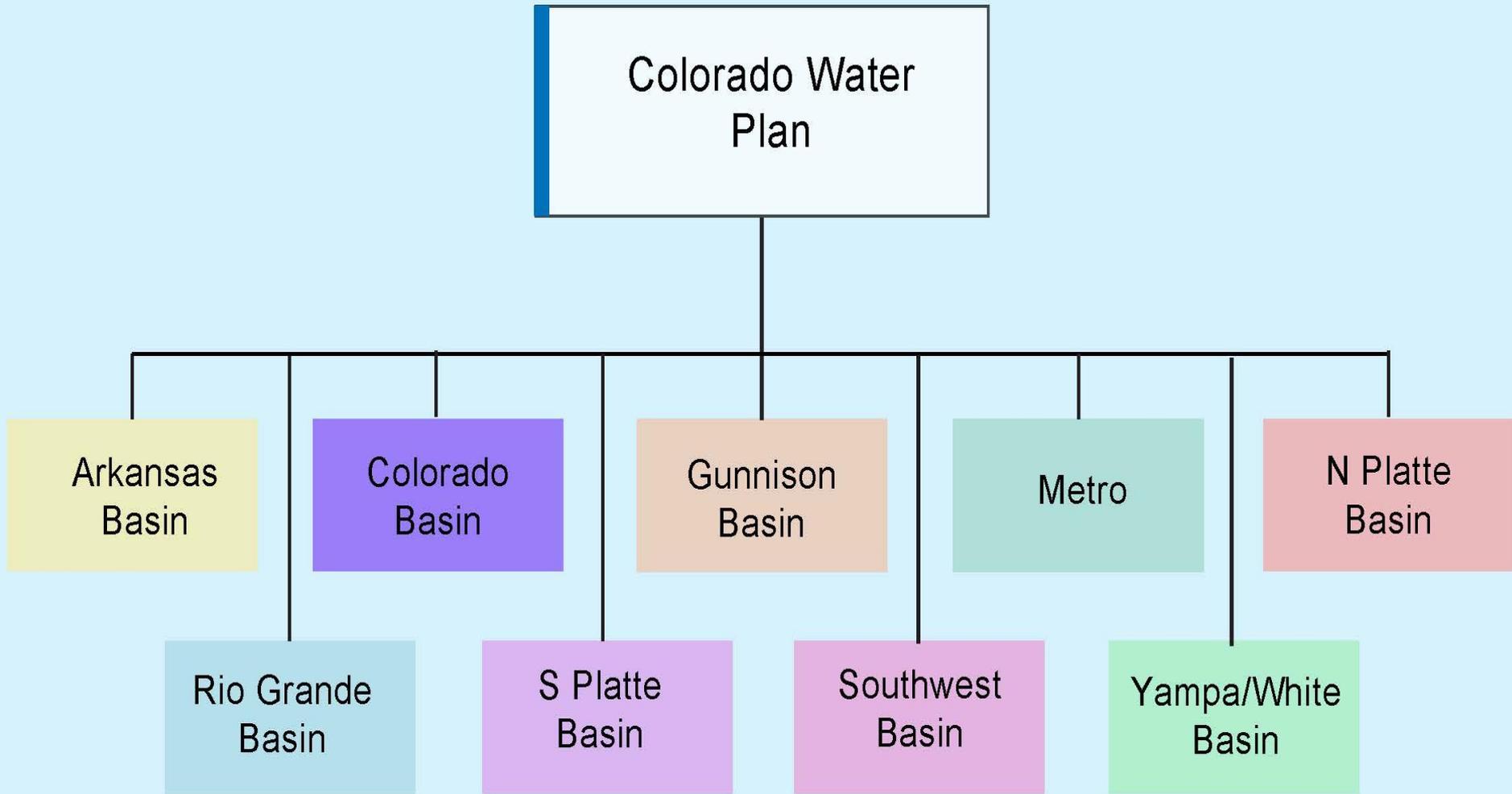
- Legend**
- Irrigated Acreage
 - Water District
 - Basin



