

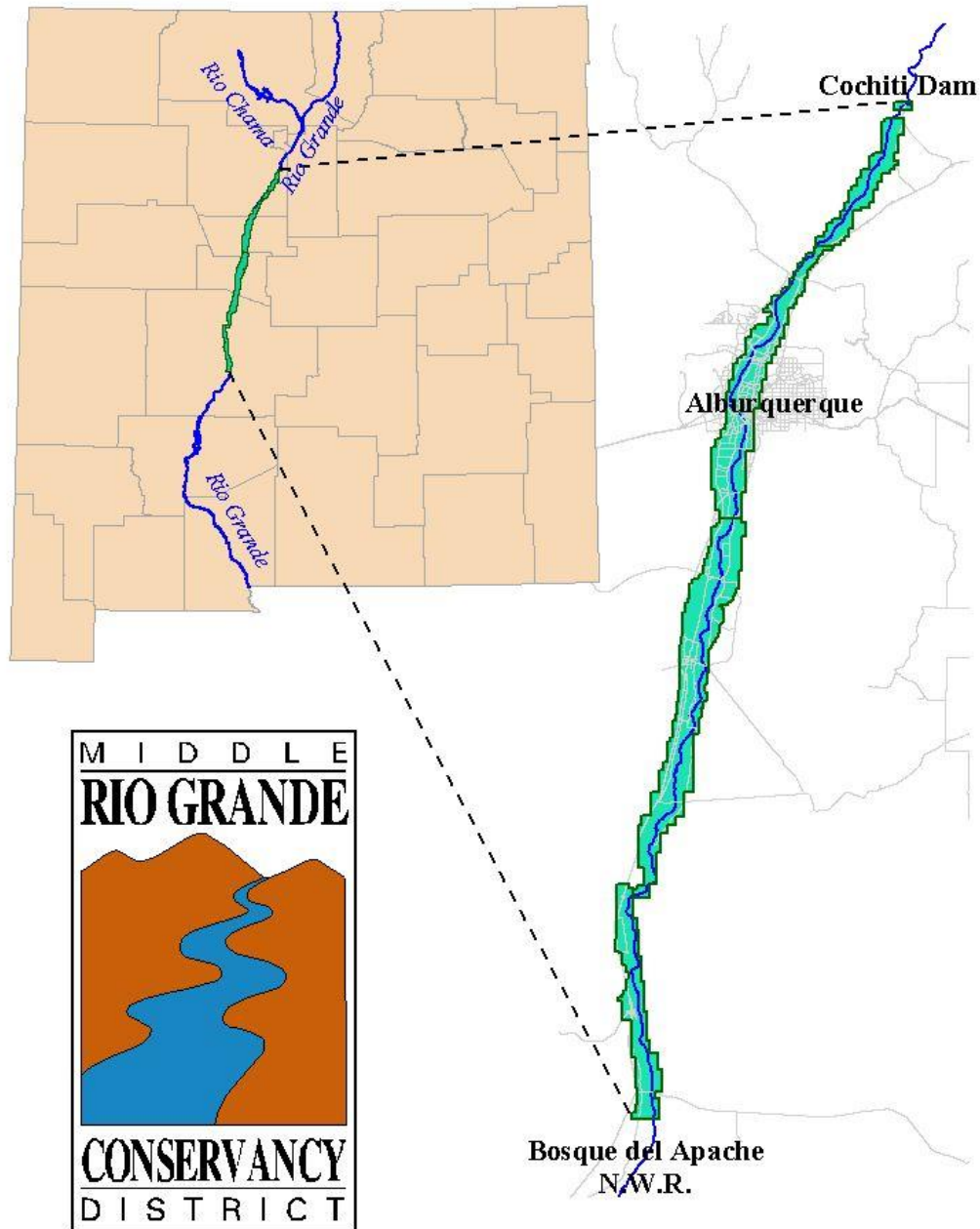
# Interim Committee on Water and Natural Resources

