

# Water and Natural Resources Committee

## Middle Rio Grande Water Use and Compliance with the Rio Grande Compact

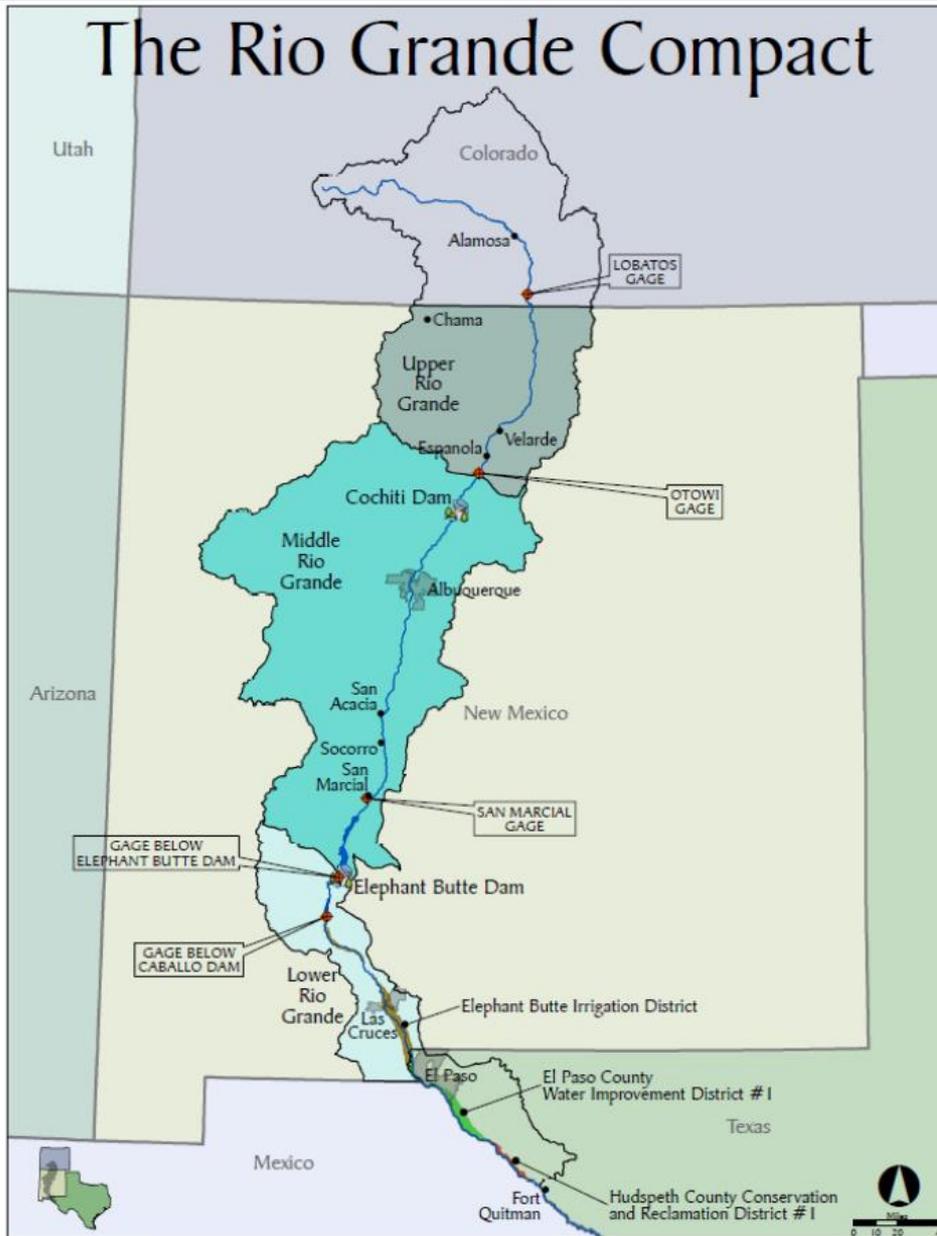
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Office of the State Engineer

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Interstate Stream Commission

