



— BUREAU OF —
RECLAMATION

Bringing Water to the Diné

Navajo-Gallup Water Supply Project

2024 Animas and San Juan Watersheds Conference

June 13, 2024

Bart Deming, Bureau of Reclamation Four Corners Construction Office
Construction Engineer

Navajo Settlements Signing Ceremonies



Navajo-San Juan Settlement Signing –
December 17, 2010



Navajo-Utah Settlement Signing –
May 27, 2022



Navajo-Gallup Water Supply Project (NGWSP)

Public Law 111-11
111th Congress

An Act

To designate certain land as components of the National Wilderness Preservation System, to authorize certain programs and activities in the Department of the Interior and the Department of Agriculture, and for other purposes.

Mar. 30, 2009
[H.R. 146]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Omnibus Public Land Management Act of 2009”.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—ADDITIONS TO THE NATIONAL WILDERNESS PRESERVATION SYSTEM

Omnibus
Public Land
Management Act
of 2009.
16 USC 1 note.

- **Navajo-San Juan Water Rights Settlement**

- One of the Largest Indian Water Rights Settlement in U.S. History (largest in NM)
- Settles Navajo’s water rights on the San Juan River basin in New Mexico
- Bureau of Reclamation charged with designing and constructing NGWSP



March 30, 2009



History/Background

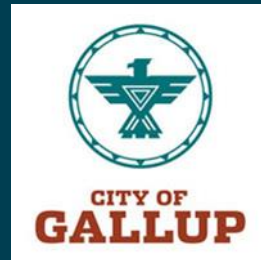


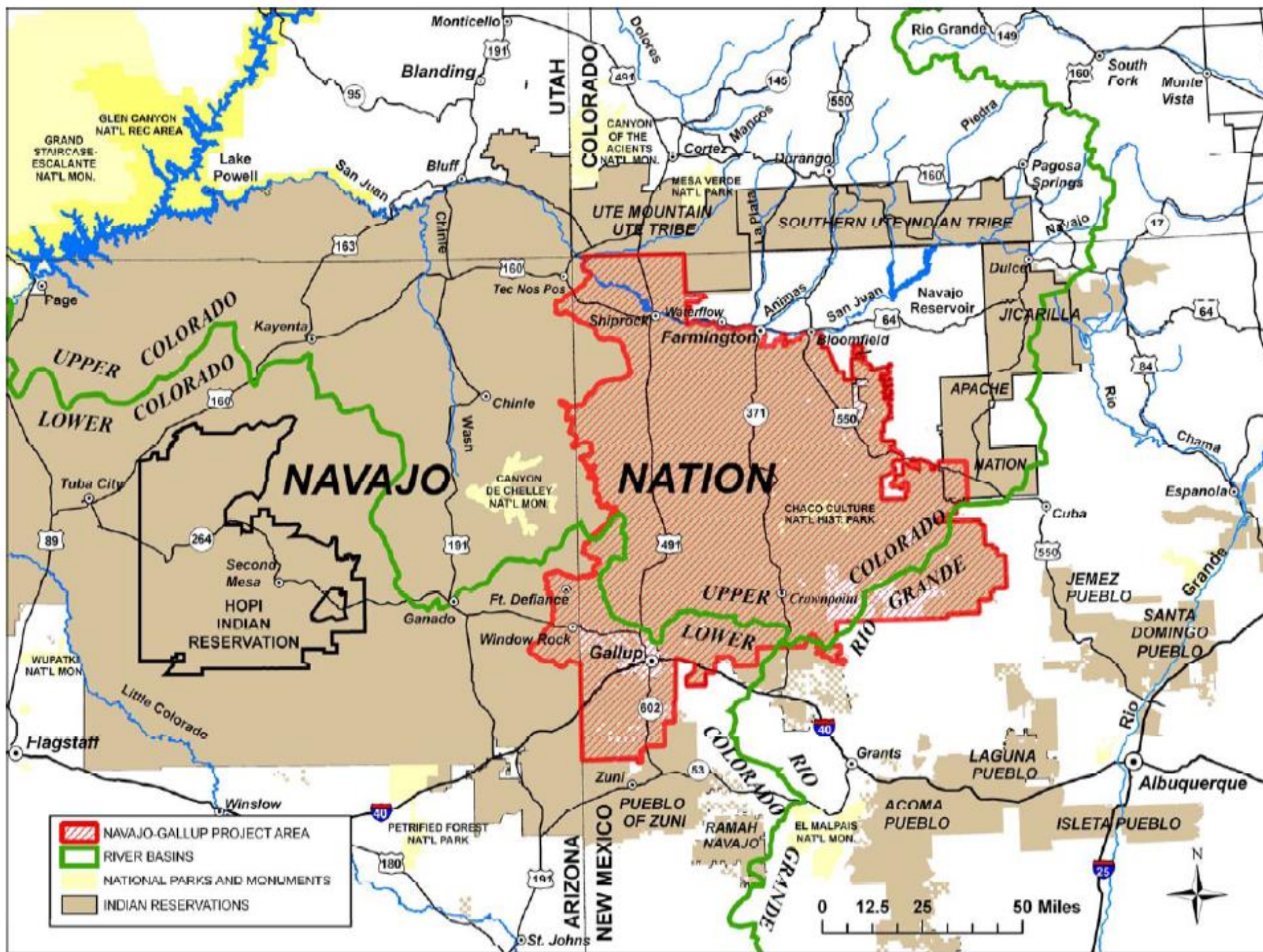
- 40% of People Living on the Navajo Reservation haul drinking water to their homes
- Current drinking water is poor quality from groundwater
 - Some wells contaminated with arsenic and other hazardous elements
- Dwindling and unsustainable groundwater supplies