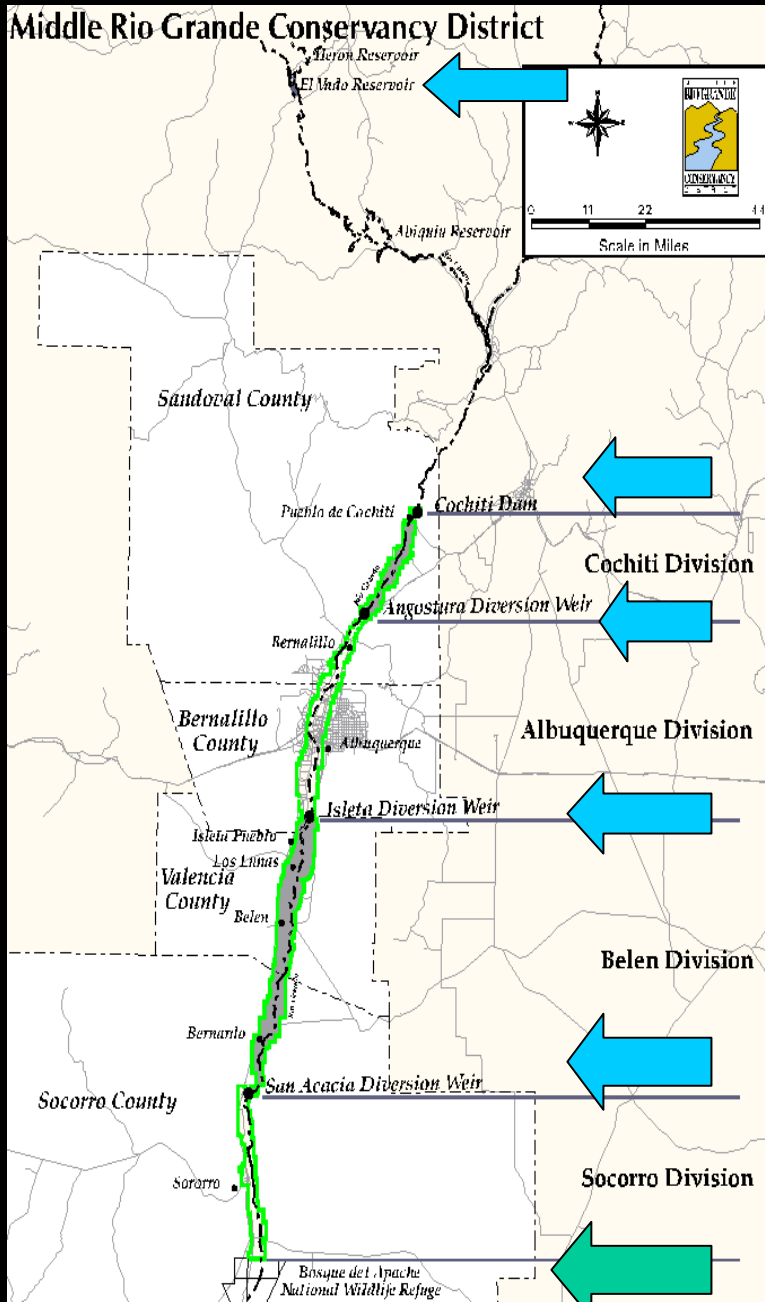
## Middle Rio Grande Conservancy District

October 12, 2017

Chairman John P. Kelly, PE  
Vice- Chair Glen Duggins  
Mike A. Hamman, PE  
CEO and Chief Engineer

