

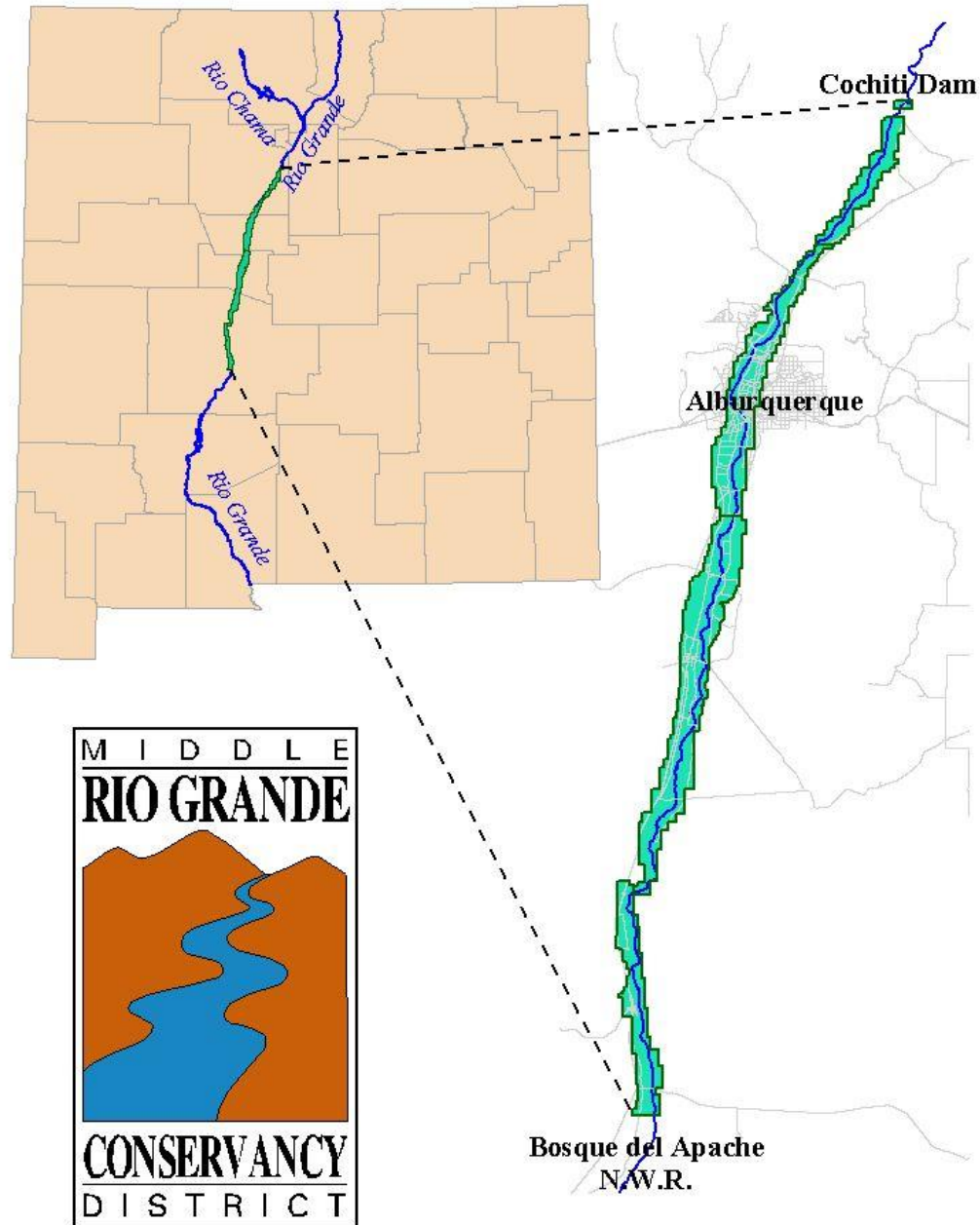
# Interim Committee on Water and Natural Resources