**State of Colorado
Current Irrigated Acres
by Water District**



Colorado Water Conservation Board



Yampa/White

North Platte

South Platte

Colorado

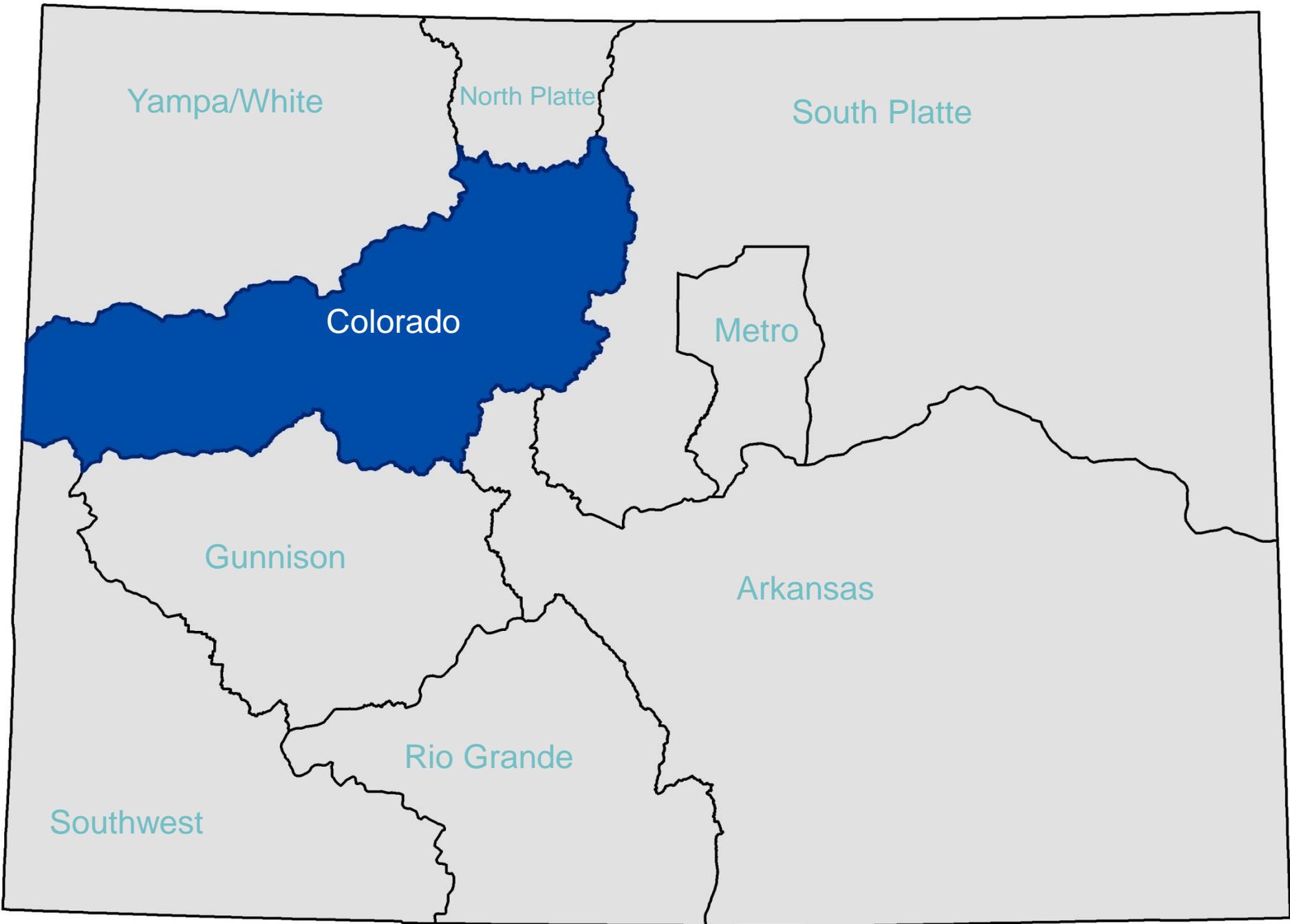
Metro

Gunnison

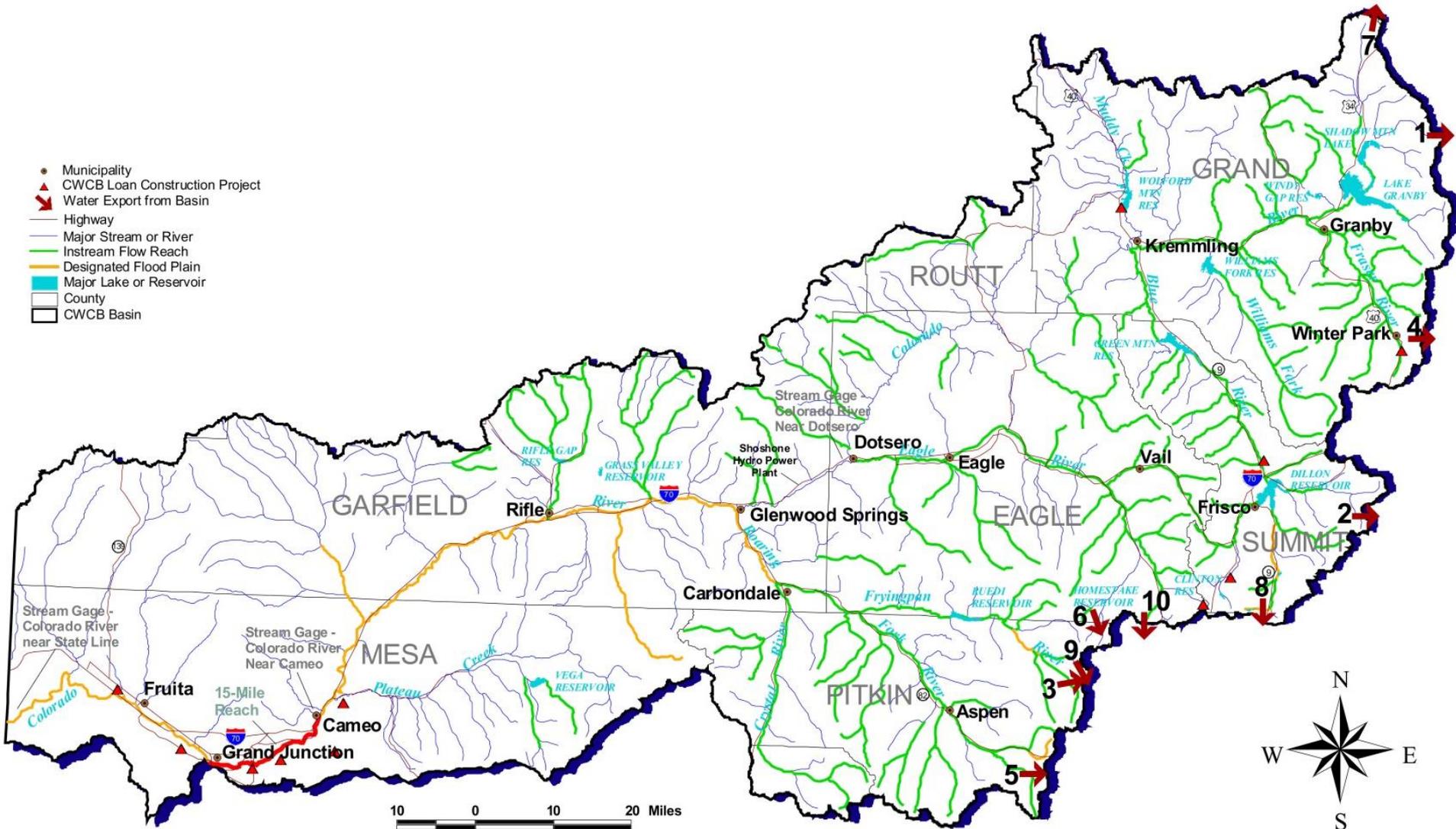
Arkansas

Rio Grande

Southwest

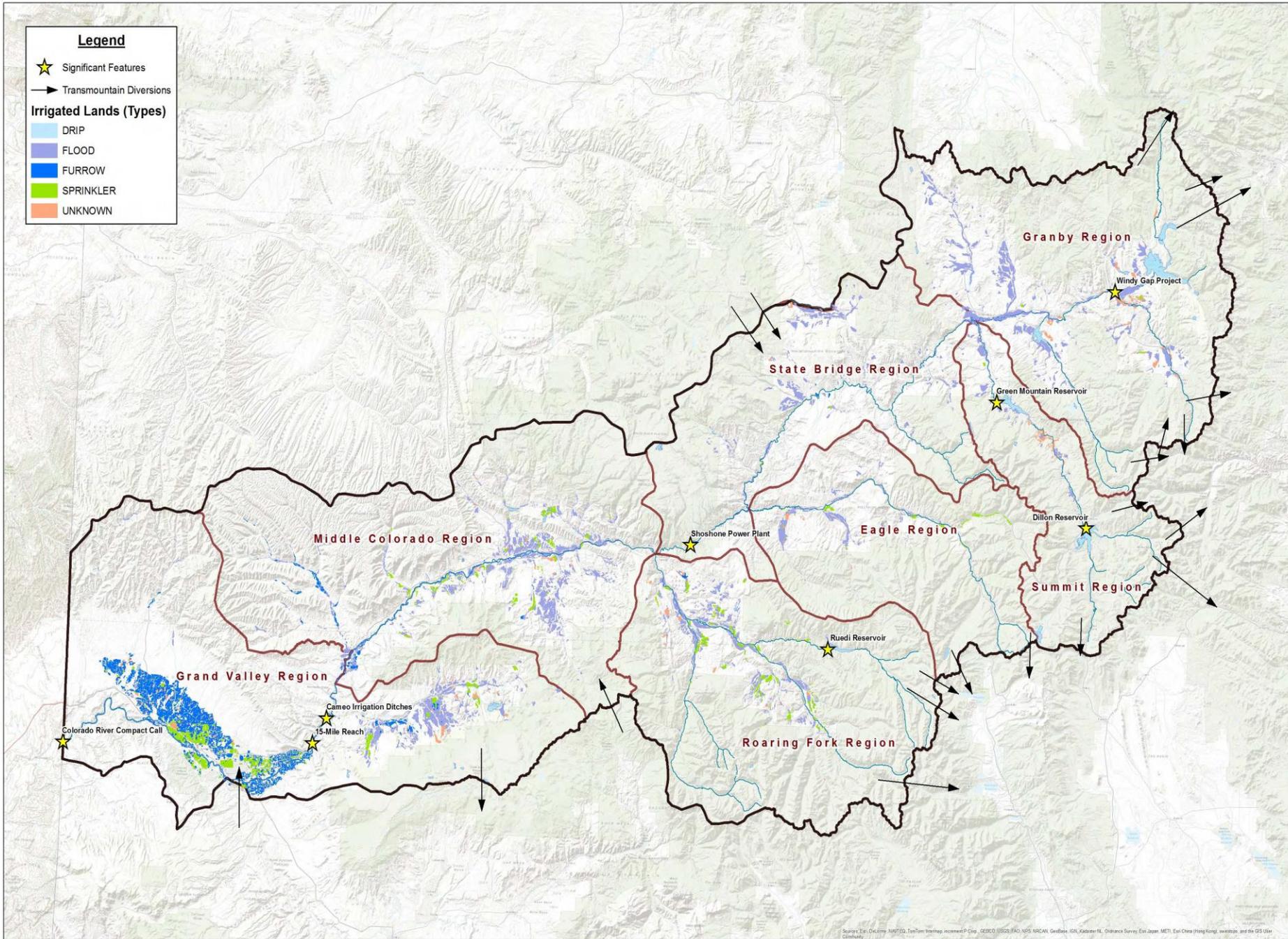


Colorado River Mainstem Basin



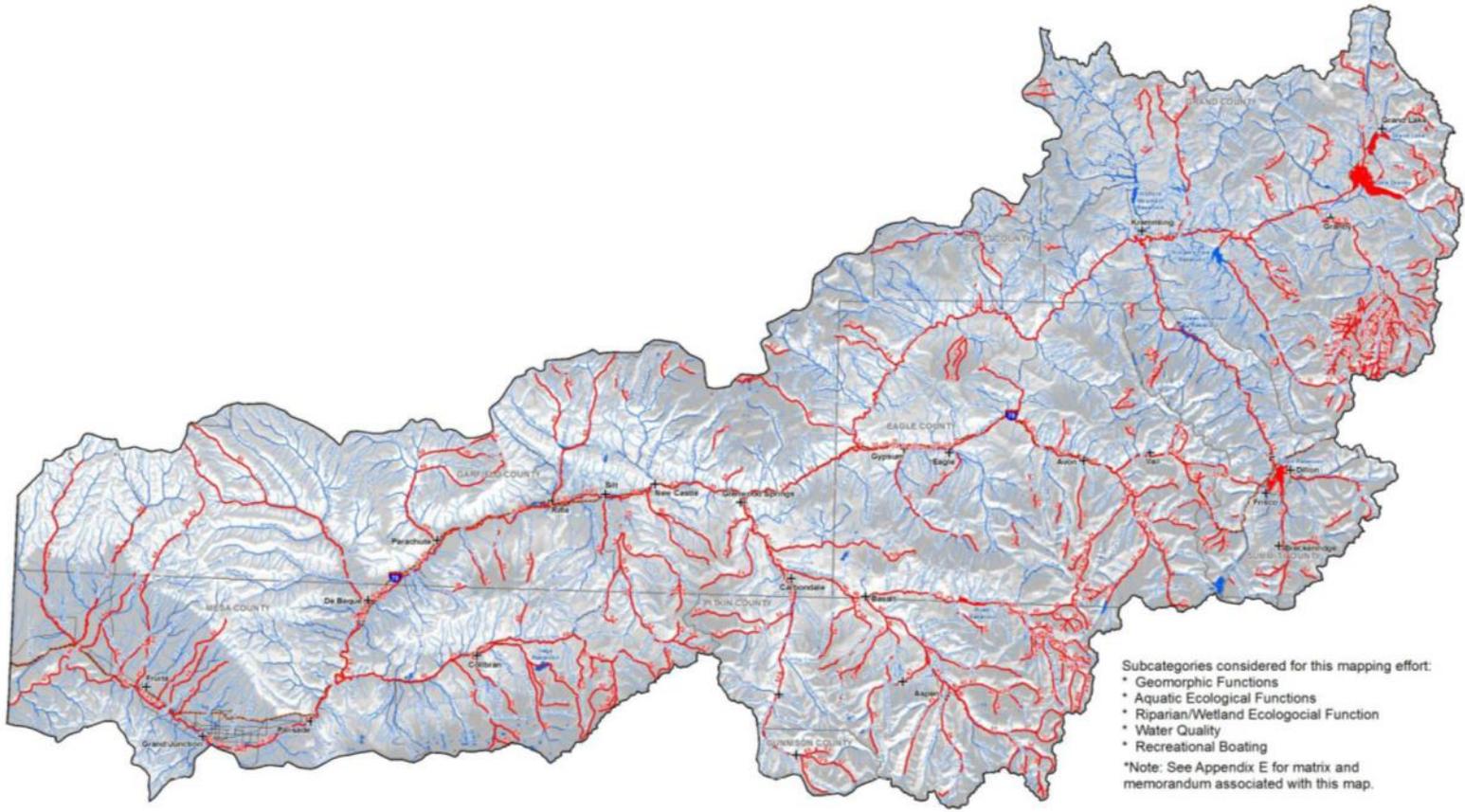
Legend

- ★ Significant Features
- Transmountain Diversions
- Irrigated Lands (Types)**
 - DRIP
 - FLOOD
 - FURROW
 - SPRINKLER
 - UNKNOWN



Source: Esri, DeLorme, NAVTEQ, TerraTime, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, and the GIS User Community

- Legend**
-  Environmental and Recreational Features at Risk