# New Mexico





**EL VADO DAM**  
On the Rio Chama - For water storage

**COCHITI DAM**

**ANGOSTURA Diversion Weir**

**ISLETA Diversion Weir**

**SAN ACACIA Diversion Weir**

**Bosque del Apache Refuge**

# El Vado Dam near Chama, NM





# 2010 to 2016 Hydrology

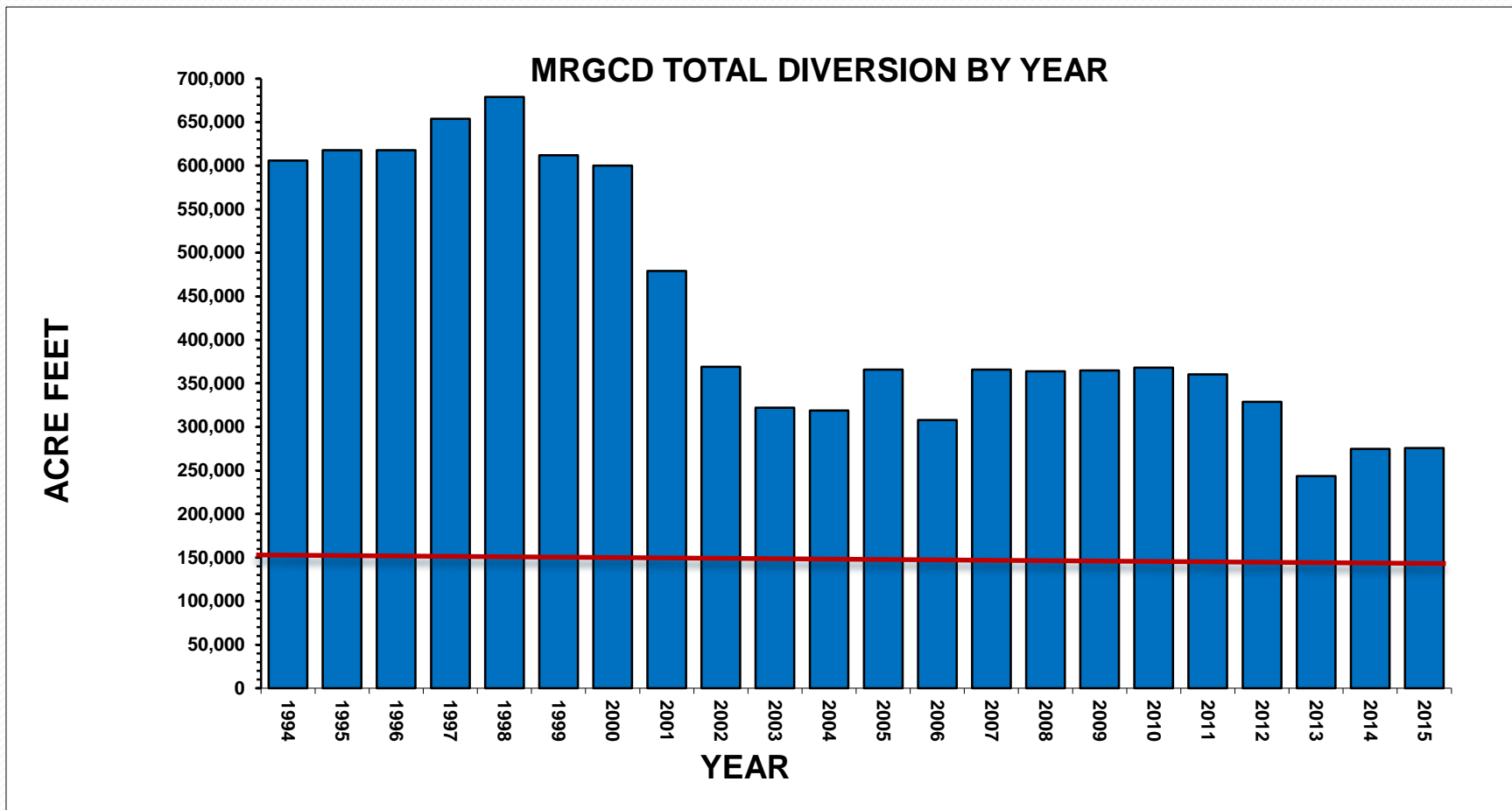
- **Five of seven years** were below average to much below average annual flows at the Otowi gage. **2016** was near average at 740k a-f.
- Rio Grande basin has been in **Article VII** storage restrictions for most of this period and District stored **allocated relinquishment credit water @El Vado Dam.**
- District exhausted all San Juan-Chama supplies in 2013
- San Juan-Chama shortages occurred in 2014, 15 and 16.
- 2015: **Out of Art VII** for two months allowing storage of **82,000 a-f @ El Vado Reservoir.**
- At the end of 2015, the District delivered **54,000 a-f** to Elephant Butte to reduce potential NM RG Compact debit for the year.

# 2017 Hydrology

- In 2017, the inflows to the Otowi gage are on target to exceed 1.2 M a-f making this the first great water year since 2005. It will require a number of these types of years to re-fill Elephant Butte Reservoir.
- Also in 2017, the District stored **114,000 a-f**
- The District will again release storage from El Vado to Elephant Butte, estimated at **30-50,000 a-f**, to reduce potential NM RG Compact debit for the year.

# Water Operations – Run-of-the-River

- The District has reduced its river diversions by more than 50% since 1997 due to ESA requirements and drought.
- Reduction achieved through operational efficiency, including water scheduling, measurement, and rotational delivery.
- This new strategy has provided more consistent deliveries to Elephant Butte and allowed for more efficient use of stored water from El Vado Reservoir.
- District has modified storage strategies at El Vado to address ESA concerns, provide stability for irrigators, and to support NM's efforts to maintain positive RGC accrued credit status.
- Long-term: Continued development of operational efficiency through automation, infrastructure improvement, and measurement; along with a new emphasis of on-farm efficiency.