Background / Need / Purpose

- Provide major infrastructure to secure and convey a long-term reliable drinking water supply for:
 - Eastern portion of the Navajo Reservation in New Mexico
 - Southwest portion of the Jicarilla Apache Reservation
 - City of Gallup
- Designed to meet current and future needs based on:
 - Population projections that assume increased growth rates as result of availability of water
 - Anticipated Housing and Business Growth





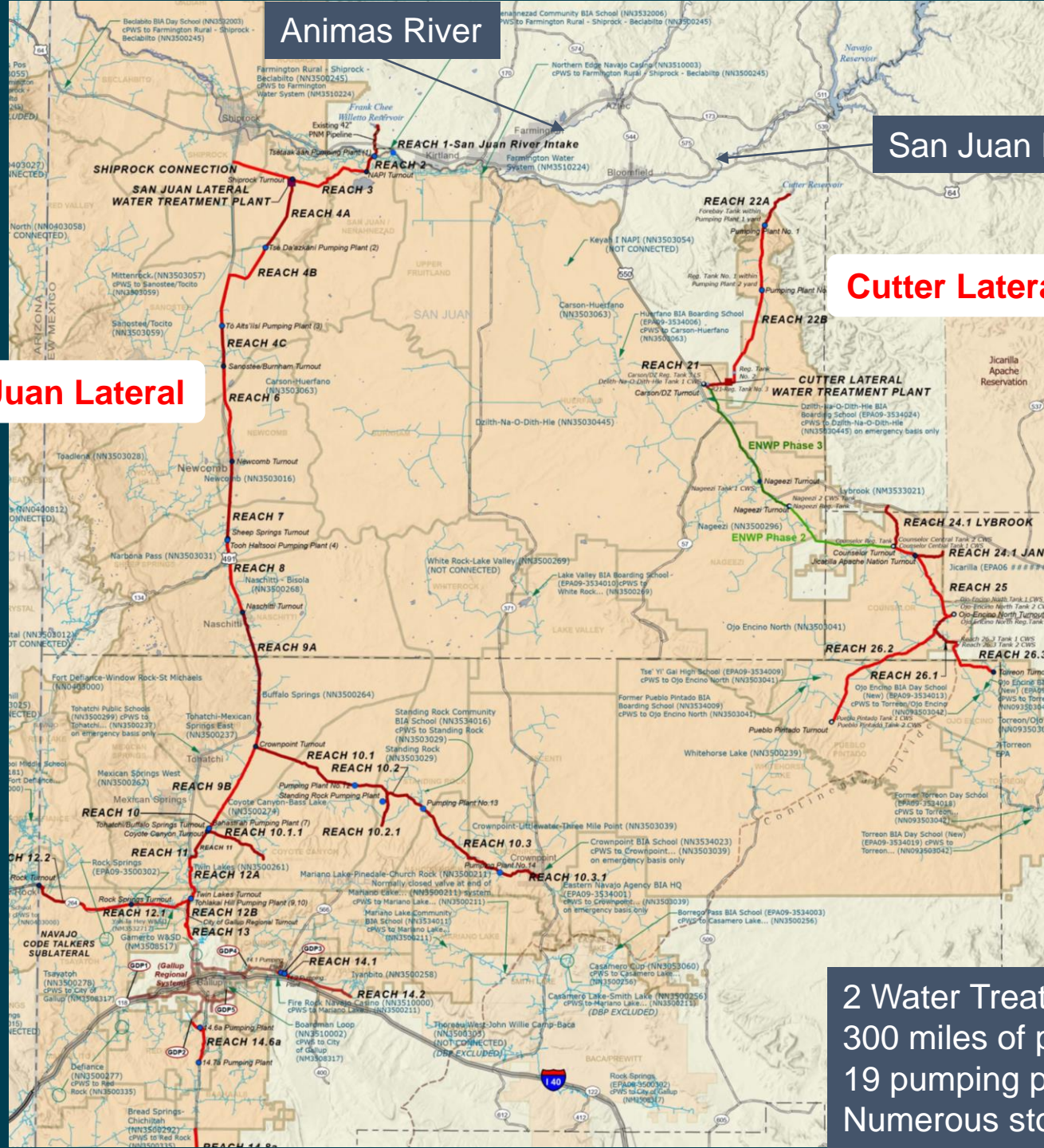
Project Details

San Juan Lateral

Animas River

San Juan River

Cutter Lateral



