

# Six Middle Rio Grande Pueblo Prior and Paramount Water Accounting

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# History

- Prior to creation of MRGCD in 1923 there were about 70 direct diversions from the Rio Grande within the Middle Rio Grande Valley
- MRGCD combined the separate systems from Cochiti Pueblo to Bosque del Apache National Wildlife Refuge so only four diversion dams were required to divert water to MRGCD lands.
- To combine systems MRGCD had to incorporate the systems of the Six Middle Rio Grande Pueblos into MRGCD

# History

- This required Congressional Approval
- In 1928 the Secretary of Interior executed an agreement with MRGCD providing for Conservation, Irrigation, Drainage and Flood Control for the Pueblo Indian Lands in the Rio Grande Valley
- The 1928 act provided that water rights on 8,346 acres Pueblo lands **“shall be prior and paramount to any rights of the district or of any property holder therein”**

# History

- The total P&P lands acreage was later updated to the current 8,847 acres
- There has not been much controversy since that time regarding the Pueblos taking natural flow
- There has been controversy on applying the Rio Grande Compact to P&P reservoir storage and release in post-Compact reservoirs (El Vado).

# 1981 El Vado Storage Agreement

- Laid out general procedures for storage and release of P&P water
- Signatories to this agreement were:
  - Six Middle Rio Grande Pueblos Irrigation Committee
  - Bureau of Reclamation
  - Secretary of Interior Designated Engineer
  - Bureau of Indian Affairs

# Current Procedures

- Designated Engineer (DE), Coalition and Bureau of Reclamation meet three times a year in the spring to calculate P&P water to store in El Vado
- Storage requirement is based on estimated P&P lands crop water requirements accounting for irrigation and conveyance efficiencies
- When P&P demands at Otowi can not be met through natural flow P&P stored water is released from El Vado

# Current Procedures

- The role of the DE is to determine if a P&P release requested by one of the Pueblos is justified
- Unused Indian Storage Account water is typically transferred during the month of November (MRGCD or Elephant Butte)

# DE's Computation Tools

- Excel spreadsheets are used in both the storage and release calculations

# DE vs. URGWOM

- BIA requested that Keller-Bliesner Engineering compare the methods used by the DE to URGWOM methods
- Report those differences to BIA and the URGWOM technical committee
- Attempt to resolve the differences

What were the  
Differences?

# Storage Calculation

- El Vado P&P storage is calculated monthly as follows: (somewhat simplified)
  - Forecast available “natural flow” at Otowi using procedures in 1981 agreement
  - Compare the P&P demand to the forecasted flow
  - if P&P Demand  $>$  Available “natural flow” then difference plus the El Vado to Otowi losses is the storage requirement
- Difference in P&P Demand

# P&P Demand Differences

- Pueblo demand at Otowi used in El Vado Storage calculation
  - URGWOM uses 63,383 ac-ft
  - BIA uses 83,736 ac-ft

This difference has not been resolved

# Forecast Flow Factors

- 1981 Agreement specified factors to estimate water supply at Otowi from forecasted Flow
  - March 1 forecast (March to July) multiplied by 0.6
  - April 1 forecast (April to July) multiplied by 0.7
  - May 1 forecast (May to July) multiplied by 0.8
  - URGWOM had used 0.7, 0.8, 0.9 and factors were changed to reflect the DE's values

# Storage Requirement Rule Change

- Change made to function:  
ComputeSupplyAtOtowi

Low Record Late Summer Flows +  
Forecasted RO Volume Remaining \*  
Monthly Spring RO Percentage –  
~~Anticipated El Vado Storage~~