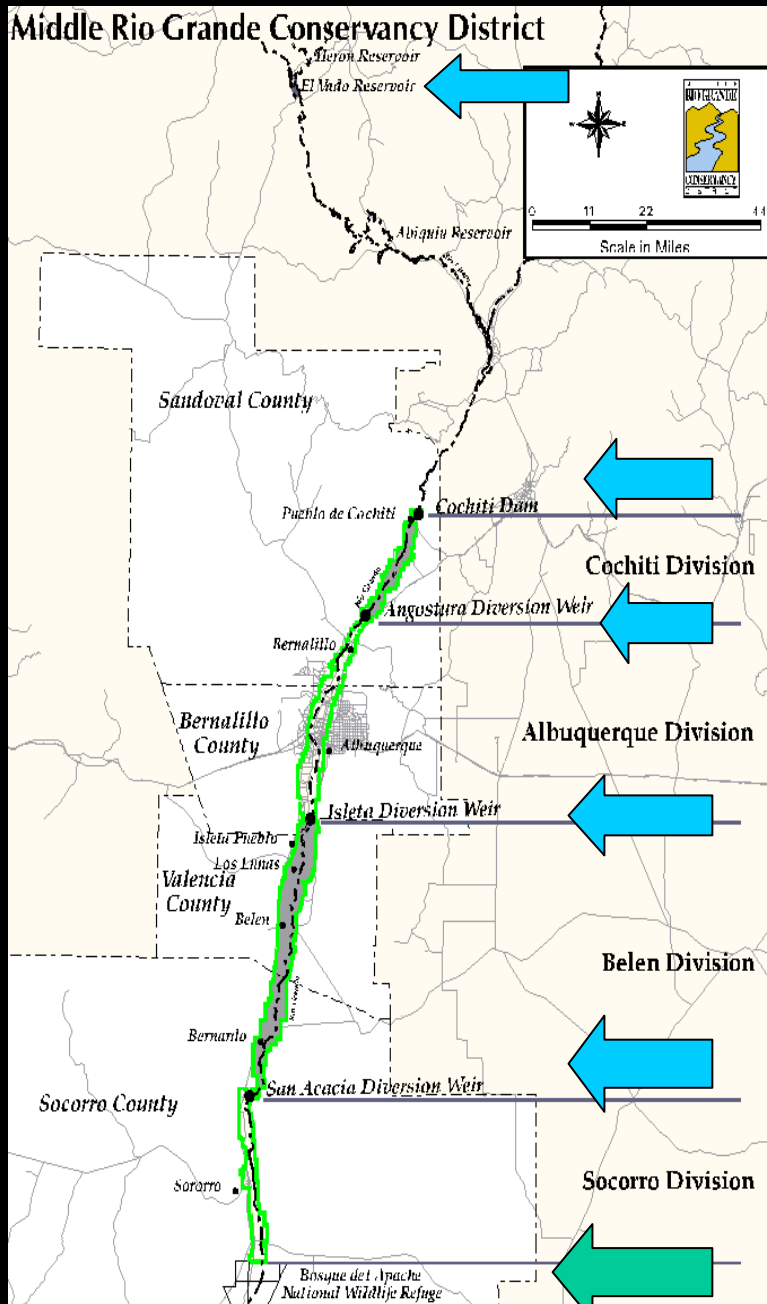
## Middle Rio Grande Conservancy District

July 31, 2019

Chair Karen Dunning  
Vice- Chair Joaquin Baca  
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**