2 Water Treatment Plants
300 miles of pipeline
19 pumping plants
Numerous storage tanks



Project Details

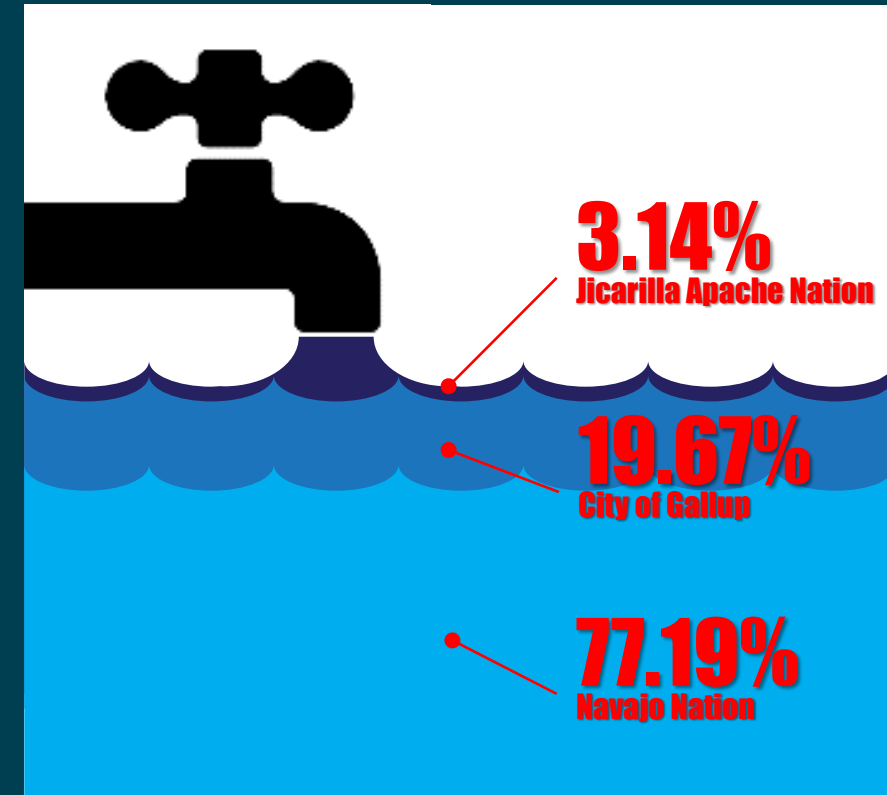


- Construction began – June 2012
- Deadline for completion – December ~~2024~~ 2029
- Reclamation has overall responsibility for completing Project, but partners are heavily involved.
- Reclamation will retain title (own) the majority of Project; eventually transferring to Navajo Nation (Reach 12b to the City) in the future
- Reclamation is and will be contracting with the Navajo Tribal Utility Authority to operate and maintain the Project