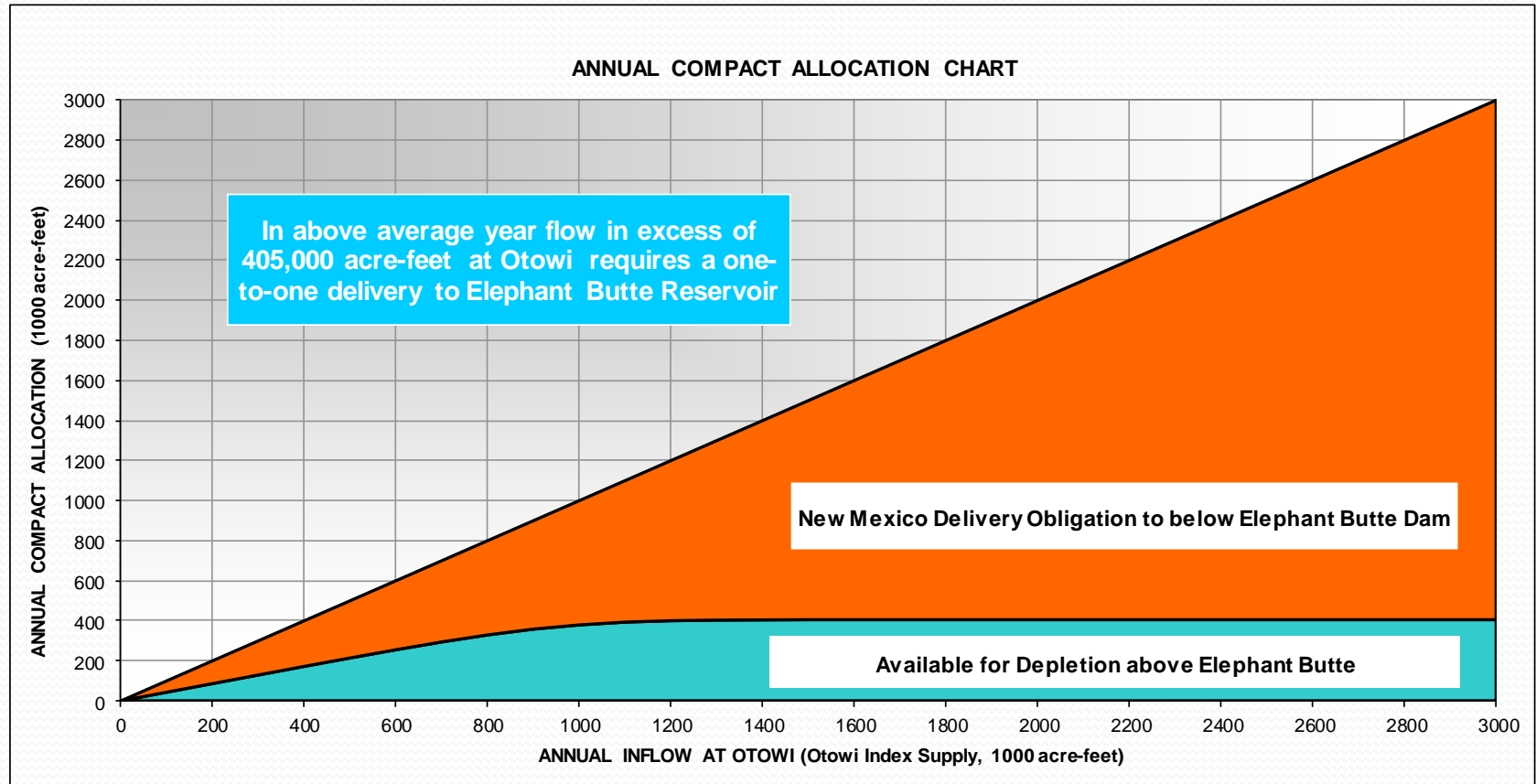
- District annual total diversions now consistently at or under 300K a-f, delivering to approximately 60K acres, with an estimated consumptive use around 150k a-f (red line).