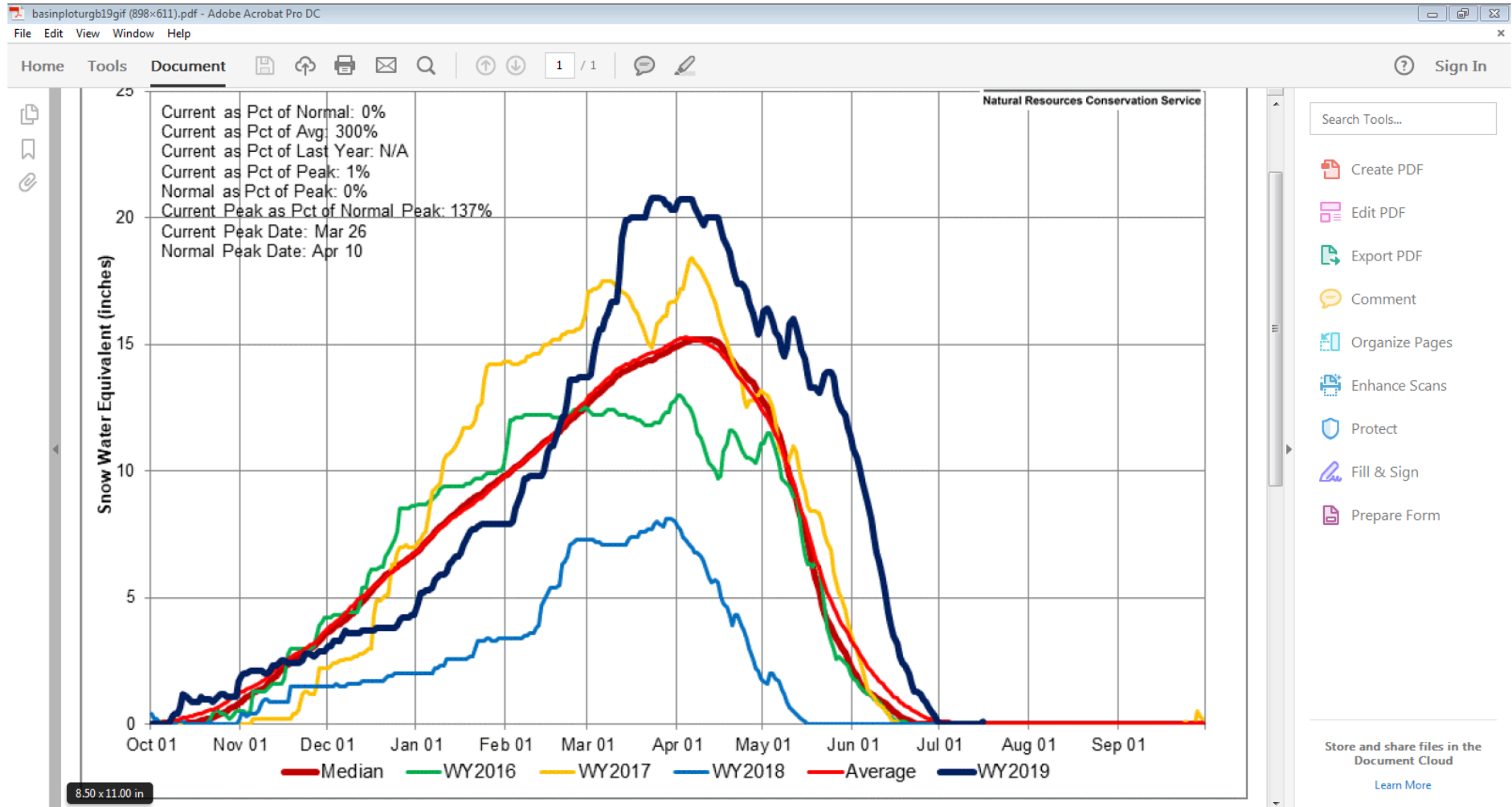
# MRGCD Priorities

- Meet irrigation demands while improving system efficiencies to prepare for shortages
- Keep Ag lands in production through use of water banking and protecting water rights
- Operate to minimize debt under the RG Compact.
- Comply with 2016 BiOp to provide ESA coverage to MRGCD and other water users in the Rio Grande basin.
- Perform numerous capital improvements including **repairing El Vado Dam and constructing engineered levees in the urbanizing areas.**
- Improve and expand inter-governmental partnerships to develop joint projects and leverage funding.

# 2012 to 2018 Hydrology

- **Five of seven years** were below average to much below average annual flows at the Otowi gage. **2018** was the lowest runoff since 1956.
- Rio Grande basin has been in **Article VII** storage restrictions for most of this period so the District stored **allocated relinquishment credit water @El Vado Dam**.
- District exhausted all San Juan-Chama supplies in 2018.
- San Juan-Chama Project shortages occurred in 2014 - 2018.
- The District released from El Vado in the fall to Elephant Butte in recent years to reduce potential NM RG Compact debits.

