

INTERNATIONAL BOUNDARY AND WATER COMMISSION

MINUTE 319 AND BEYOND: U.S.-MEXICO COLORADO RIVER AGREEMENTS

Sally Spener, U.S. Secretary

March 9, 2016

Colorado River Citizens Forum Meeting



1944 WATER TREATY COLORADO RIVER

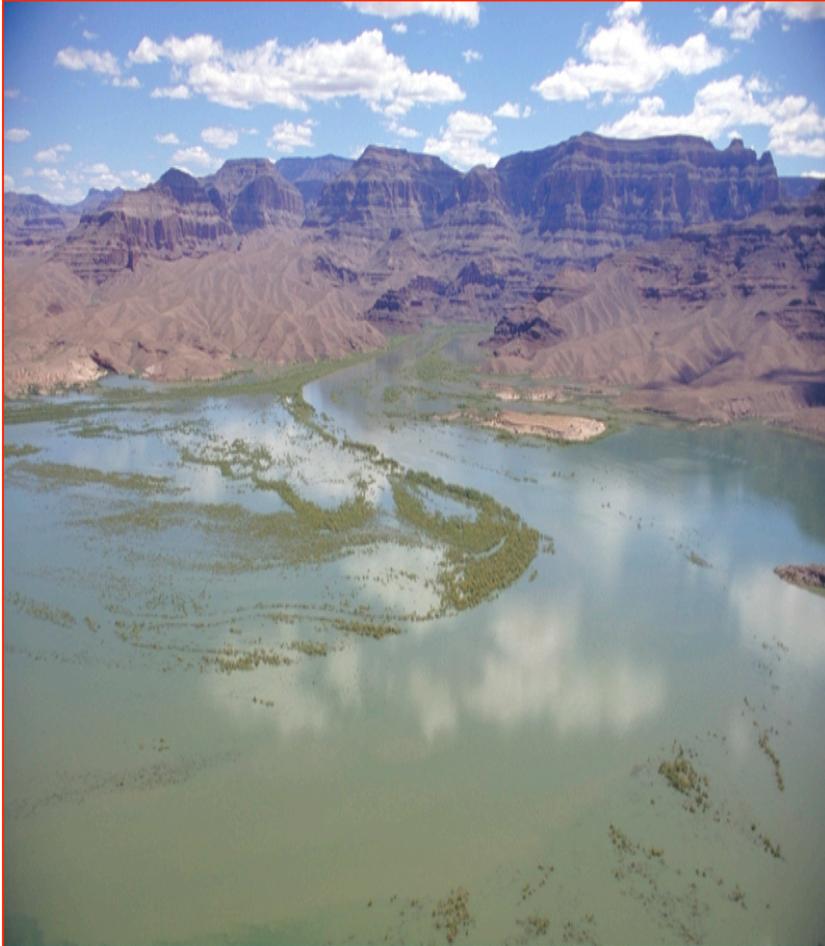
- ◆ U.S. to deliver to Mexico a volume of 1.5 maf/year
- ◆ When there are surplus waters, Mexico may receive an additional 200 kaf
- ◆ In extraordinary drought, Mexico reduced in proportion to U.S.
- ◆ U.S. has always met its delivery obligation