July 26, 2022



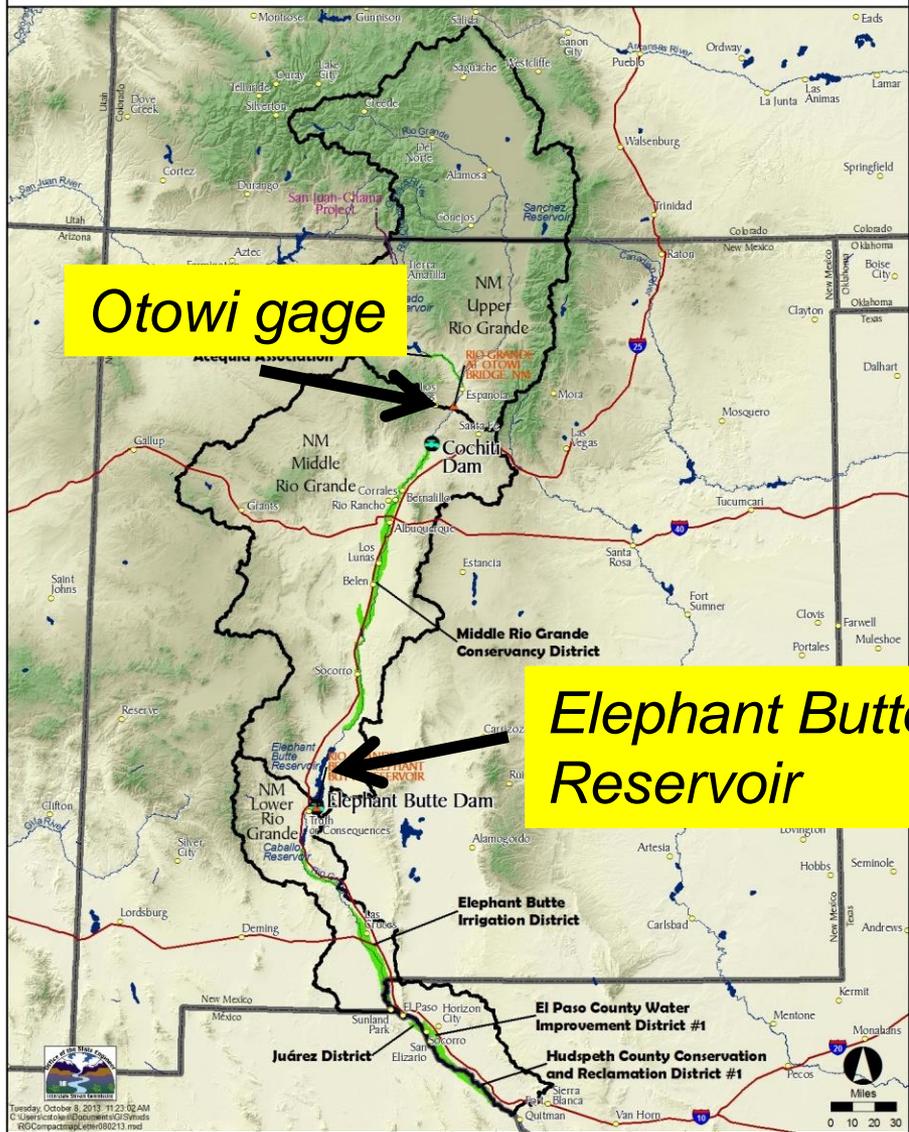
# The Rio Grande Compact



## Upper Rio Grande Basin

- Headwaters of Rio Grande in Colorado to Fort Quitman, Texas
- The basin includes parts of 3 states and two countries