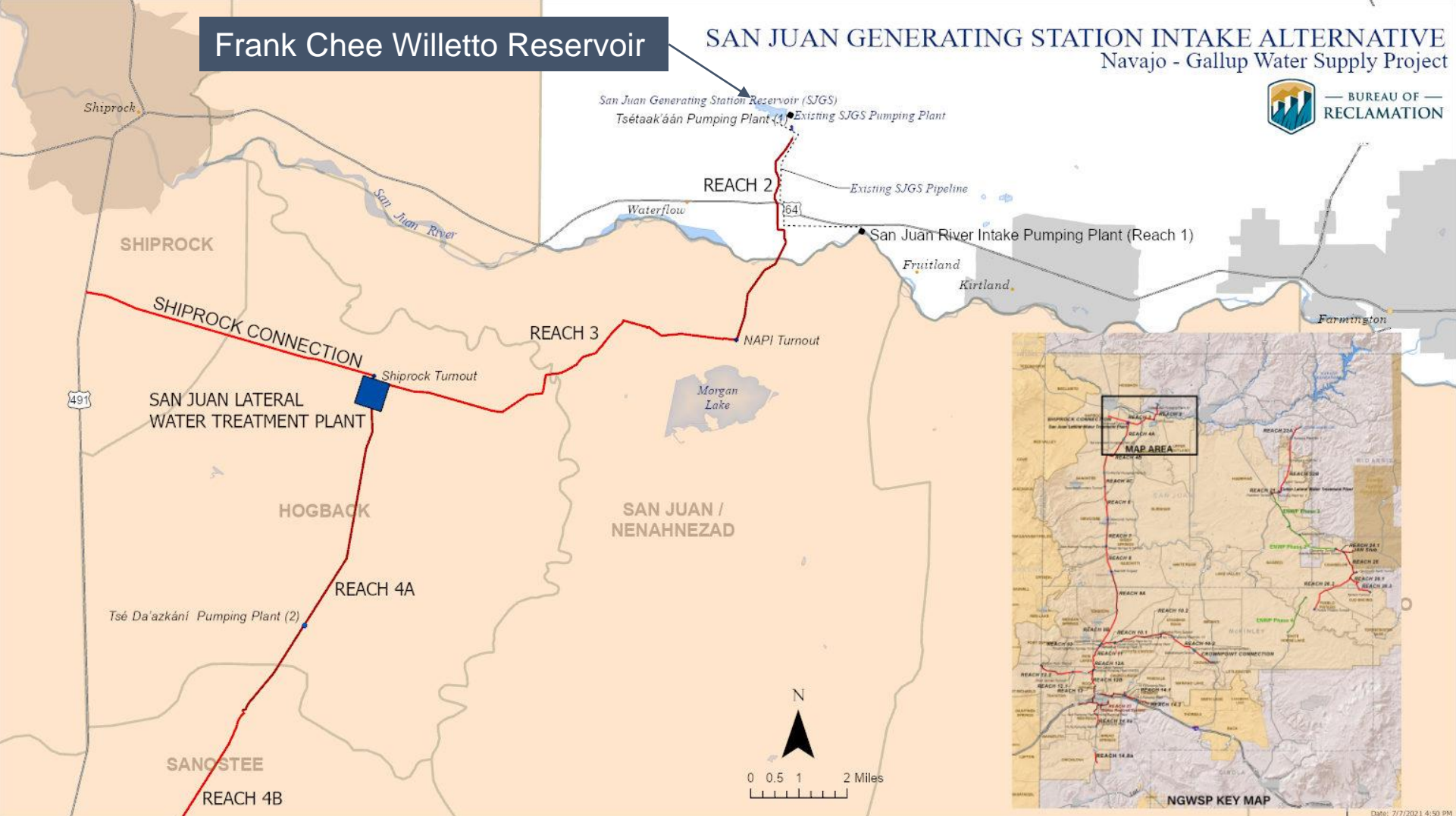


Project Details (cont.)

- Project water will meet drinking water standards
- Uses: Municipal, domestic, industrial, and commercial
- Water for Navajo uses comes from its water rights in basin
- Water for other beneficiaries provided by Jicarilla Apache
- Sequencing of Construction
 - Starting in area where demand is highest
 - Utilize existing wells as interim water supply to satisfy current demand
 - Service in 3-5 years vs. 8-10 years



San Juan Generating Station Intake Alternative



San Juan Generating Station Investigations

- “No Stone Unturned” Investigation with USGS
 - Analyzed decades of San Juan River water quality from USGS and PNM monitoring – 8,000 measurements
 - Similarly analyzed decades of PNM WQ data on reservoir corroborated by Reclamation 4-year study – 30,000 measurements
 - USGS collected reservoir bed cores and analyzed sediment chemistry
 - USGS conducted groundwater study of reservoir watershed



USGS - Frank Chee Willetto Reservoir Bed Coring

San Juan Generating Station Investigations

- Potential contamination sources
 - San Juan River,
 - the unnamed arroyo,
 - overland flow,
 - subsurface flow,
 - eolian deposits,
 - coal mining,
 - or coal combustion biproducts.