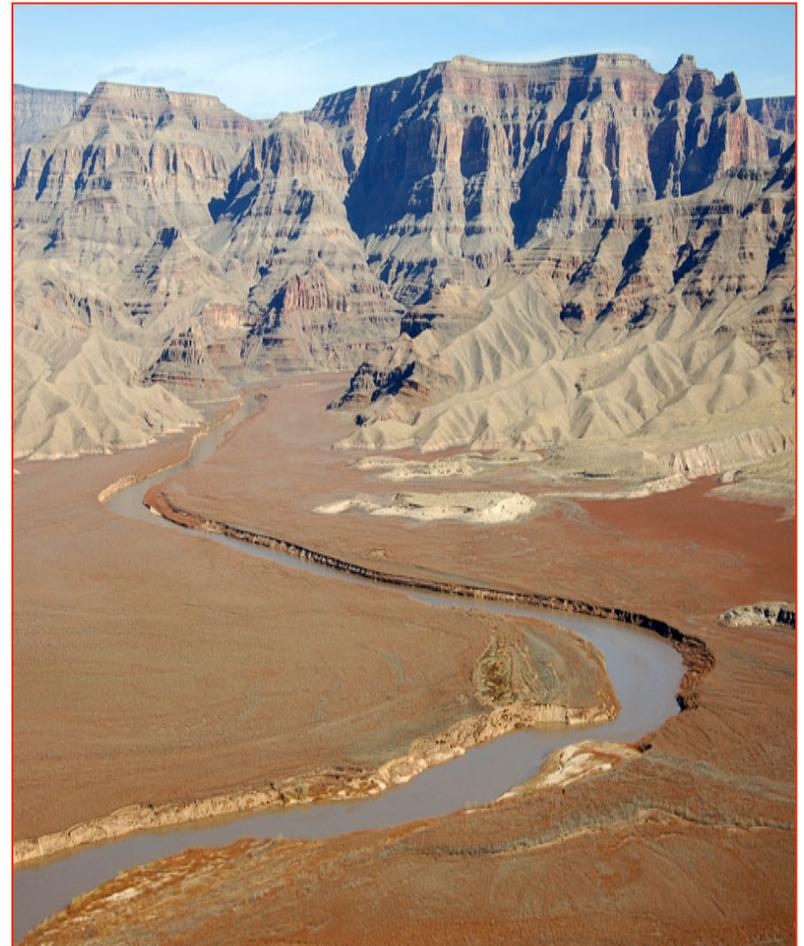
Mexico diverts most of its allotment at Morelos Dam.



COLORADO RIVER JOINT COOPERATIVE PROCESS



1999



Lake Mead

2006

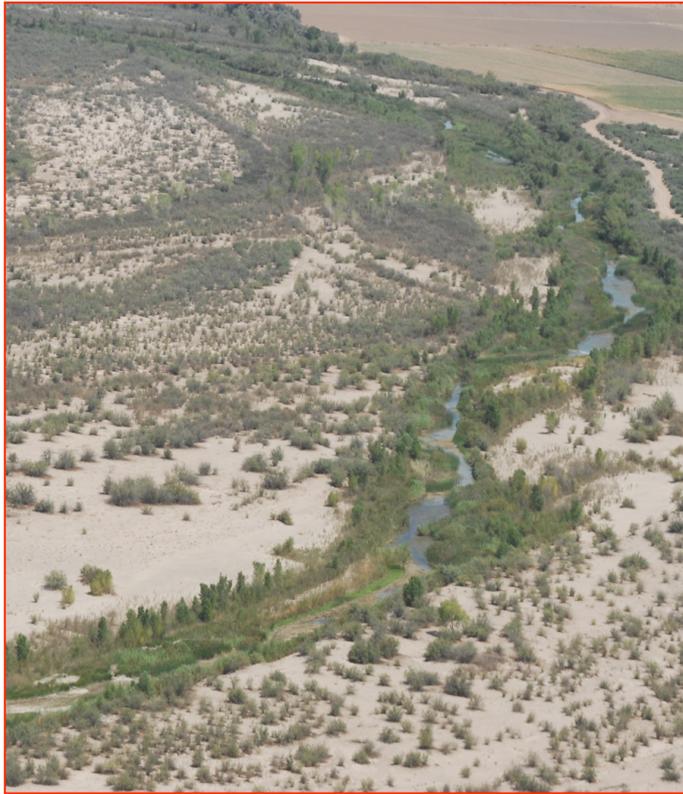
COLORADO RIVER JOINT COOPERATIVE PROCESS

- IBWC convened stakeholders to address the means to enhance U.S.-Mexico cooperation
- ◆ 4 Work Groups established in 2008:
 - ▶ New Water Sources – augmentation projects, esp. desal
 - ▶ System Operations – delivery efficiencies and modeling
 - ▶ Environment – habitat enhancement
 - ▶ Conservation -- agricultural water conservation

Work Group Meeting in Tijuana



MINUTE 317 (2010)



**Colorado River below
Morelos Dam**

- ◆ Framework for U.S.-Mexico cooperation on Colorado River
- ◆ Formalized the 4 Work Groups
- ◆ Provided for consultation with the affected states on policy and legal issues
- ◆ Noted topics of interest to both countries:
 - ▶ Identifying new water sources
 - ▶ Improving system operations
 - ▶ Minimizing impact of shortages
 - ▶ Permitting Mexico to store water in the United States
 - ▶ Water conservation
 - ▶ Identifying water for environmental purposes