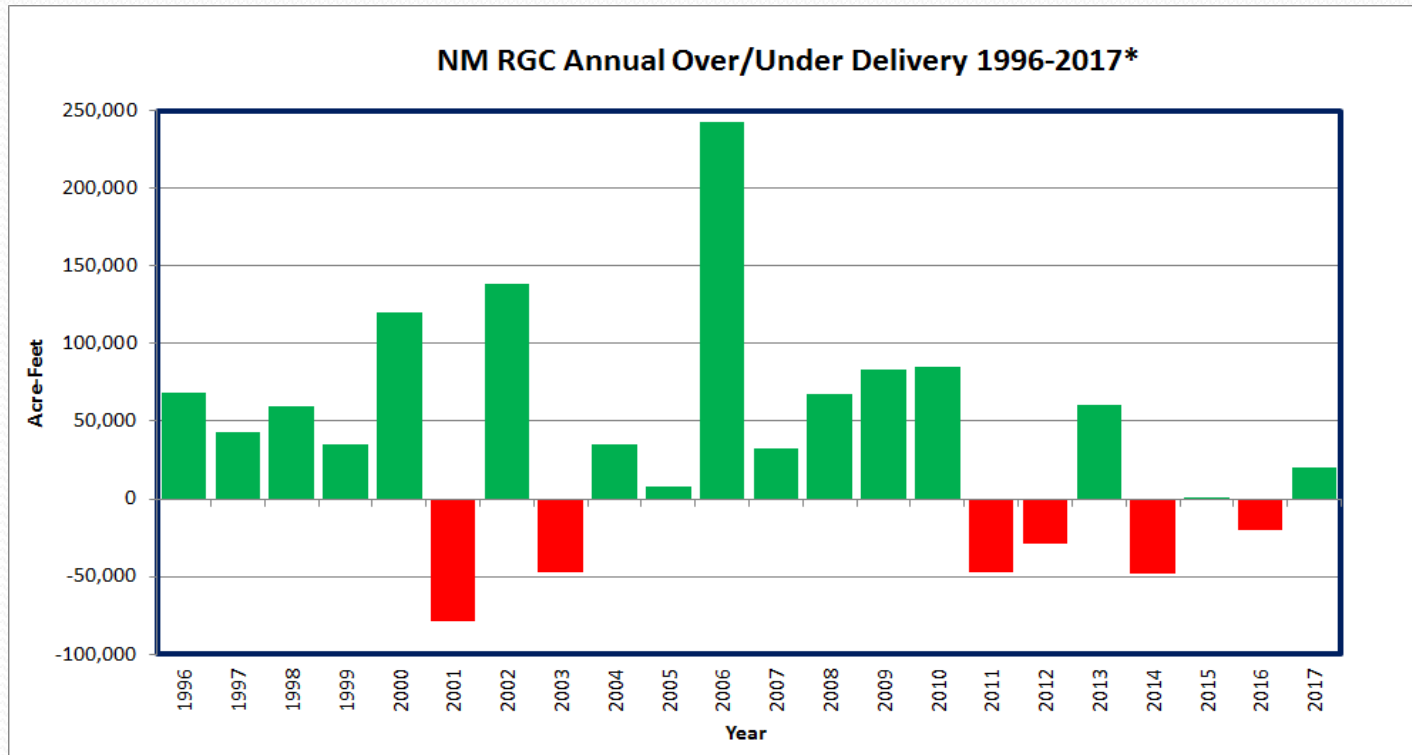
# MRGCD Water Bank

- The MRGCD delivers water to about **65,000 acres (includes Six MRG Pueblos)**, down from a peak of over 90,000 acres in the 1960s.
- Development accounts for a loss of an average of **200 acres annually**.
- Pre-1907 water rights have been severed from highly productive agricultural lands within the benefitted area of the District.
- For these lands to remain in production, the District implemented **Rule 23** allowing leasing of available supply on a junior priority.
- No double dipping occurs as there are equivalent “move-from” acres with water rights that are not irrigated, allowing a temporary lease of those rights to lands that are being irrigated.
- Water Bank acreage represents about 5 % (3500 +/- acres) of District irrigation deliveries in any given year.
- The District is working with the State Engineer to expand the Water Bank to allow pre-1907 rights to be “parked” for third party leasing.

# Chart Showing NM Delivery under the Rio Grande Compact



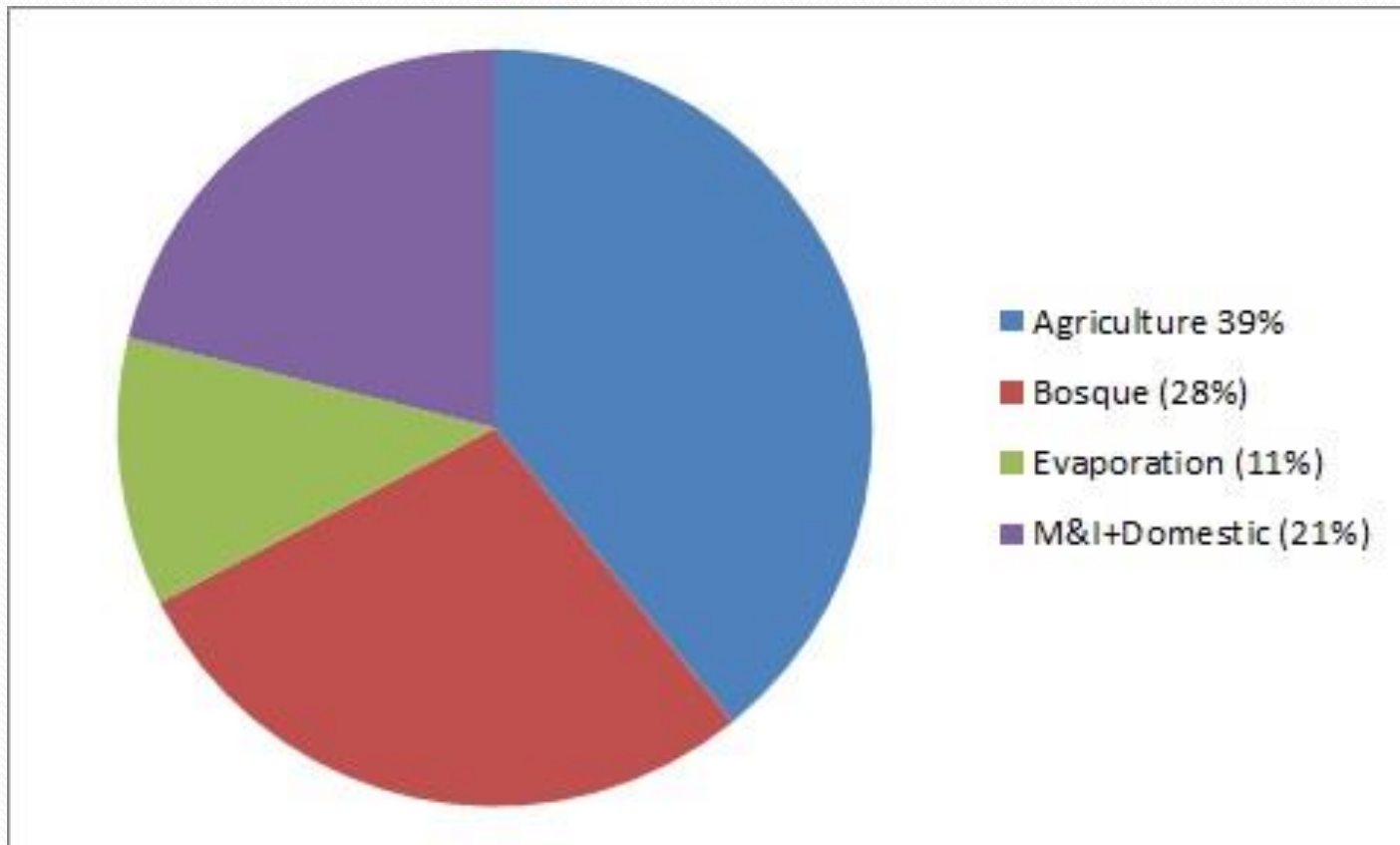
- For all practical purposes, the RGC caps consumptive use of RG water at around 400K a-f. Consumptive use in the MRG is partially met by San Juan-Chama water, which is external to the RGC.