 -  Highways
 -  Roads
 -  Rivers and Streams
 -  Lakes and Reservoirs
 -  Cities and Towns
 -  County Boundary



Subcategories considered for this mapping effort:

- * Geomorphic Functions
- * Aquatic Ecological Functions
- * Riparian/Wetland Ecological Function
- * Water Quality
- * Recreational Boating

*Note: See Appendix E for matrix and memorandum associated with this map.

Figure 3-11
Colorado Basin
Nonconsumptive Needs Assessment
Environmental and Recreational
Features at Risk

DRAFT

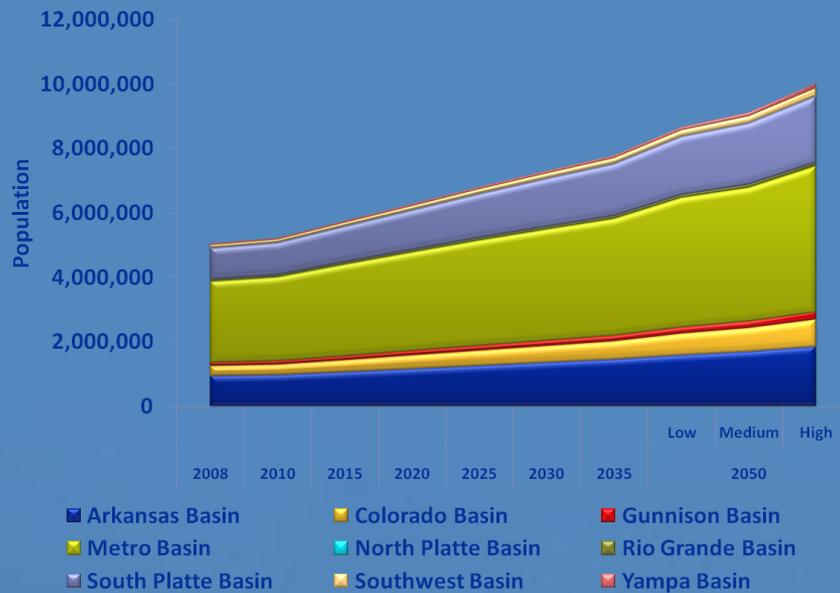
Refer to Appendix B of the NCNA Mapping Report for a complete list of data sources and Appendix D of the Mapping Report for other basin-specific mapping information.