# Upper Rio Grande Snowpack 2016 -19



# 2019 Water Operations

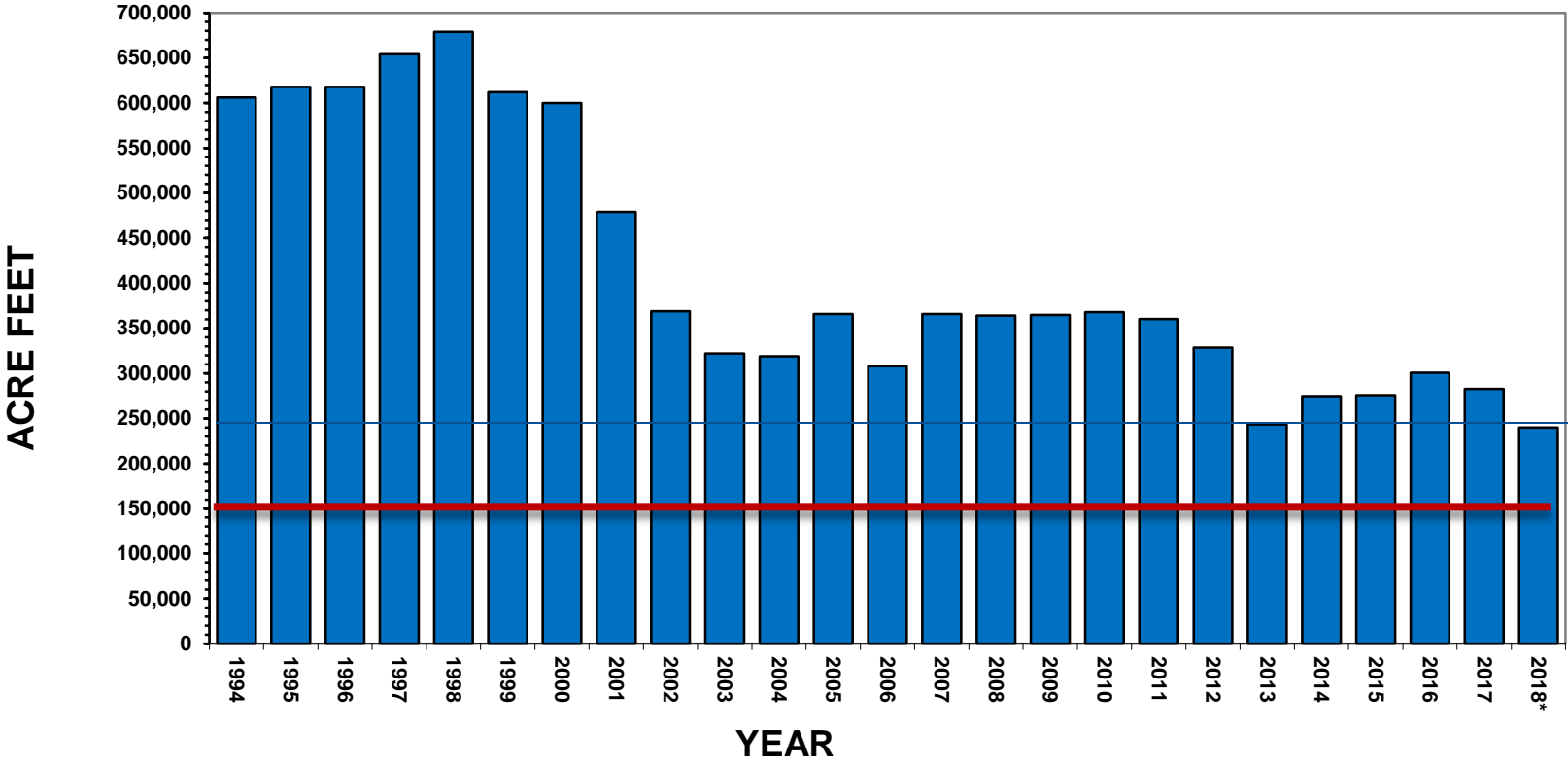
- Flows at Otowi gage are on target to exceed **1.5 M a-f** making this the third highest runoff season on record.
- Elephant Butte Reservoir reached a peak of 580,000 a-f and total RG Project storage peaked at 621,000 a-f.
- The District started the season with only 1,500 a-f in storage but stored **108,000 a-f** during the spring runoff while staying within dam safety storage restrictions.
- The District may need to 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 has provided more consistent deliveries to Elephant Butte and for more efficient use of stored water from El Vado Reservoir.
- Long-term: Continued development of operational efficiency through automation, infrastructure improvements, and measurement; along with a strong emphasis for on-farm efficiency.