# P&P Releases

- Determine the P&P demand at Otowi

If

usable “natural flow” at Otowi < P&P demand

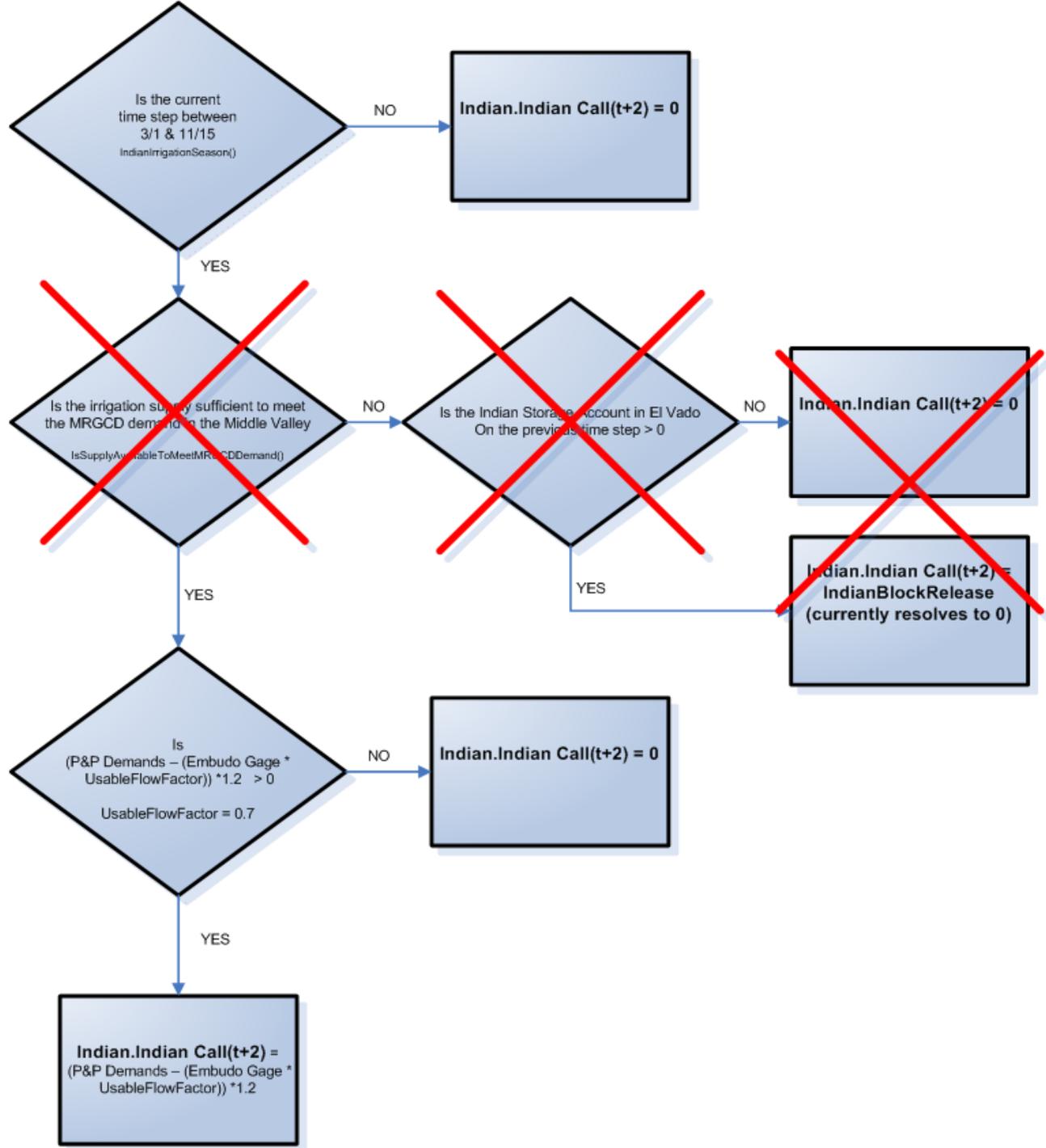
then

release water from El Vado Indian storage account

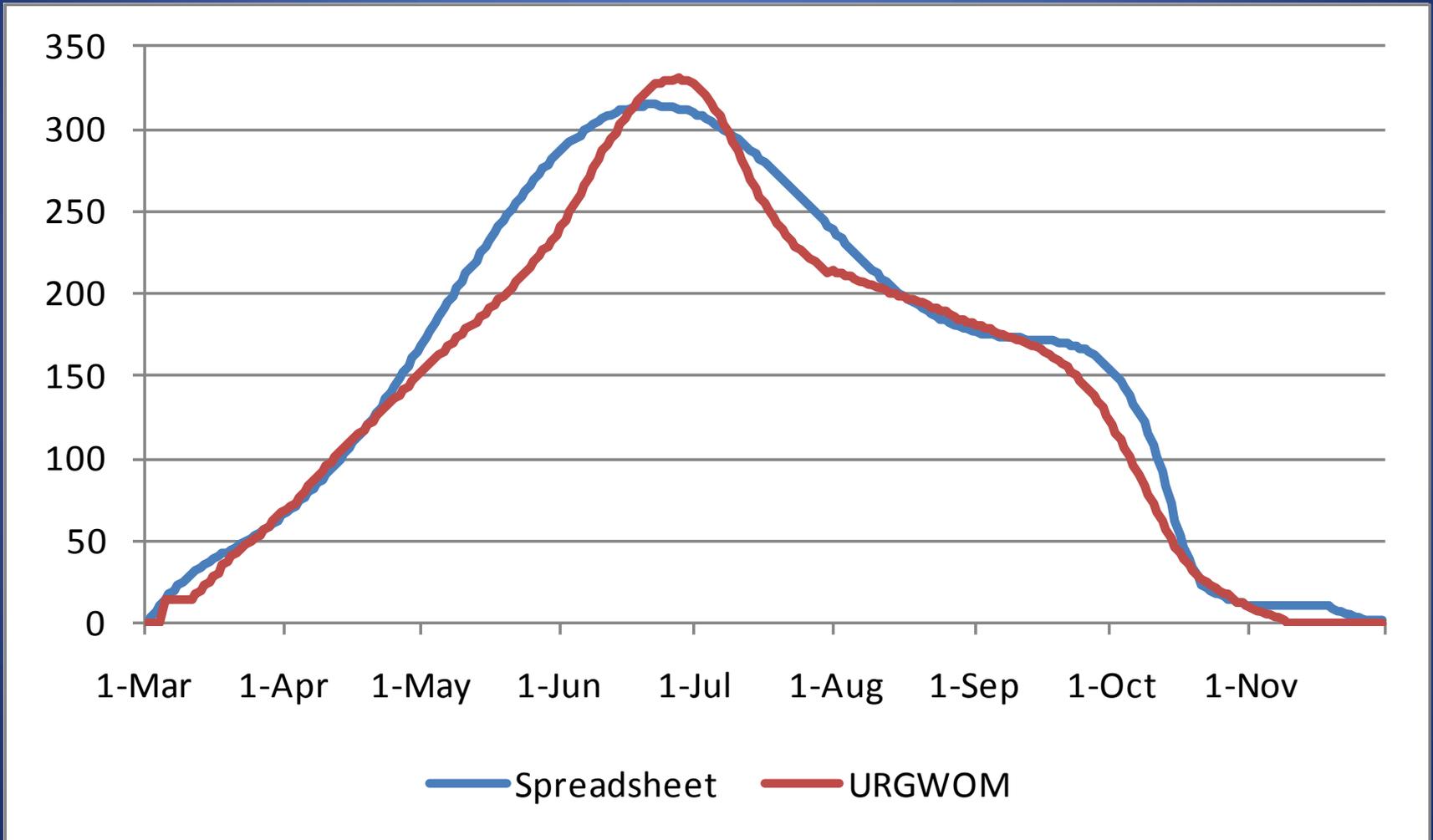
# Release Rule Changes

- URGWOM method relies only on flow at Embudo – any natural flow arriving at Otowi from La Puente would not be seen
- DE methods accounts for the La Puente flow
- URGWOM method is a simplification that has been discussed and approved by the DE

# Other Release Rule Corrections



# P&P Demand below Otowi (79,188 vs. 85,534)



# Questions