Colorado Basin Population Projections

County	2000 Population	2030 Population	Increase in Population 2000 to 2030	Percent Change 2000 to 2030	Percent Annual Growth Rate
Eagle	43,300	86,900	43,600	101	2.3
Garfield	43,800	119,900	76,100	274	5.2
Grand	12,900	28,800	15,900	123	2.7
Mesa	116,250	220,600	104,350	190	3.8
Pitkin	15,900	27,200	11,300	71	1.8
Summit	25,700	50,400	24,700	96	2.3
TOTAL	248,000	492,600	244,600	99	2.3

Population doubling



Our population is increasing but there's no new water.

Many uses compete for a scarce and limited water supply.

Municipal & Industrial
9%

Agriculture
86%

Environment

Recreation



How can we Fill the Gap?

Already planned projects (Windy Gap firming, Moffat Collection System) +



Conservation



**Ag to Urban
Transfers**



**New Projects
(Colorado Basin
development)**

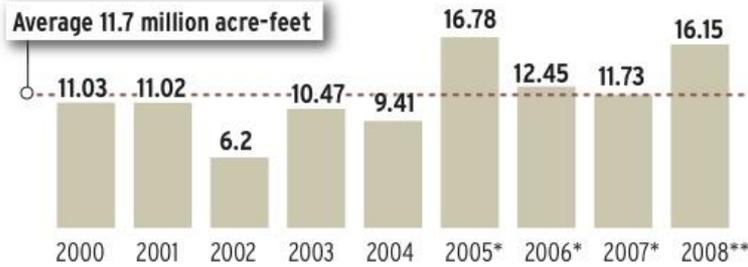
Threats, Challenges, Issues

- Compact Calls
- Transbasin diversions
- Endangered Species
- Growth separation of land use and water planning
- Energy
- Shoshone Call
- Loss of agriculture
- Climate change

Colorado River Compact

Faltering flows

The 1922 Colorado Compact allocated water to seven states and Mexico assuming 16.5 million acre-feet flowed in the river on average, with the upper and lower basins getting 7.5 million acre-feet each and Mexico 1.5 million acre-feet. But tree-ring studies have shown 1922 was an unusually wet year. Here are the river flows recorded this decade in million acre-feet :

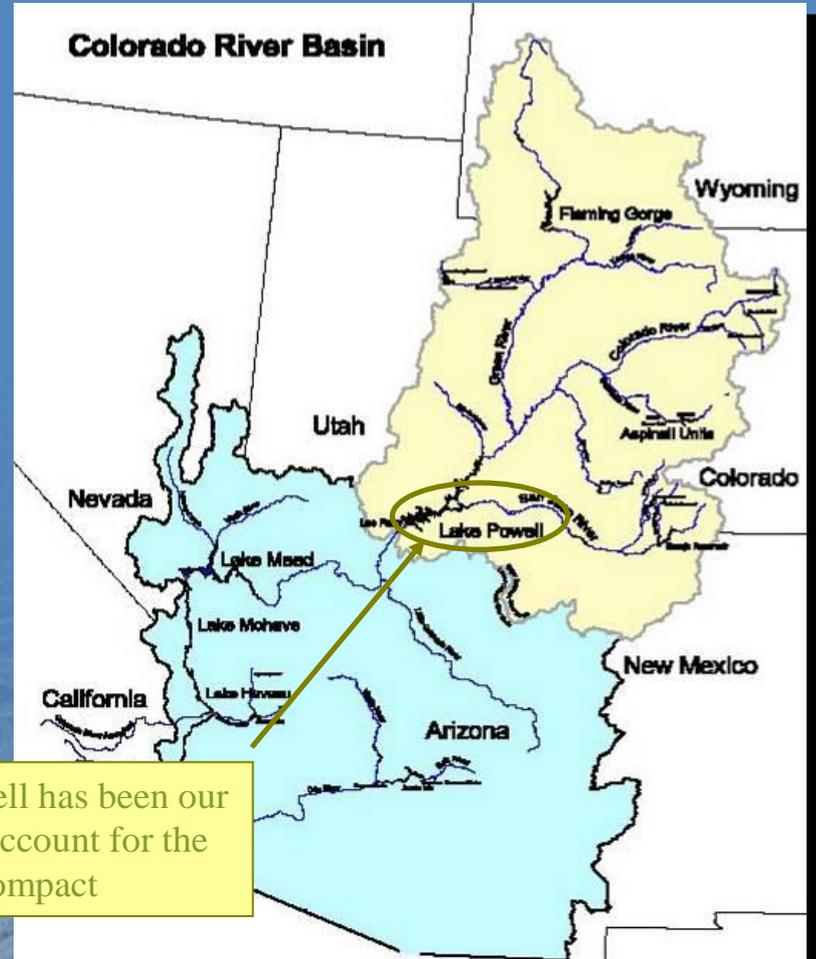


*Preliminary measurements that need to be verified
 **Incomplete water year, provisional estimate

Note: An acre-foot of water is the amount it takes to cover an acre with one foot of water, or about 326,000 gallons, enough to supply one to two households for a year.

Source: U.S. Bureau of Reclamation

The Salt Lake Tribune



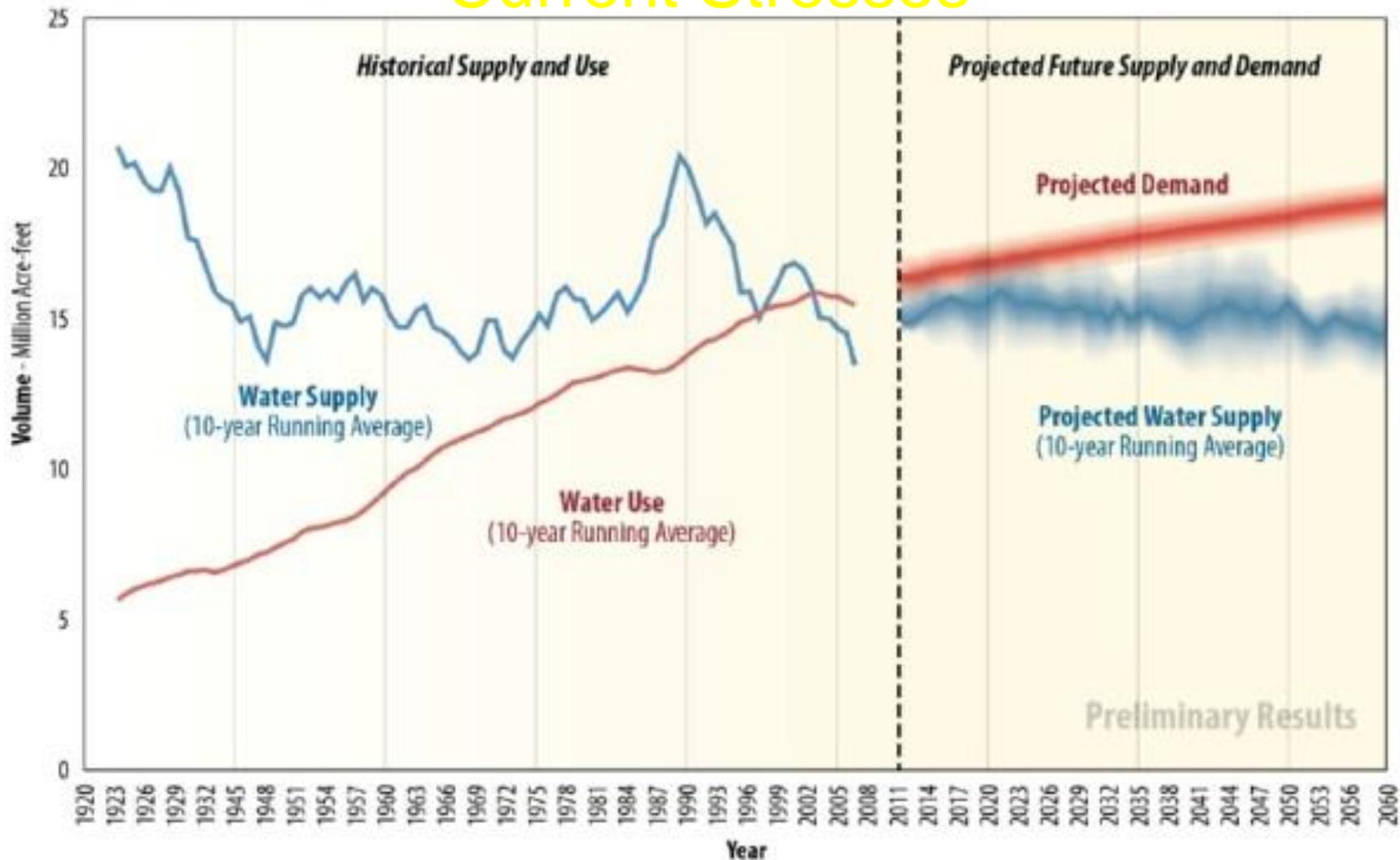
Lake Powell has been our savings account for the compact