MINUTE 318 (2010)

- ◆ Response to April 2010 earthquake in Mexicali Valley
- ◆ Allows Mexico to postpone water deliveries until it can repair earthquake damage
- ◆ Allows for downward adjustment of delivery schedule for 2010-2013 if requested by Mexico
- ◆ Water will be delivered later at Mexico's request



Damaged canal in Mexicali Valley



MINUTE 319 (2012)

- ◆ Signed Nov. 20, 2012
- ◆ 5-year agreement thru 2017
- ◆ 7 Sections
 - ▶ Extension of Minute 318
 - ▶ High reservoir water sharing
 - ▶ Low reservoir shortage sharing
 - ▶ Intentionally Created Mexican Allocation (ICMA)
 - ▶ Salinity Management
 - ▶ Water for Environment and ICMA/ICS exchange pilot
 - ▶ Projects



Minute 319 signing in San Diego, CA



EXTENSION OF MINUTE 318



Extensive repairs were required.

- ◆ Mexico advised earthquake repairs are ongoing.
- ◆ Allows for Mexico to defer delivery of water through 2017
- ◆ Water to be delivered when Mexico requests it
- ◆ Deliveries limited during certain shortage conditions



ICMA

- ◆ Intentionally Created Mexican Allocation (ICMA)
 - ◆ Mexico to create ICMA through adjustments to its annual delivery schedule resulting from water conservation projects or new water sources projects
 - ◆ Allows for Mexico to create up to 250 kaf of ICMA/yr.
 - ◆ Delivery of up to 200 kaf/year
 - ◆ Deliveries may not negatively impact U.S. operations



Minute 319 binational meeting

WATER SHARING



Hoover Dam

- ◆ Mexico interested in receiving additional water when surplus is available to U.S. users.
- ◆ Provides additional volumes to Mexico of 40-200 kaf based on 4 high elevation tiers at Lake Mead.



SHORTAGE SHARING

- ◆ Principle that when one country is in shortage, the other country should be in shortage
- ◆ Reductions to Mexico of 50-125 kaf based on 3 low elevation tiers at Lake Mead
- ◆ Mexico may use its stored water to offset shortage, subject to limitations.



Lake Mead at Hoover Dam
Dec. 2015



SALINITY



Saline waters can be bypassed through drains.

- ◆ Minute 242 requires salinity of deliveries to Mexico to be similar to water quality at Imperial Dam
- ◆ US and Mexico will operate system to minimize salinity impacts of Min. 319 actions
- ◆ Mexico may choose to have saline water delivered through a bypass drain to reduce salinity at NIB
- ◆ Salinity differential to be calculated as if water were delivered at NIB



ENVIRONMENT AND PILOT PROGRAM



**Colorado River at Southerly
International Boundary**

- ◆ Generates water for the Colorado River Delta and limitrophe
- ◆ 158 kaf of water for environment in 2013-2017
 - ▶ U.S. investment in Mexico to cover 1/3 of this volume
 - ▶ Mexico and NGOs will cover the rest
 - ▶ Includes pulse flow and base flow



ENVIRONMENT AND PILOT PROGRAM

- ◆ \$21 M from US for projects in Mexico
- ◆ Mexico derives long-term benefits from waters conserved from U.S. investment
- ◆ U.S. funders receive one-time 124 kaf of water to be converted from ICMA; no pipeline required
- ◆ Water benefits to MWD, CAP, SNWA, USG



U.S. entities to fund canal lining



PROJECTS



This old canal in Mexico could be used for water storage/conservation.

- ◆ Future discussions of possible projects such as:
 - ▶ Seawater desalination
 - ▶ Irrigation district modernization
 - ▶ Fallowing
 - ▶ Alamo Canal regulating reservoir
 - ▶ Beneficial use of New River



IMPLEMENTATION - RESTORATION SITES



Clearing salt cedar at restoration site to make way for native plants.