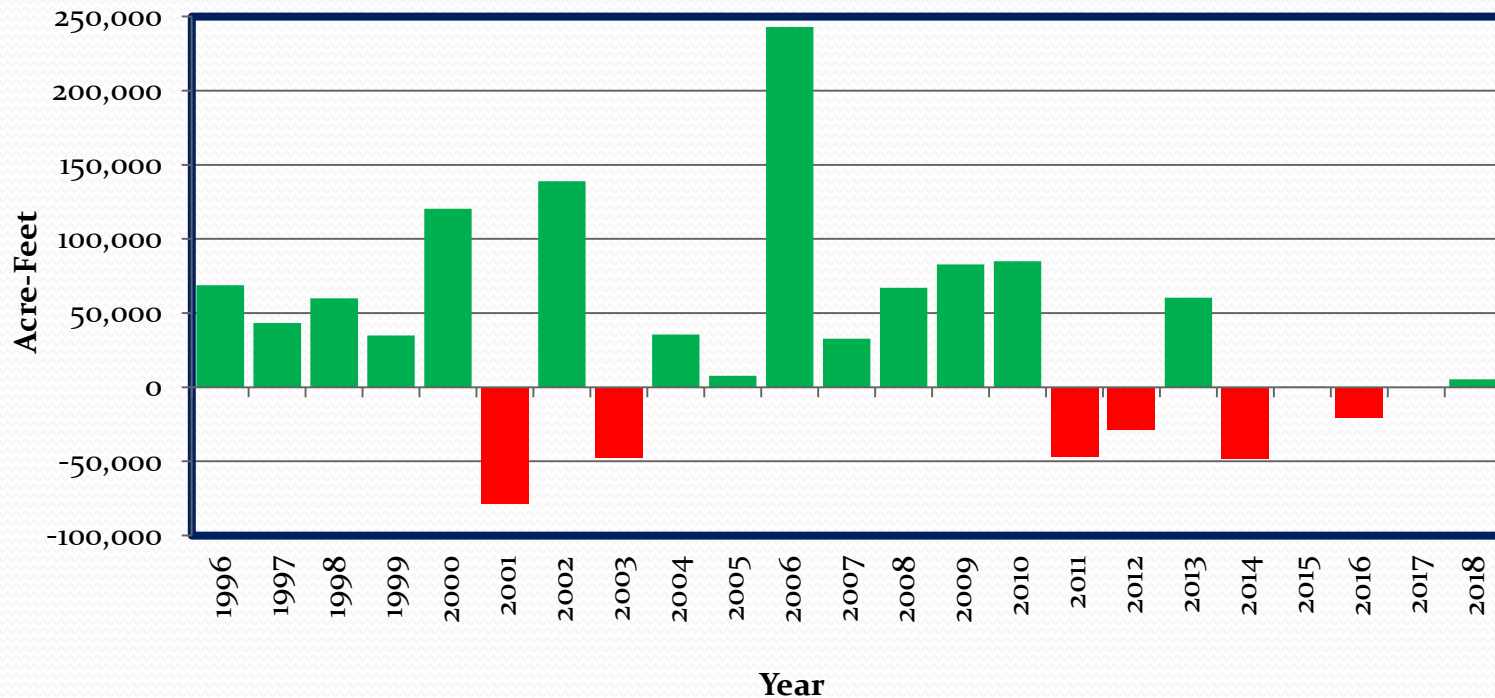


MRGCD TOTAL DIVERSION, 1994-2018



- 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).

## NM RGC Annual Over/Under Delivery 1996-2018



- 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.