# Upper Rio Grande Basin

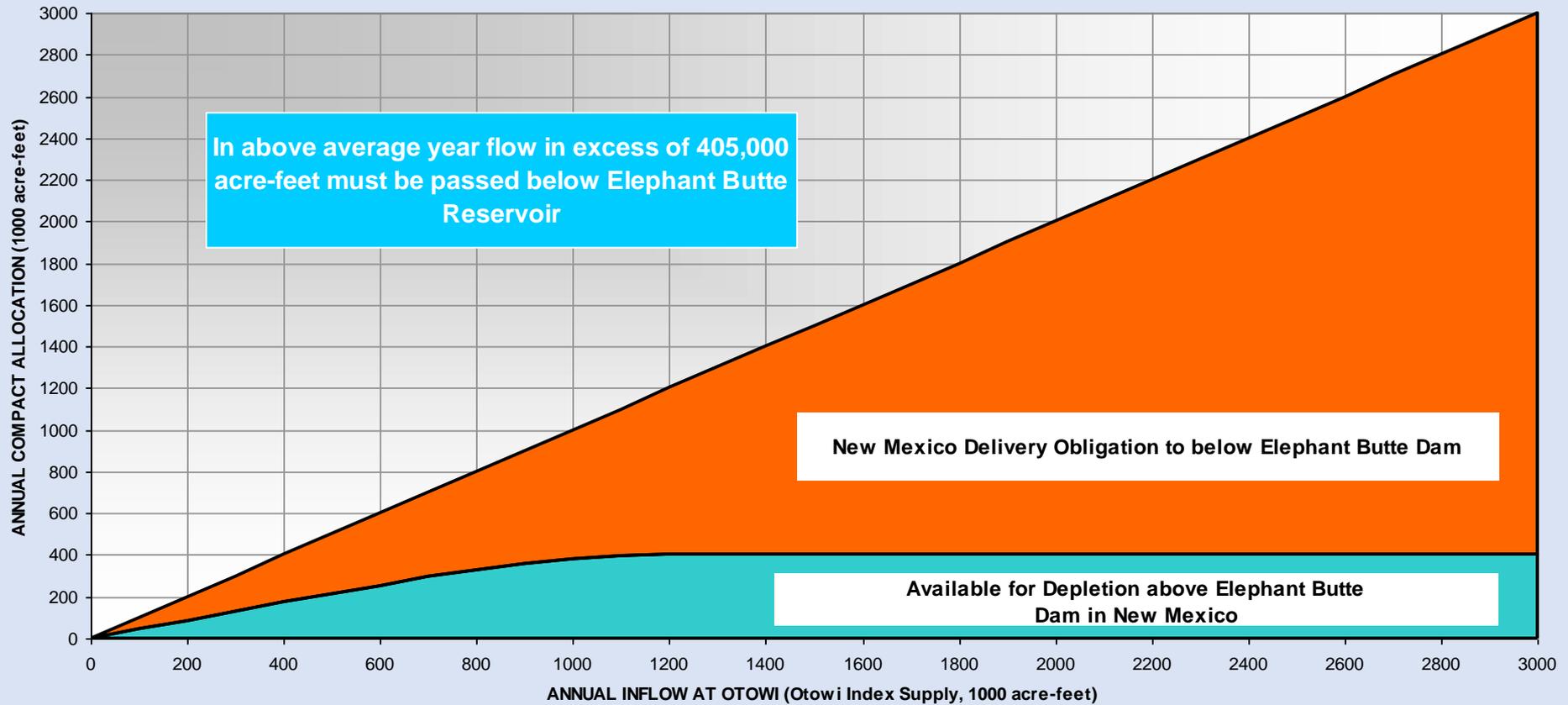


## New Mexico is Required to Deliver Water to Texas at Elephant Butte Reservoir (the Rio Grande Project):

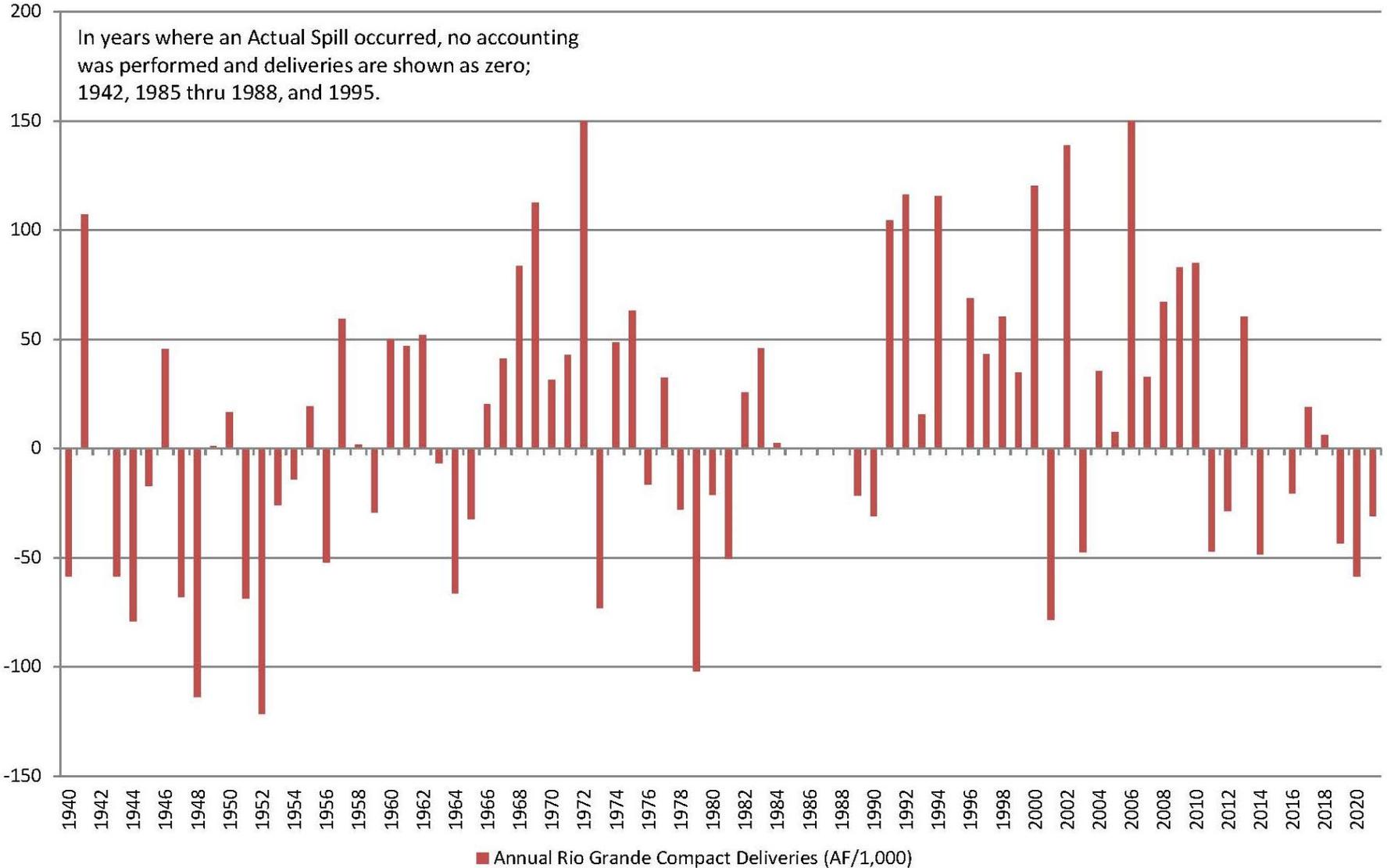
- If depletions change between the Stateline with Colorado and Otowi Bridge, modify Middle Rio Grande allocation
- An explicit Middle Rio Grande allocation and delivery
- 57% of the Rio Grande Project Supply used in New Mexico