- \*2017 delivery estimated, based on current intent to bring NM accrued credits/debits balance to zero at end of year, releasing storage from El Vado as needed.
- Over past 22 years, 16 years were over-delivery, 6 years were under-delivery.
- Over entire period, NM delivered 830,000 a-f more than required by the RGC, averaging positive by 37,700 a-f.
- Average over-delivery boosted by ESA releases in 2002, and exceptional summer rains in 2006, but overall indicates RGC is working as intended. NM is successfully meeting its delivery obligations.

# MRG Consumptive Uses

(not including evaporative loss from Elephant Butte reservoir)



- The MRG lives within its means today, aided by 96K a-f SJC project water, external to the RGC, that was planned for over 50 years ago by MRG water managers.

# MRGCD Priorities

- **Meet irrigation demands** while improving service and increasing system efficiencies: Board policy is to achieve a minimum efficiency of one-hour per acre at the turnout.
- **Keep Ag lands in production** through use of water bank
- **Operate to stay out of debt to the RG Compact.**
- **Comply with 2016 BiOp** to provide ESA coverage to MRGCD water users in the Rio Grande basin.
- Perform numerous capital improvements and deferred maintenance within budgetary constraints.
- Improve and expand inter-governmental partnerships.



# Partnership with NMISC and OSE

- The MRGCD works closely with the State Engineer's Office (OSE) and Interstate Stream Commission (ISC) in a number of key areas:
  - 1) The ISC and MRGCD are co-leads for the state in implementing the 2016 Biological Opinion.
  - 2) Coordinate water operations, habitat and drainage projects to meet both ESA flow needs along with meeting RG Compact deliveries to Elephant Butte for the Rio Grande Project.
  - 3) Coordinate with OSE on pre-1907 water rights transfers in order to properly manage water bank use.
- MRGCD supports the NMISC budget requests for MRG ESA and other MRG activities!

# ESA Considerations

- **The US Fish and Wildlife Service’s 2016 Biological Opinion (BO) is now in place.** This BO differs significantly from the 2003 BO in that it no longer prescribes set flow rates during the year. It is a non-jeopardy (no “take” requirements for on-going actions) BO as long as the agencies’ commitments are met over a 15-year period.
- **MRGCD committed a minimum of \$750,000 annually** towards building fish passage at three diversion weirs, habitat restoration, and manage river flows to assist with spawn and recruitment flows while minimizing river drying.
- Rio Grande silvery minnow population numbers have been very good in 2016 and 2017 due to good spawning conditions.

# Los Chavez Wasteway Habitat Site



# MRG Levee Task Force - Update

- The Task Force has not met this year but will schedule a meeting prior to years end.
- MRG Levee Update
  - **San Acacia Levee** – Socorro Segment is now complete at a cost of \$49 M for 7.3 miles of levee that takes 1,500 properties out of the floodplain.
  - **Bernalillo to Belen** – In study phase and District has paid \$1.2M for design to date. If all local cost share can be secured, construction could start in 2019 for the \$247M project.
  - **Bernalillo Levee** – Corps has determined that this levee does not meet certification for the Flood Insurance Program. Studies are proceeding with ESCAFCA and MRGCD.