RECLAMATION
Managing Water in the West
Colorado River Basin
Water Supply and Demand Study
Executive Summary

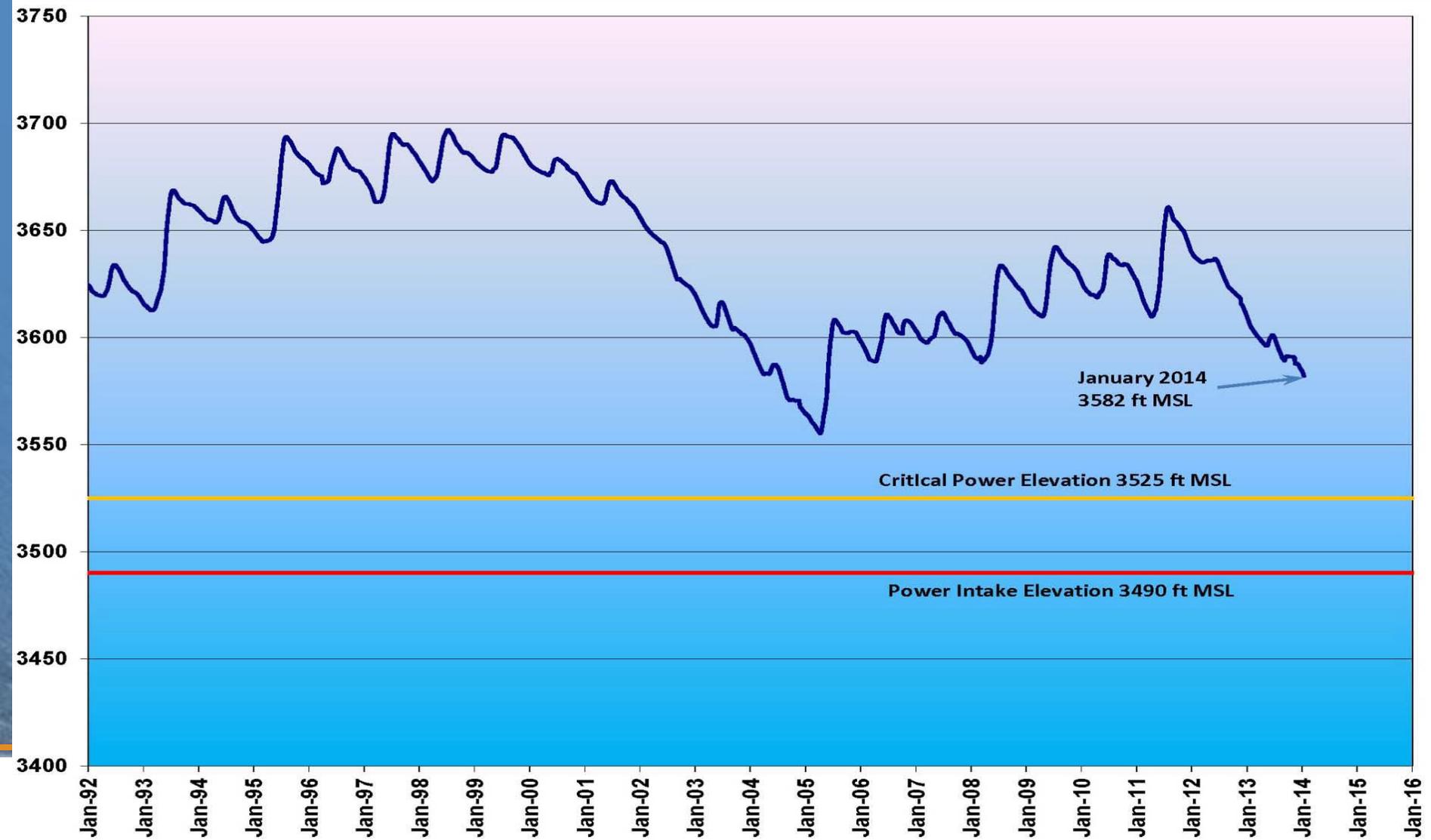
“the long term
projected imbalance in future supply and
demand is about 3.2 maf by 2060.”

Imbalances between Supply and Demand (US BOR) - Exacerbate Current Stresses

Historical Supply and Use and Projected Future Colorado River Basin Water Supply and Demand