- ◆ Miguel Aleman environmental restoration project
 - ▶ 87-acre site in Mexico across Colorado River from Hunter's Hole restoration in U.S.
 - ▶ Restore cottonwoods, willows, mesquite
 - ▶ Tens of thousands of trees planted



IMPLEMENTATION – RESTORATION SITES



Laguna Grande Forest

- ◆ Laguna Grande
 - ▶ 1200-acre NGO site in Mexico
 - ▶ Work began a decade ago
 - ▶ More than 100-thousand native trees planted
 - ▶ Tall trees have already replaced desert scrub



IMPLEMENTATION – PULSE FLOW

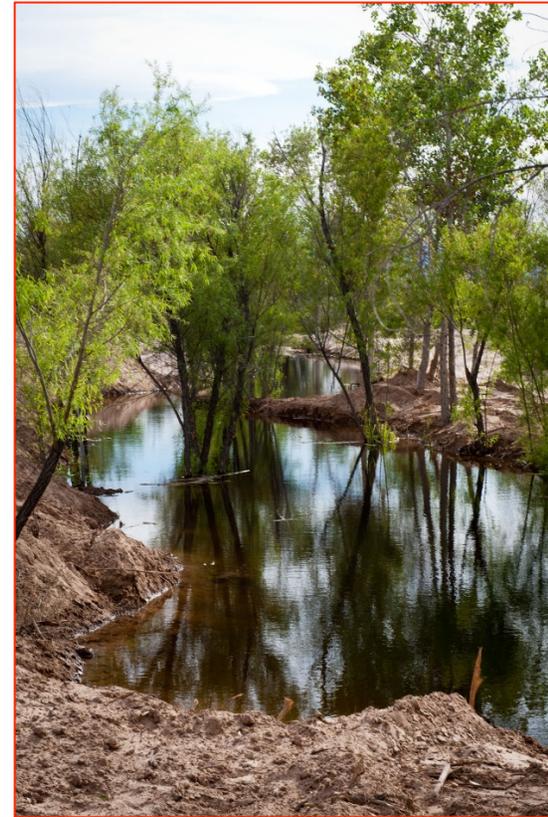


Pulse Flow Release from Morelos Dam

- ◆ March-May 2014
- ◆ 105 kaf release for environmental purposes
- ◆ Flow inundated key areas of the river channel and floodplain
- ◆ Scientists are studying effect of the pulse flow
- ◆ River reached the sea
- ◆ Internationally-recognized effort



IMPLEMENTATION - PULSE FLOW



Pulse flow at Laguna Grande Restoration Site



IMPLEMENTATION - AAC TURNOUT



Work Group Field Trip

- ◆ Conveyance of Mexican water through All-American Canal (AAC)
 - ▶ High-priority project
 - ▶ Requires a connection between AAC and Mexican aqueduct
 - ▶ Could be used by Mexico for emergencies or other reasons
 - ▶ Work Group has been meeting to discuss this project



IMPLEMENTATION – WATER CONSERVATION

◆ Canal lining in Mexico

- ▶ 10-mile segment of Revolución Canal in Sonora
- ▶ Construction contract to be put out to bid this spring
- ▶ US entities are funding the work in exchange for a portion of the conserved water



Revolución Canal



IMPLEMENTATION – PENDING



Colorado River Limitrophe

- ◆ High reservoir conditions
 - ▶ Not expected this year or next
- ◆ Low reservoir conditions
 - ▶ 37% risk of shortage in 2017
- ◆ ICMA
 - ▶ Mexico has stored “earthquake” water but not ICMA



MINUTE 32X



US and Mx officials at Hoover Dam

- ◆ Minute 319 ends 12/31/17
- ◆ Work began in 2015 on a new agreement based on Minute 319
- ◆ Goal is to sign a new Minute in 2016
- ◆ New Minute informed by Minute 319 and evolving basin conditions



MINUTE 32X



MNG Members in Santa Fe

- ◆ Minute Negotiating Group (MNG) meets monthly
- ◆ Meetings held in US and Mx
- ◆ Domestic consultations inform between binational meetings