# MIDDLE RIO GRANDE ALLOCATION

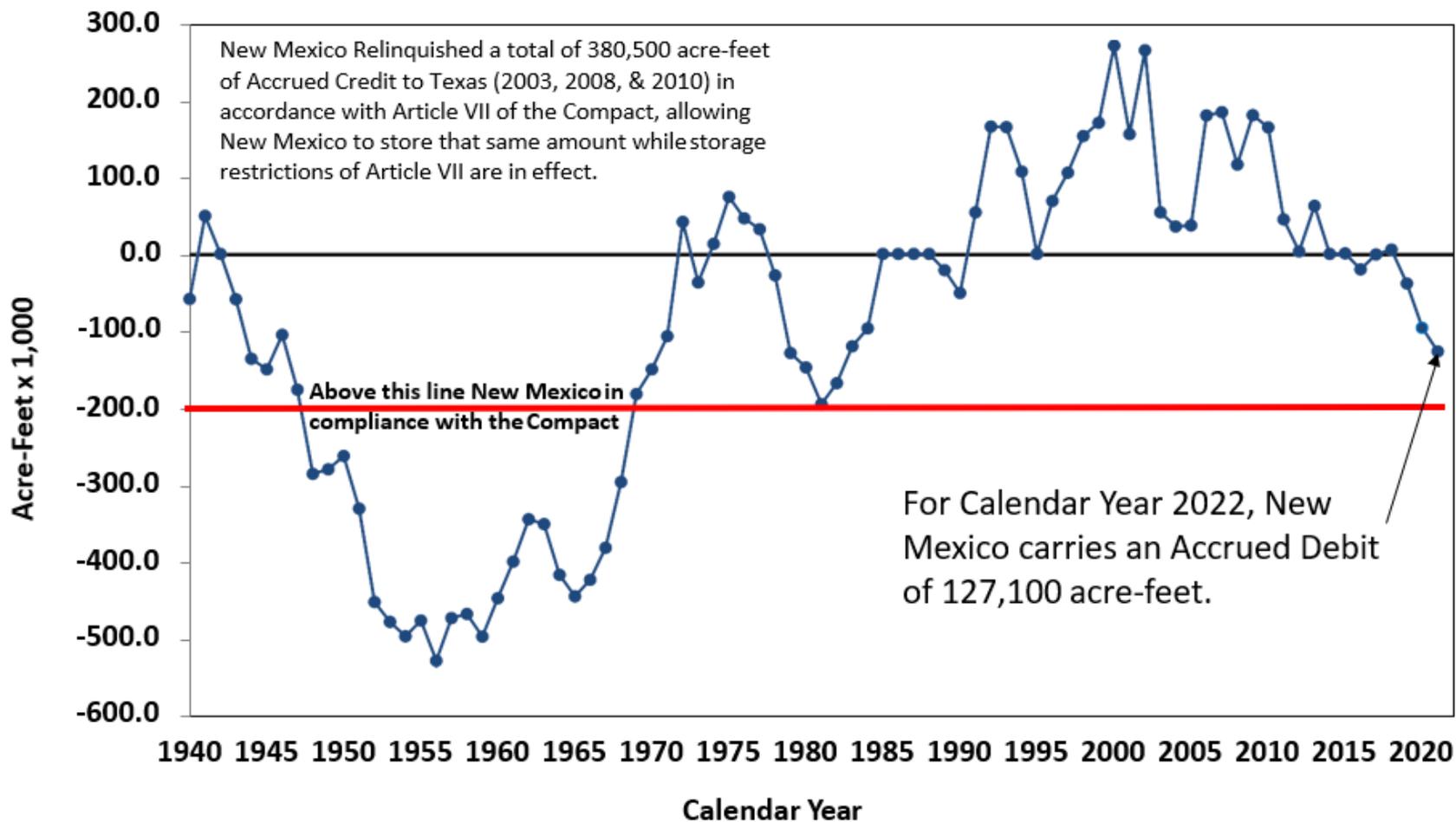
ANNUAL COMPACT ALLOCATION CHART



# Annual Rio Grande Compact Delivery Departure 1940-2021

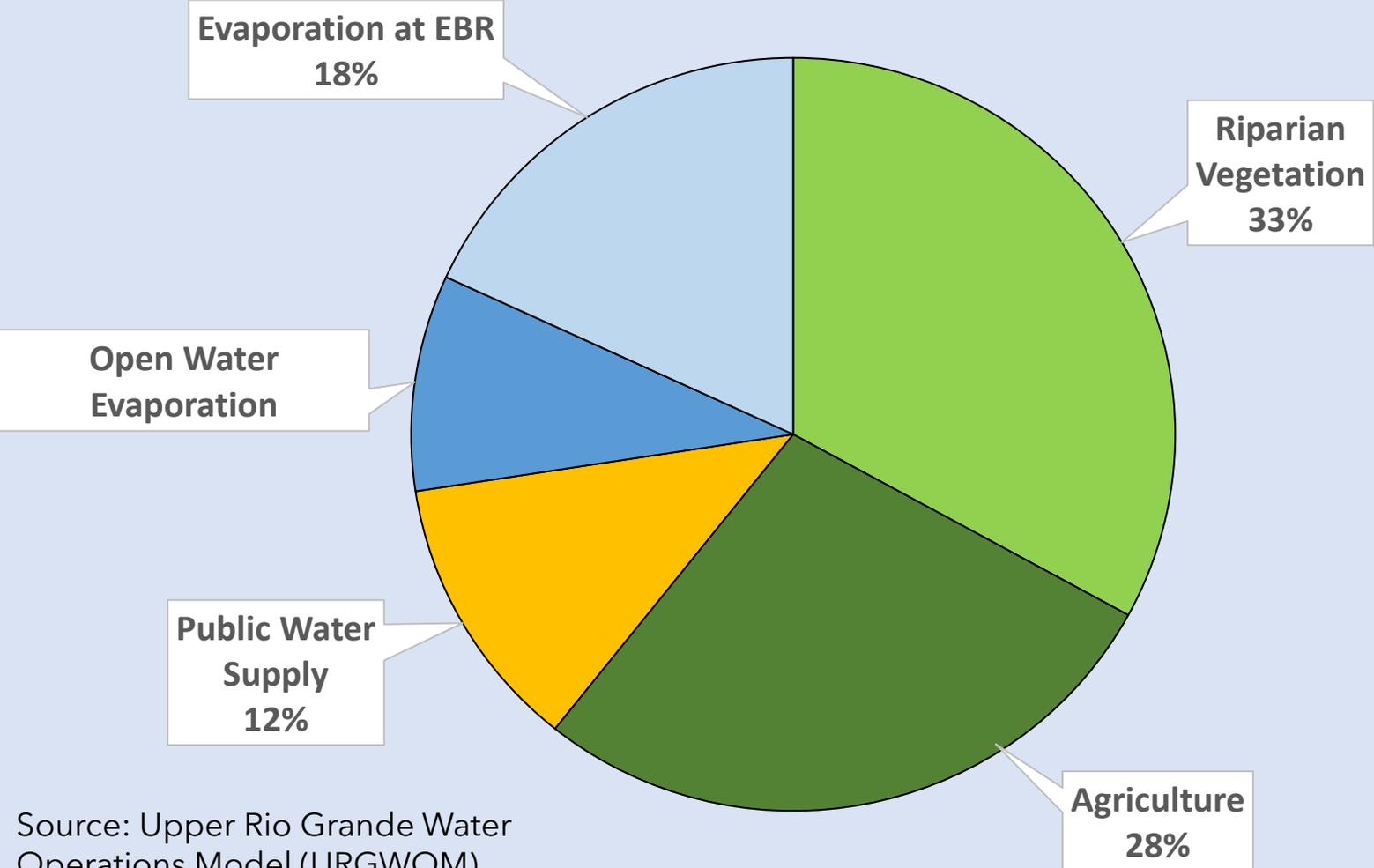


## Rio Grande Compact Cumulative Departures 1940 to 2021



Notes: 1) The Compact Commission has not approved annual accounting since 2011. Values in the chart since that time are those calculated and proposed by the New Mexico Engineer Adviser as described in annual reports to the Compact Commission.