Lake Powell Elevations





June 29, 2002

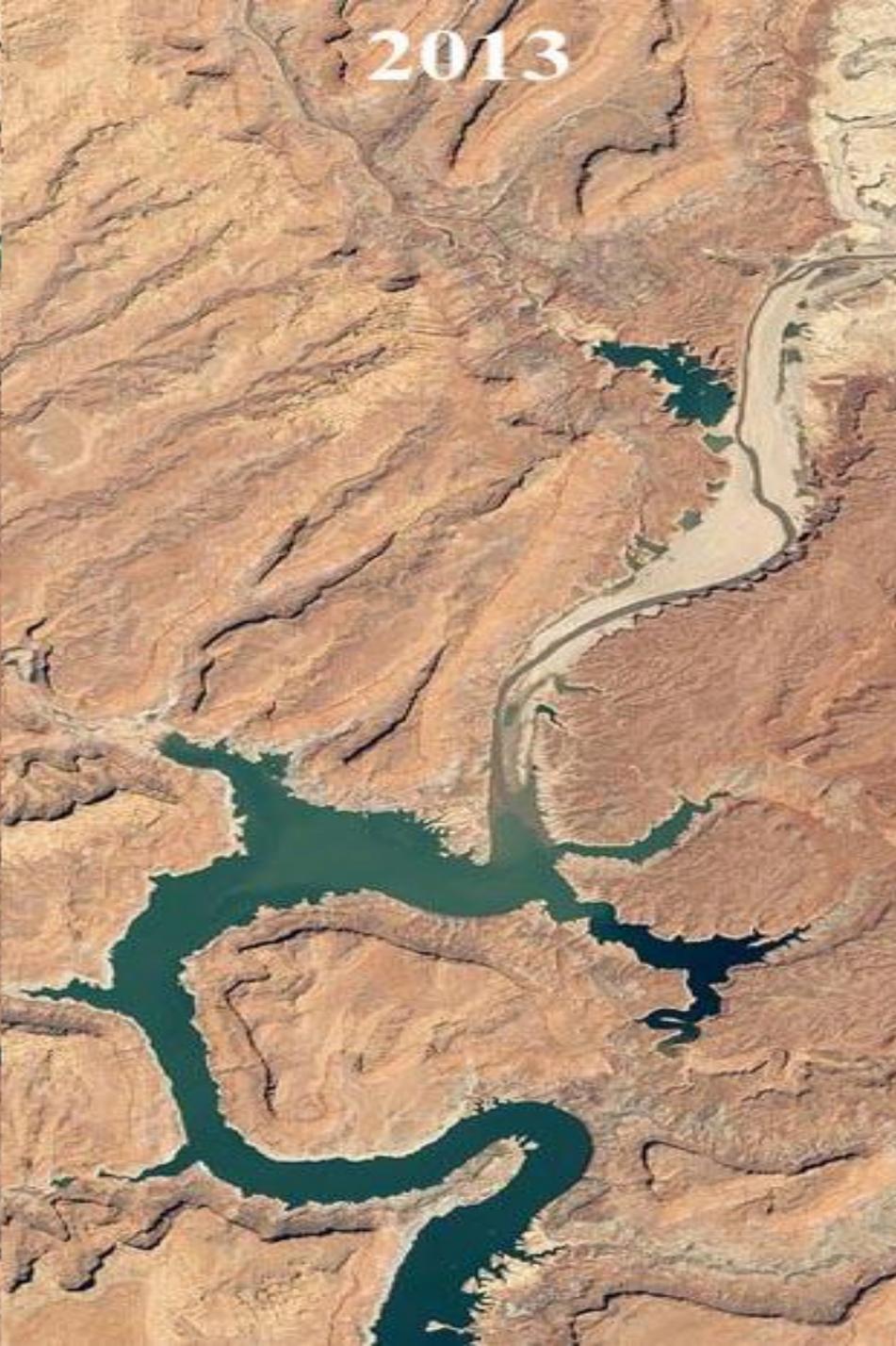


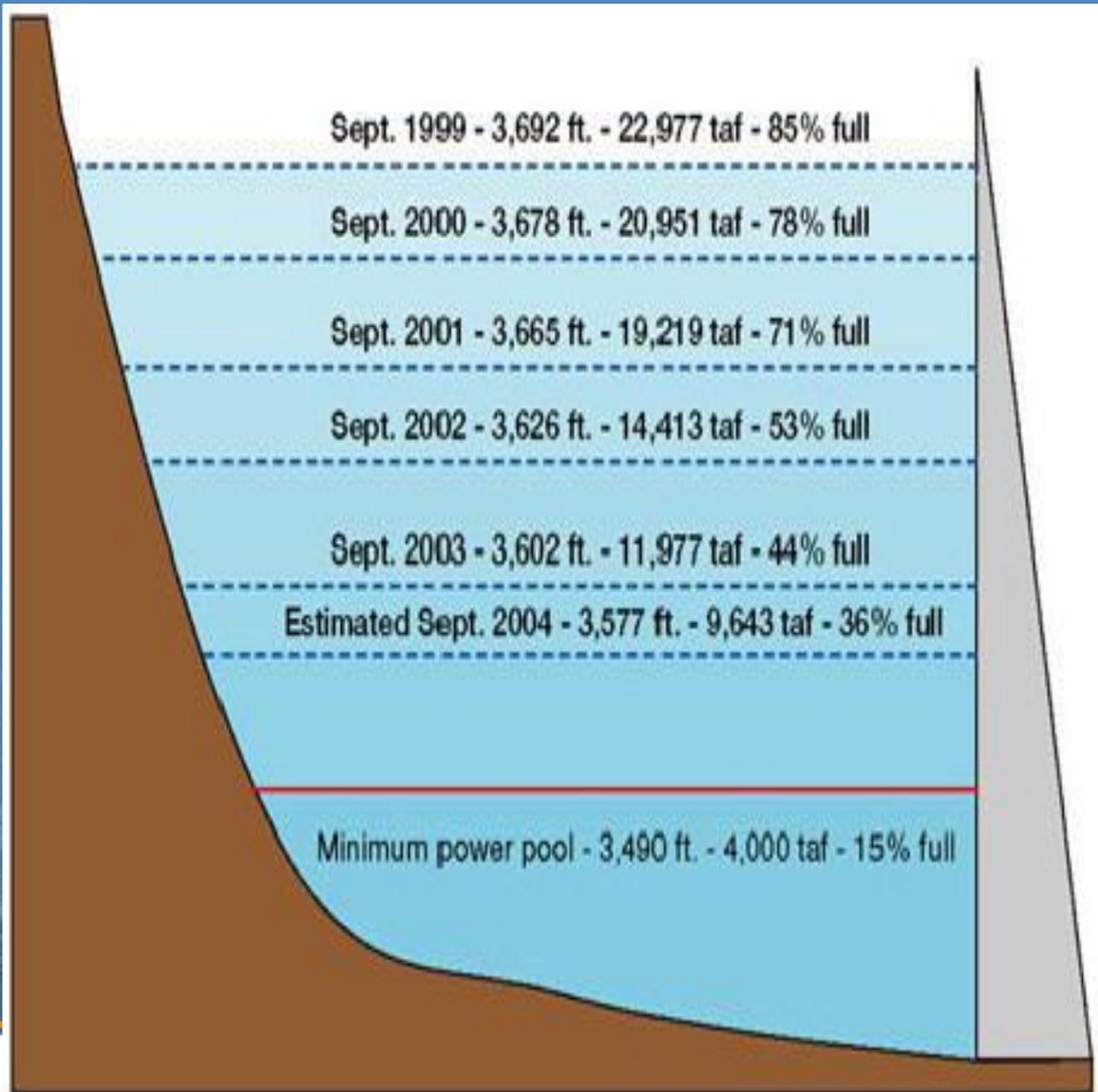
December 23, 2003

1999



2013





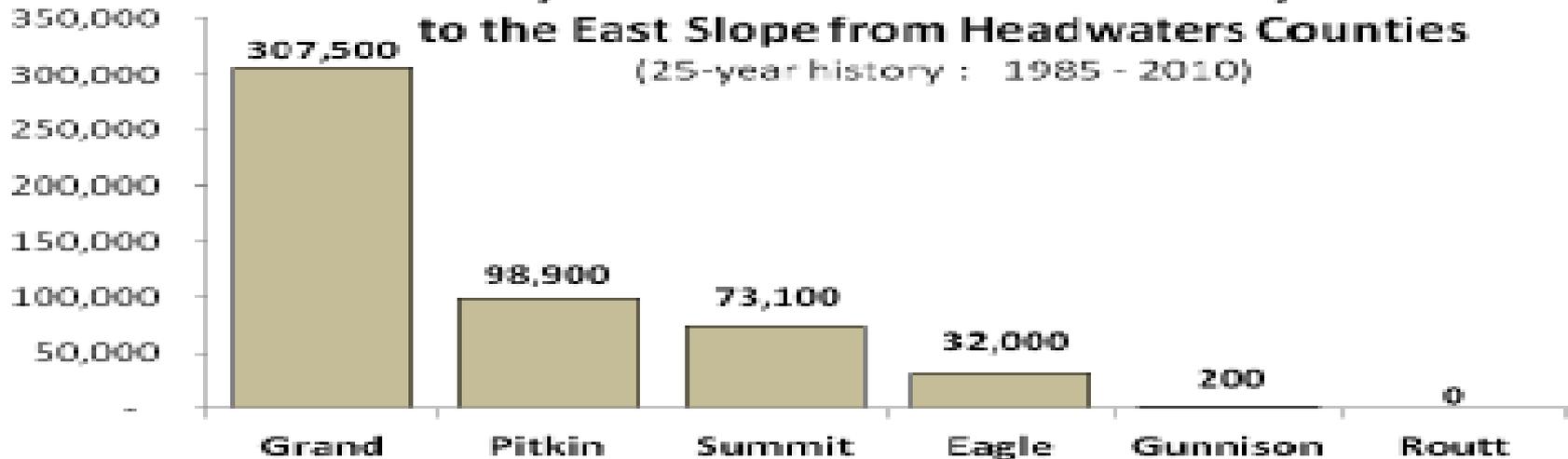




No Water to support other basins

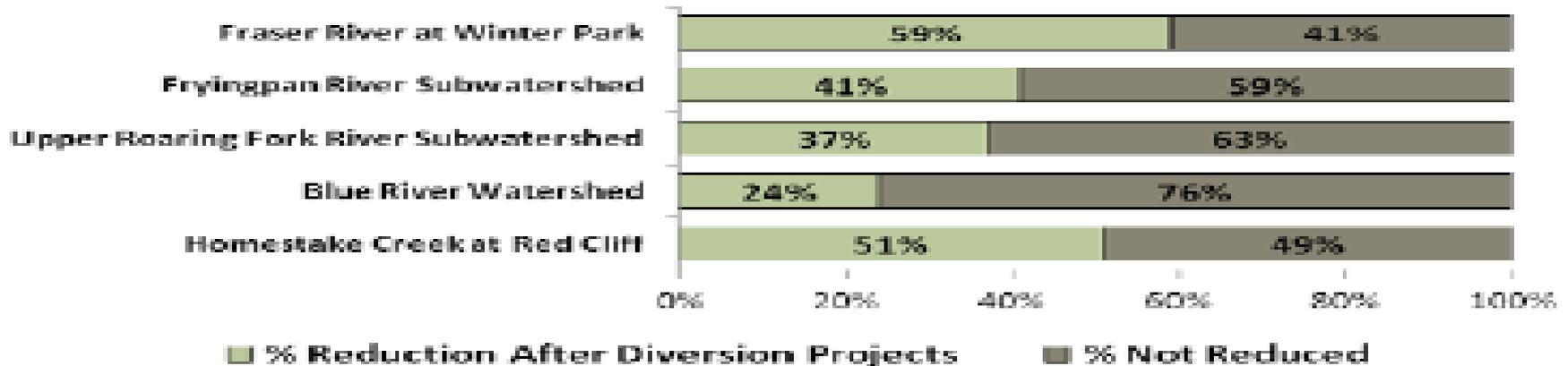
- Colorado Basin already has 100,000 AFY Ag shortage
- SWSI our basin will lose addl 80,000 acres
- Water Providers vulnerable to drought and compact call
- BOR study indicates shortage of 3.2 Million AFY with current hydrology (Lake Powell and Mead)
- 64 critical reaches already (headwater streams impaired)
- Uncertain future
- Risk is non starter
- Firming and IPP's and growing into existing water rights will divert addl 150,000 AFY