# El Vado Dam Safety Concerns



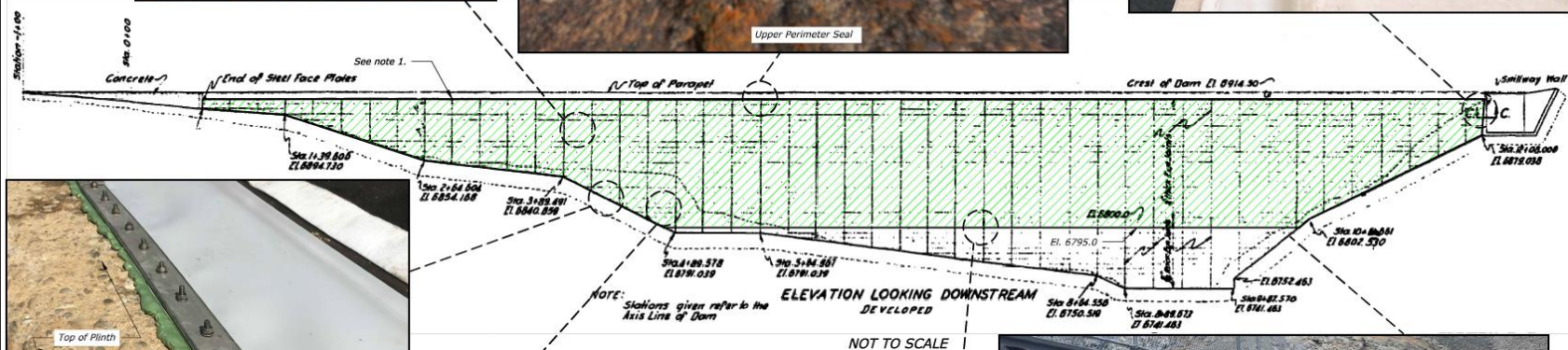




# El Vado Dam Fix

- Replace steel-lined spillway with concrete shoot and new gate and bridge Grout to fill voids behind the full face plate
- Place seepage blanket on left abutment
- Place geomembrane over 90% of existing face plate
- Improve road safety (**NMDOT has taken the position that no funding exists to “improve” this roadway**)
- Total Estimated Costs - \$85M with a 15% cost-share
- District will likely enter into 50-year 0% repayment contract and will not be asking for state assistance
- Construction starts November 2021





- NOTES
1. Entire upstream face to receive lining (total 180,000 ft<sup>2</sup>).
  2. Horizontal control datum is New Mexico Central State Plane coordinates, in the North American Datum of 1983 (NAD83). Vertical control datum is Middle Rio Grande Project Datum (7.8-foot lower than NGVD29 and 12-foot lower than NAVD88).

DESIGNED	
DRAWN	
CHECKED	
TECH. APPR.	
APPROVED FOR CONSTRUCTION	
DATE	2017-1-18

ALTERNATIVE 1A  
GEOMEMBRANE LINING  
AND INSTALLATION  
FEATURES

# MRG ESA Update

- **2016 Biological Opinion (BO) Compliance** All three action agencies of USBoR, NMISC and MRGCD continue to make significant progress on commitments and actions. Water operation actions have dramatically shifted river conditions to support minnow/bird habitat.
- **MRGCD committed a minimum of \$750,000 annually** towards building fish passage at three diversion weirs, habitat restoration, and managing river flows to assist with spawn and recruitment flows while minimizing river drying.
- Rio Grande silvery minnow population numbers were above BO targets in 2016 and 2017 but crashed in 2018 even though dramatic actions kept the river from drying from Albuquerque south.



# Los Chavez Wasteway Habitat Site





# San Acacia Fish Passage Project







# 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** – Study phase complete with the District contributing \$1.6M. Next phase: Design and construction of 42 levee miles. Cost share of **35%** required will be **\$6-10M annually for 12 plus years**.
- **The District can commit \$1M annually** so the balance of **\$5M plus** is needed from state sources.
- Construction could start as early as **2022**.

# MRG Levee Update

- **Albuquerque Levees** – The Corps has determined that these levee systems do not meet current post-Katrina criteria and will need reconstruction. No funding has been identified for feasibility studies to date.
- **Montano Gap Levee** – Local Gov't coalition efforts to use a \$7M FEMA grant failed due to issues with NMDHS in the previous administration.

**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 and NMISC have been sources of assistance on past projects.

# 2019 Runoff Levee Damage

- MRGCD Force Account and Contractors repaired 32 sites with severe sloughing
- MRGCD expended \$600,000 and the NMISC utilized \$400,000 through on-call contractors to assist with this years' levee protection work
- MRGCD will expend another \$500,000 this off-season repairing numerous sites we could not address during the runoff period