# MRG Levee Task Force - Update

- **Albuquerque Levees** – The Corps has determined that these levee systems do not meet current criteria and will need reconstruction. No funding has been identified for feasibility studies to date.
- **Montano Gap Levee** – Local governments have jointly applied for and received a \$7M FEMA grant. The grantee is the City of Albuquerque.

**The MRGCD will continue to act as the local sponsor on MRG levee projects** but cannot solely provide the cost-share for these expensive projects. The Water Trust Board grants in the amount of \$4.5M assisted with the San Acacia Levee as well as funds appropriated to NMISC.

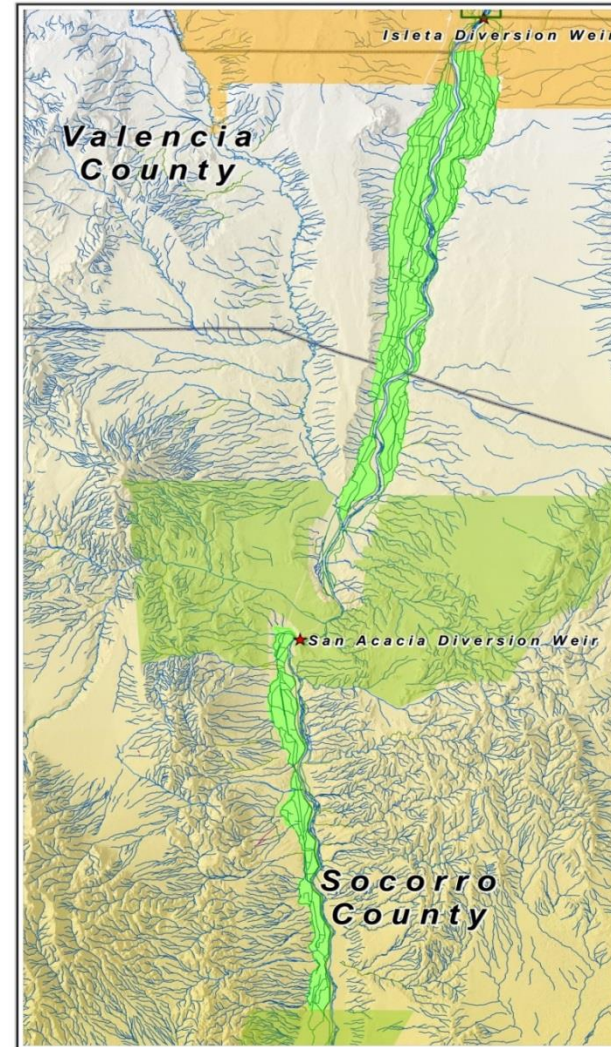
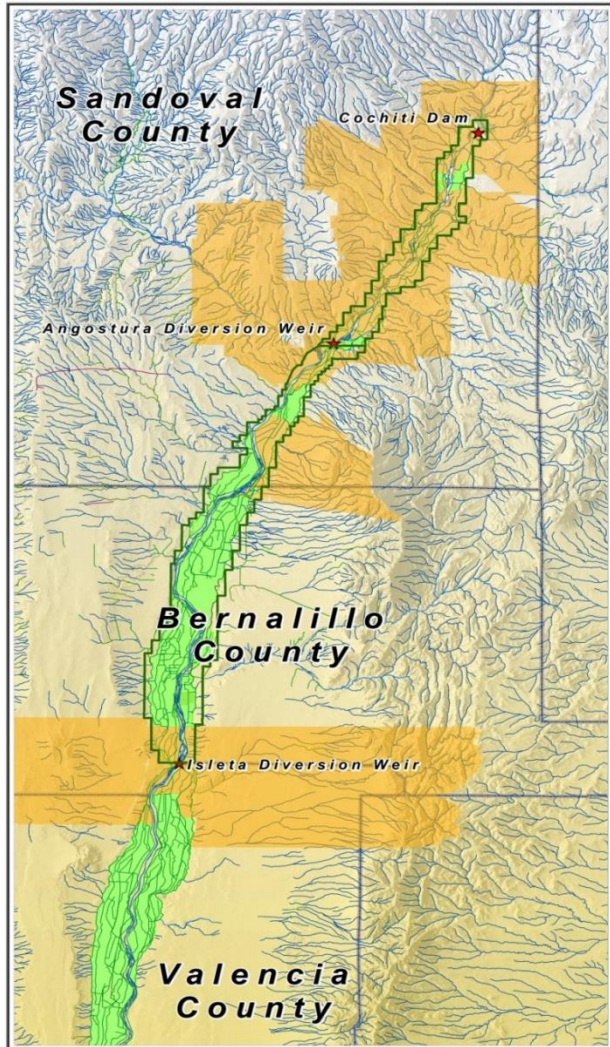