- Water Quality Problems in middle and lower basin
- We already contribute 400,000 – 600,000 AFY

**Estimated Average Annual Acre-Feet Diverted
by Transmountain Diversion Projects
to the East Slope from Headwaters Counties
(25-year history : 1985 - 2010)**



Source: Colorado Division of Water Resources, CDSS Data Base

**% Streamflow Reductions Principally Attributable to
Transmountain Diversion Projects**

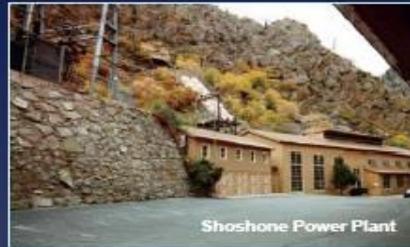


Sources vary by location. See full text and endnotes.

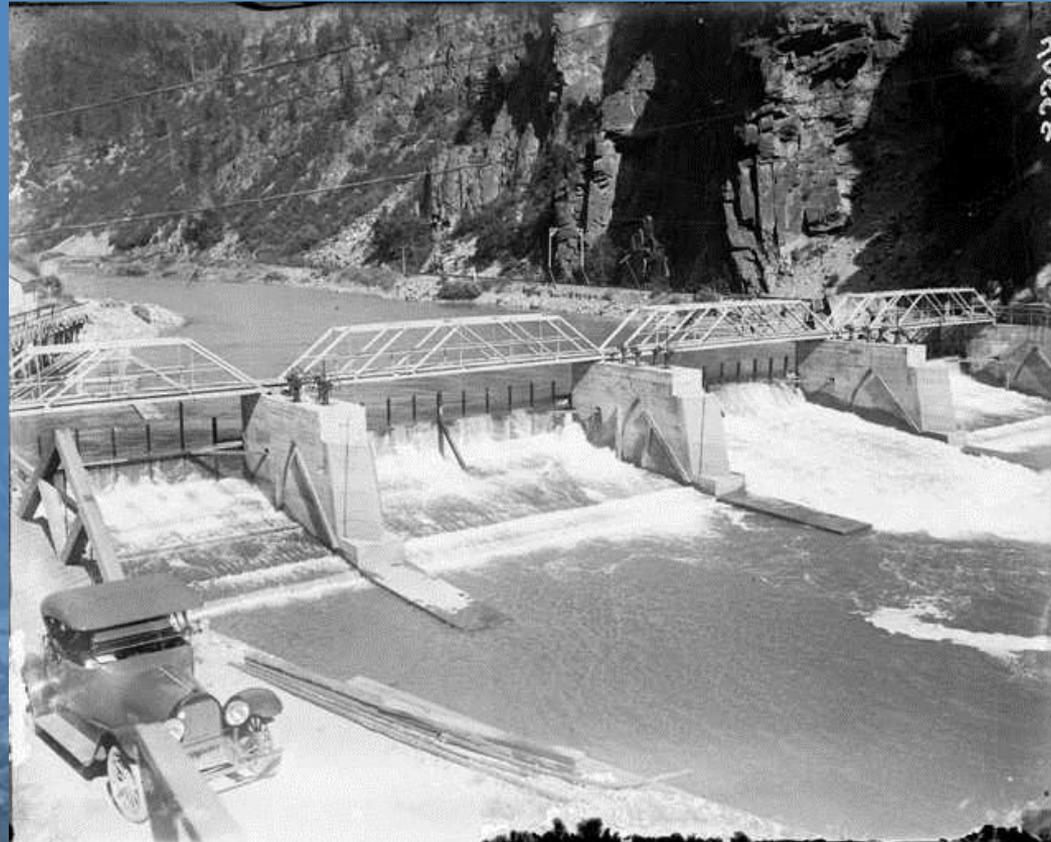
Colorado Basin Roundtable tasks:

- Assess internal needs & identify projects to meet them
- Negotiate how to meet state needs.