# Severe Bank Sloughing below Hwy 6



Peralta Riverside Drain Station 296+00





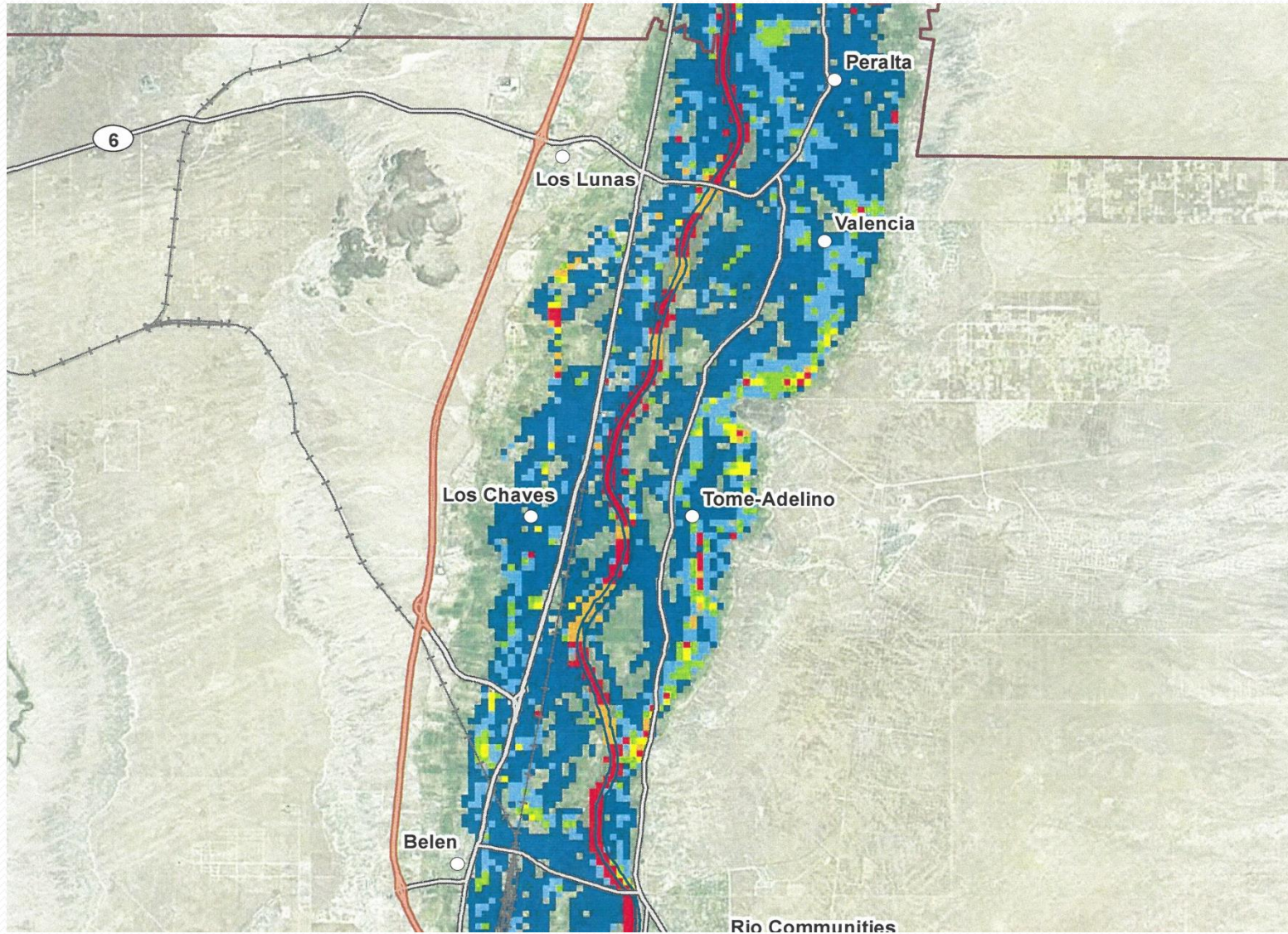
Atrisco Riverside Drain



Peralta Riverside Drain



# Corps of Engineers Inundation Map





# Upland Flooding Impacts

- During 2017 and 2018, summer thunderstorm events caused severe damages to District facilities, I-25 and numerous public and private properties in southern Valencia, central Socorro and eastern Sandoval counties.
- MRGCD has applied for PL83-566 (Farm Bill) Watershed and Flood Prevention funding to address southwestern Valencia County in partnership with the County and VSWCD.

# 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 and regional water planning.
  - 3) Works with ISC on spoil levee stability and new levee construction funding.
  - 4) 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 and urge the Legislature to fully fund the agencies from the General Fund and not further deplete Permanent Funds with operating expenses.

# Requests for Legislature Action

- Determine strategies for recurring cost share funding for Middle Rio Grande levee projects \$5M + annually.
- Assist with getting NMDOT support for improving NM 112 and road crossing on the crest of the dam.
- Support capital outlay requests to address localized flooding concerns to help leverage federal funds.
- Fund the OSE and NMISC through General Fund to allow for the Rio Grande Improvement and Irrigation Works Construction permanent funds to be used as intended.





Middle Rio Grande Conservancy District  
Keeping the Valley Green