MINUTE 32X

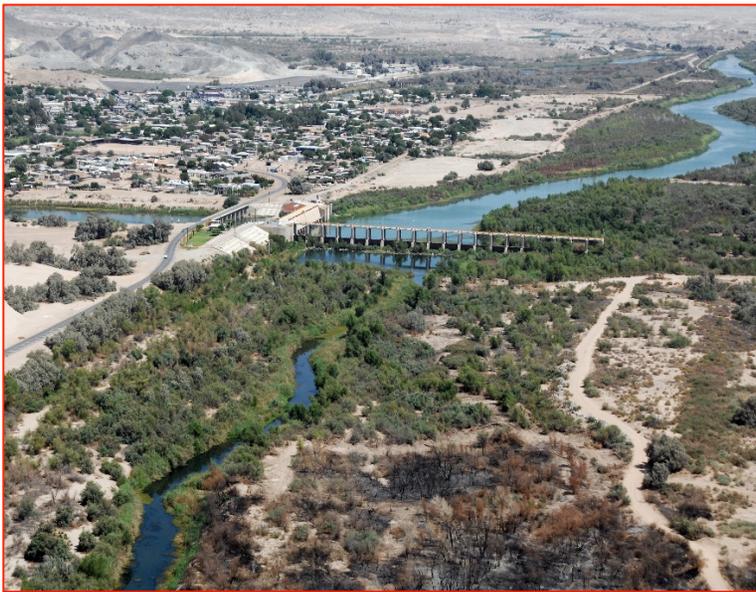


NIB Gaging Station

- ◆ Work Groups formed to assist MNG
 - ▶ Salinity Work Group
 - ▶ Projects Work Group
 - ▶ Environmental Work Group
- ◆ Existing Minute 319 Work Groups are also helping



MINUTE 32X



Colorado River at Morelos Dam

◆ Salinity Work Group

- ▶ Address salinity when stored water is delivered
- ▶ Explore relationship between volume and salinity
- ▶ Assess salinity issues identified by other work groups or of proposed projects
- ▶ Explore potential salinity control activities



MINUTE 32X



Canal Rehabilitation in Mexico

◆ Projects Work Group

- ▶ Develop a list of projects and evaluate feasibility
- ▶ Irrigation district improvements of particular interest
- ▶ Clarify a framework for providing water benefits to the US in exchange for investment



MINUTE 32X

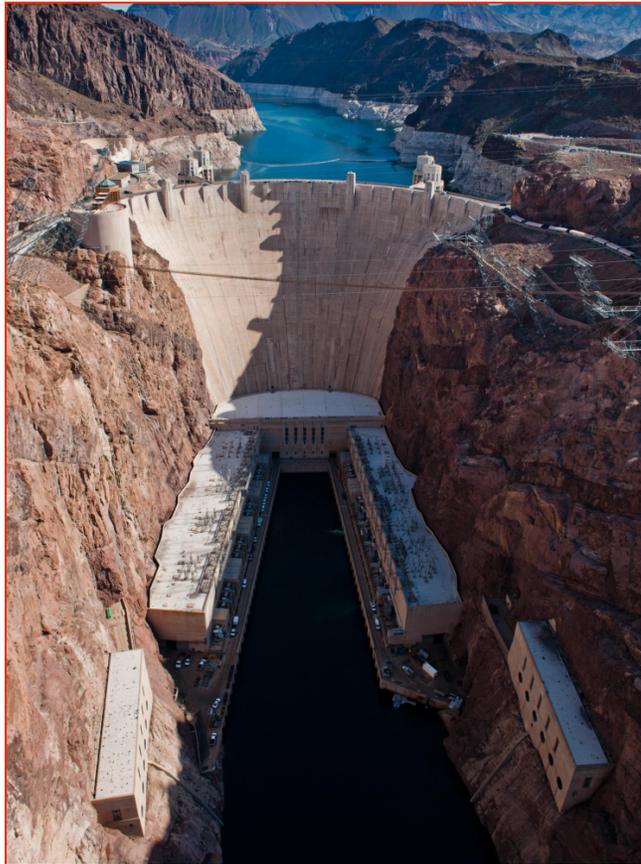
- ◆ Environmental Work Group
 - ▶ Develop recommendations for environmental projects
 - ▶ Define priorities for environmental projects considering a range of possible environmental flows
 - ▶ Assemble information on funding and water needs of current projects



2014 Pulse Flow



MINUTE 32X



Hoover Dam 2015

- ◆ Min. 319 Basin Conditions and Hydrology Team
 - ▶ Perform technical analysis considering natural runoff, reservoir elevations, and drought indicators
- ◆ Min. 319 All-American Canal Work Group
 - ▶ Address issues associated with potential construction of AAC turnout for Mx



INTERNATIONAL BOUNDARY AND WATER COMMISSION

USIBWC HEADQUARTERS

El Paso, TX

915-832-4100

www.ibwc.gov