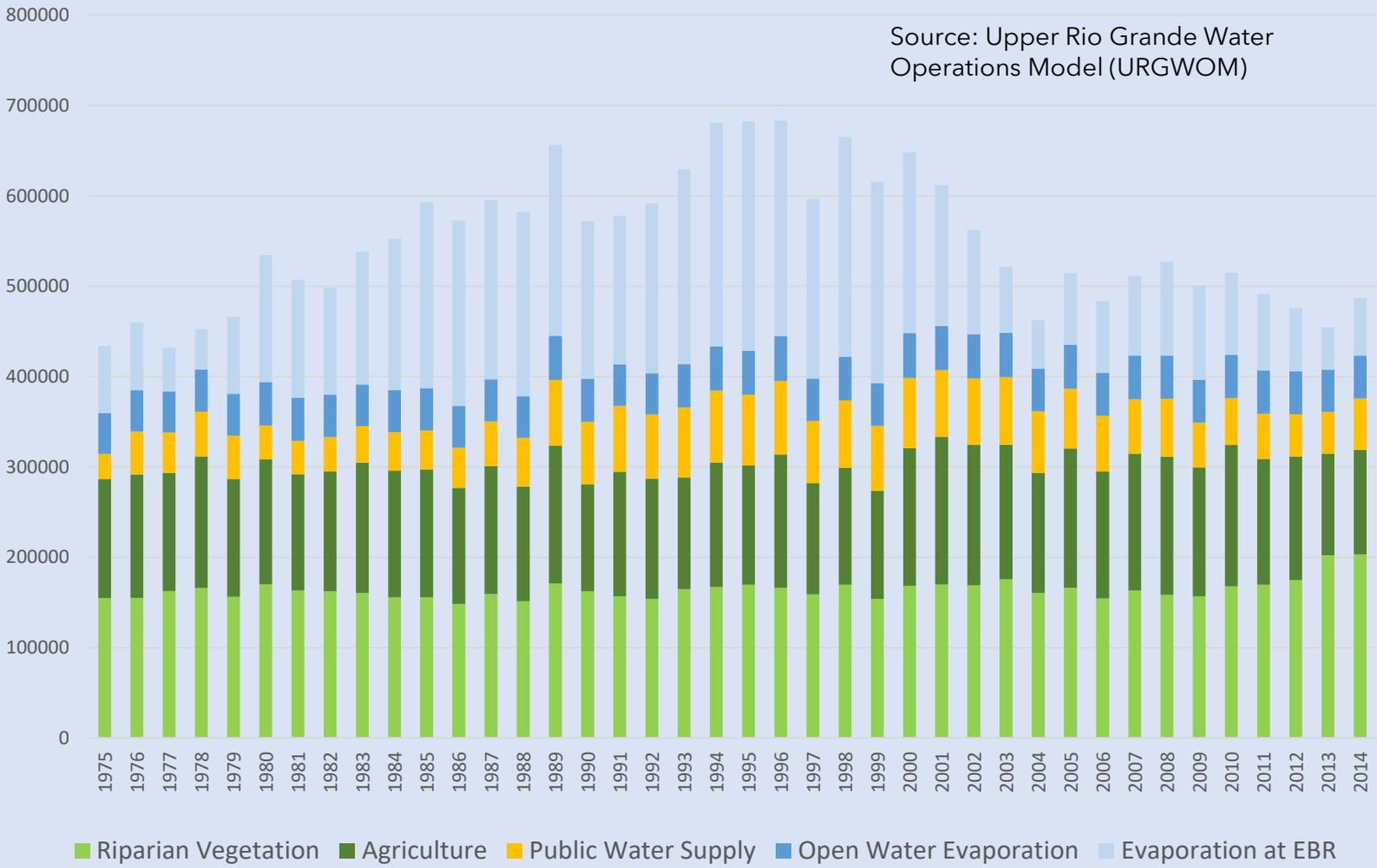
# AVERAGE MIDDLE RIO GRANDE WATER USE BY SECTOR, 2000-2014



Source: Upper Rio Grande Water Operations Model (URGWOM)

# WATER USE BY SECTOR IN THE MRG

Annual Middle Rio Grande Depletions by Sector, 1975-2014



# WATER USE BY SECTOR IN THE MRG

To meet shortages, all sectors need to reduce use – multi-pronged approach

Human uses are less than non-human uses

- Agriculture
- Public water supply - domestic wells
- Riparian vegetation ET - San Acacia Reach of 60 river miles
- Open water evaporation (including Elephant Butte evaporation)



# AGRICULTURE

## Middle Rio Grande Conservancy District Operations

- Delayed start date in 2021 and balanced startup in 2022
- Early stop date in 2021, conditional in 2022
- Reduction in diversion rates
- Not diverting all monsoon flows/spikes
- Fallowing programs

# PUBLIC WATER SUPPLY AND DOMESTIC WELLS

## Water conservation methods

- Limits on outdoor water use
- High efficiency appliances
- Re-evaluate rate structures

## Domestic wells

- Potential for metering orders
- Limits on outdoor water use
- Encouragement to hookup to existing public systems

# RIPARIAN EVAPO-TRANSPIRATION

## On-the-Ground River System Maintenance

- Moving river channel to lowest elevation in the valley
- Re-initiation of the Low Flow Conveyance Channel
- Channel maintenance to reduce overbank flooding
- Bankline trimming/channel widening to reduce roughness and increase efficiency
- Vegetation management in Elephant Butter Reservoir delta
- Thinning and removal of non-native vegetation

Approaching Plug Front South

# OPEN WATER EVAPORATION

## Reservoir evaporation

- Elephant Butte and Caballo Reservoir storage balance
- Native water storage in Abiquiu instead of Elephant Butte
- Compact water management
- Native water storage in upstream reservoirs instead of Elephant Butte

## River evaporation

- Channel maintenance to reduce overbank flooding
- P&P release rates and timing
- Elephant Butte Reservoir delta channel

# QUESTIONS?