# East Riverside Drain below Hwy 6



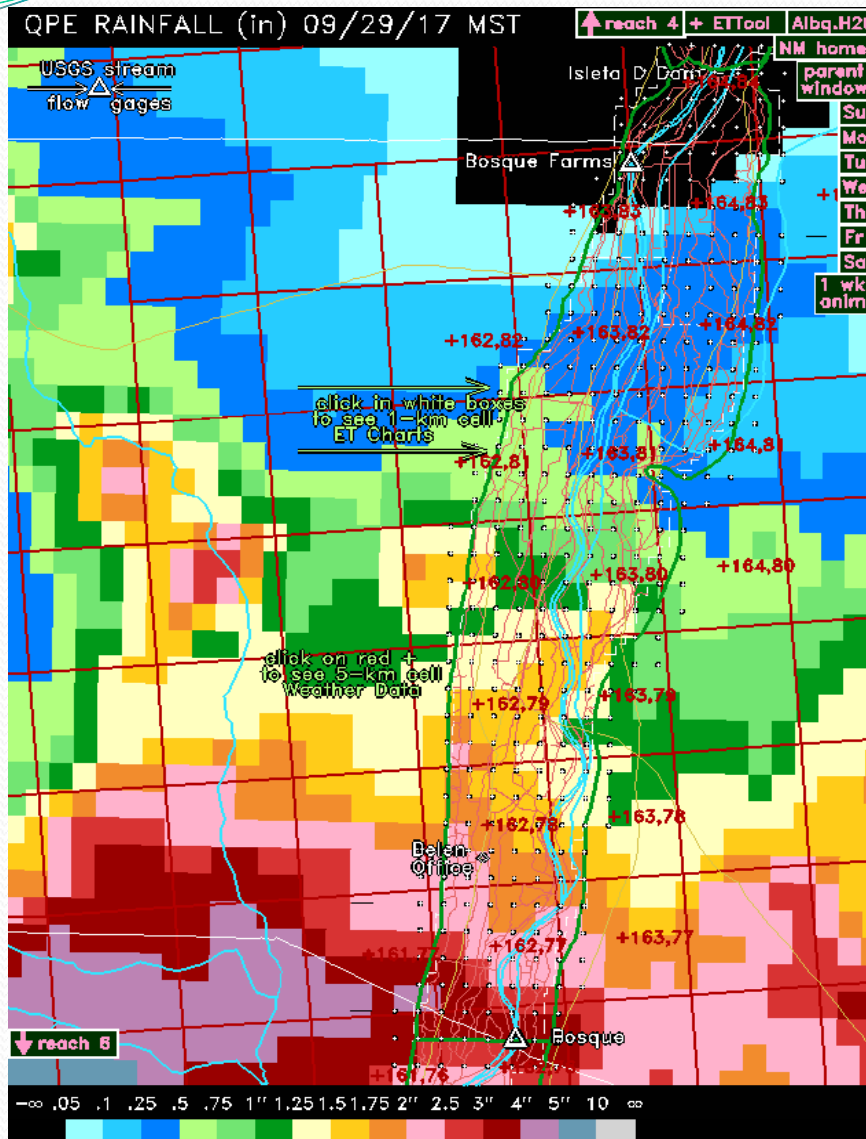


# Recent Flooding Events



# Valencia County Rain and Flooding

- Most of September was clear and dry. Storms returned to the area Sept 27.
- Over the next week and a half strong rains hit most of the area. Heaviest rains, and the most damage occurred in Valencia county, south of Belen.
- Other areas of the County on the east side also experienced high flows and damages.



September 29, 2017

Precipitation intensity from Isleta dam to Bosque Post office, south of Belen

Although these are 24 hour composite images, this is really a single storm cell which dumped most of its load between about 4:30 and 5:30 PM

Flash flooding, hail and tornado warnings were issued by the National Weather Service



# Sept 29 arroyo inflow





# Mill Rd @ NM 116



# NM116 & Olive Terrace



# Recommendations

- The MRGCD is a willing partner to work with the County, State and federal agencies to plan for a long-term solution to flooding concerns in the urbanizing areas of Valencia County.
- Flood retention dams and conveyance channels to the Rio Grande need to be constructed as has occurred in Bernalillo and Sandoval counties in urbanized areas.
- A joint-agency effort with bonding authority or the formation of a flood control authority may now be necessary to address flooding potential long-term.





Middle Rio Grande Conservancy District  
Keeping the Valley Green