Colorado River – Major Calls



Shoshone



Roundtable Themes

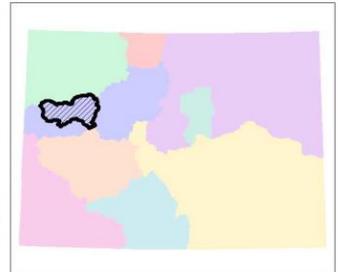
- One voice
- Local control
- Land use - connection with water use
- Healthy rivers, streams and lakes
- Multi-purpose projects
- Safe Drinking Water
- The importance of saving agriculture
- No water to support other basins
- Protect Mainstem water rights operations
- Regional cooperation
- Conservation equally shared by all M & I and Agriculture
- Planning must go beyond 2050
- Improve Colorado Water Law and Courts

Colorado River BIP Middle Colorado River Basin

IPP Discussion Map

Legend

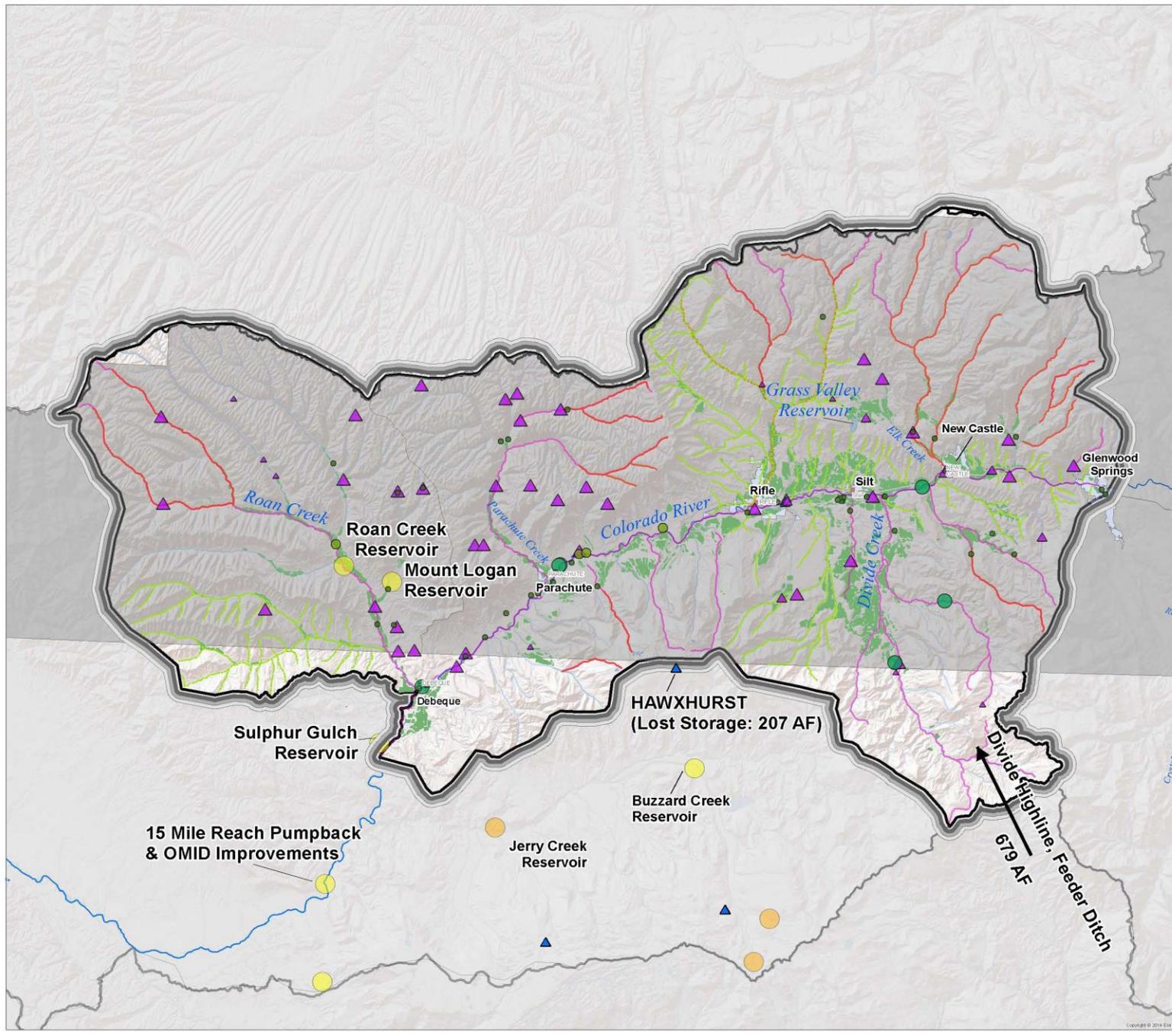
-  Restricted Reservoir
-  Transmountain Diversions
-  10825 Water Supply Alternatives
-  Potential Projects
-  303d Impaired Streams
-  Existing Instream Flows
-  NCNA Identified Streams
-  Irrigated Lands
-  Municipal Water Providers
-  Water Districts
- Conditional Diversions (CFS)**
-  5 - 50 CFS
-  51 - 100 CFS
-  > 100 CFS
- Conditional Reservoirs (AF)**
-  25 - 50 AF
-  51 - 100 AF
-  > 100 AF



Notes:



Date: February 21, 2014-BLL
 Project: WAD301/CM Core 13W
 Data Source: CWRB, COGS, ESRI
 File: C01301314-450_Colorado_Implementation\Map_Dept_GSD04_ML021
 Regional_IPP_Discussion_Map\Middle_Colorado_Region_021414.mxd



Middle Colorado River Issues

- Ruedi Reservoir
- Water Quality
 - Clean Water Act
 - Endangered Species Act
 - Safe Drinking Water Act [endocrine disruptors (over 82,000 man-made chemicals); total dissolved solids (TDS); and Salinity]
- Energy needs water (conditional water rights)
- The importance of the Two Main stem Calls
 - Shoshone Call (Winter Season)
 - Cameo Call (Irrigation Season)
- The importance of Redundancy/Multiple supplies/Off Mainstem
- Flows will diminish in the Colorado River as upstream water users grow into existing supplies and Trans-mountain diverters firm up water rights
 - Current (Colorado Basin) demand 62,000 acre-feet which can increase to ~120,000- 200,000 acre-feet in the future

Middle Colorado River Issues

- Pre 22 water rights
- More regional cooperation is needed
- Middle Colorado River Water Council
- A focus on conservation will increase
- Prepare for Compact Call and Drought
- Energy Development and Conditional Water Rights
- Where will the new growth go!
- Agriculture
 - 268,000 acres of agriculture in the Colorado River Basin
 - At risk for losing major acres of agriculture

Thank You

- This is your plan and project....we want to hear from You! You are driving this plan!