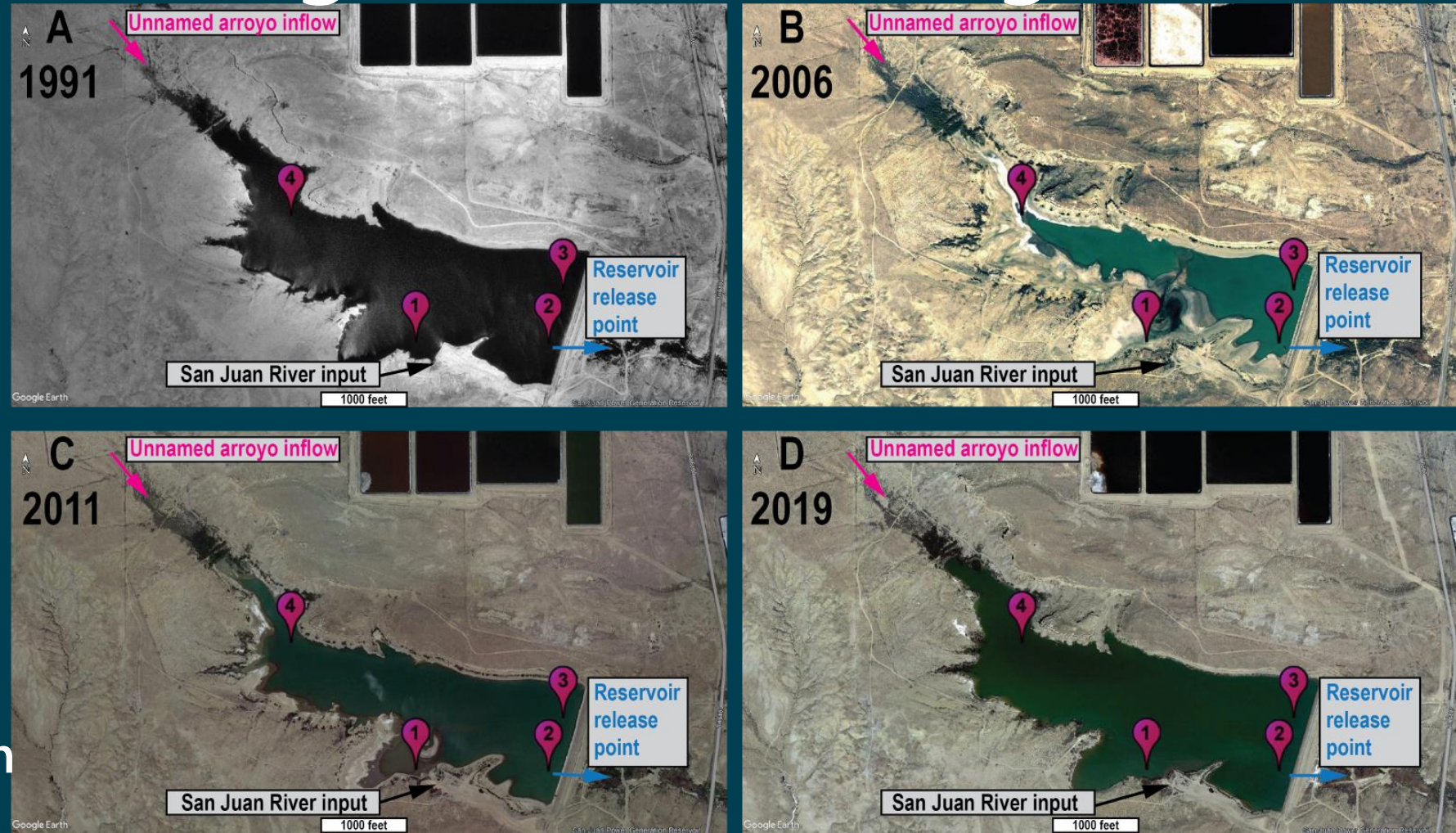


Figure 2. Time series photos showing the SJGS Raw Water Reservoir at four different time steps. Note the changing water levels which expose different sections of the reservoir at different times. The pink arrows show inflow from an ephemeral arroyo in the area. The blue arrows show where water can be released from the reservoir to flow down Shumway Arroyo to the San Juan River. The black arrows show where the water pulled from the San Juan River is pumped into the reservoir. – Reprinted with USGS permission.

San Juan Generating Station Investigations

• SAFE WATER FOR ALL

- Better raw water quality in Willetto Reservoir than river
- 99% reduction in total suspended solids
- 99% reduction in aluminum (total)
- 96% reduction in manganese (total)
- 91% reduction in chromium (total)
- No regulatory concerns for dissolved metals
- All river and reservoir samples below proposed PFAS reg. limits

SAFE WATER FOR ALL

Navajo-Gallup Water Supply Project San Juan Lateral

San Juan River
8,000 Measurements for water quality

Frank Chee Willetto Reservoir
68 Days of storage at startup
28,000 Measurements for water quality

San Juan Lateral Water Treatment Plant
18.8 Million gallons per day of capacity
37.6 Million gallons per day of future capacity

San Juan Lateral Wholesale Distribution System
109 Miles of pipe

Safe Drinking Water Quality

- ✓ **Primary Drinking Water Standards**
 - ◆ No contaminants of concern are above USEPA and NNEPA regulatory limits
- ✓ **Secondary Drinking Water Standards**
 - ◆ No water quality concerns of significance
 - ◆ Tracking of manganese and aluminum occurrence will be needed
- ✓ **Future Regulations**
 - ◆ River and Reservoir samples were all below proposed regulatory limits for PFAS

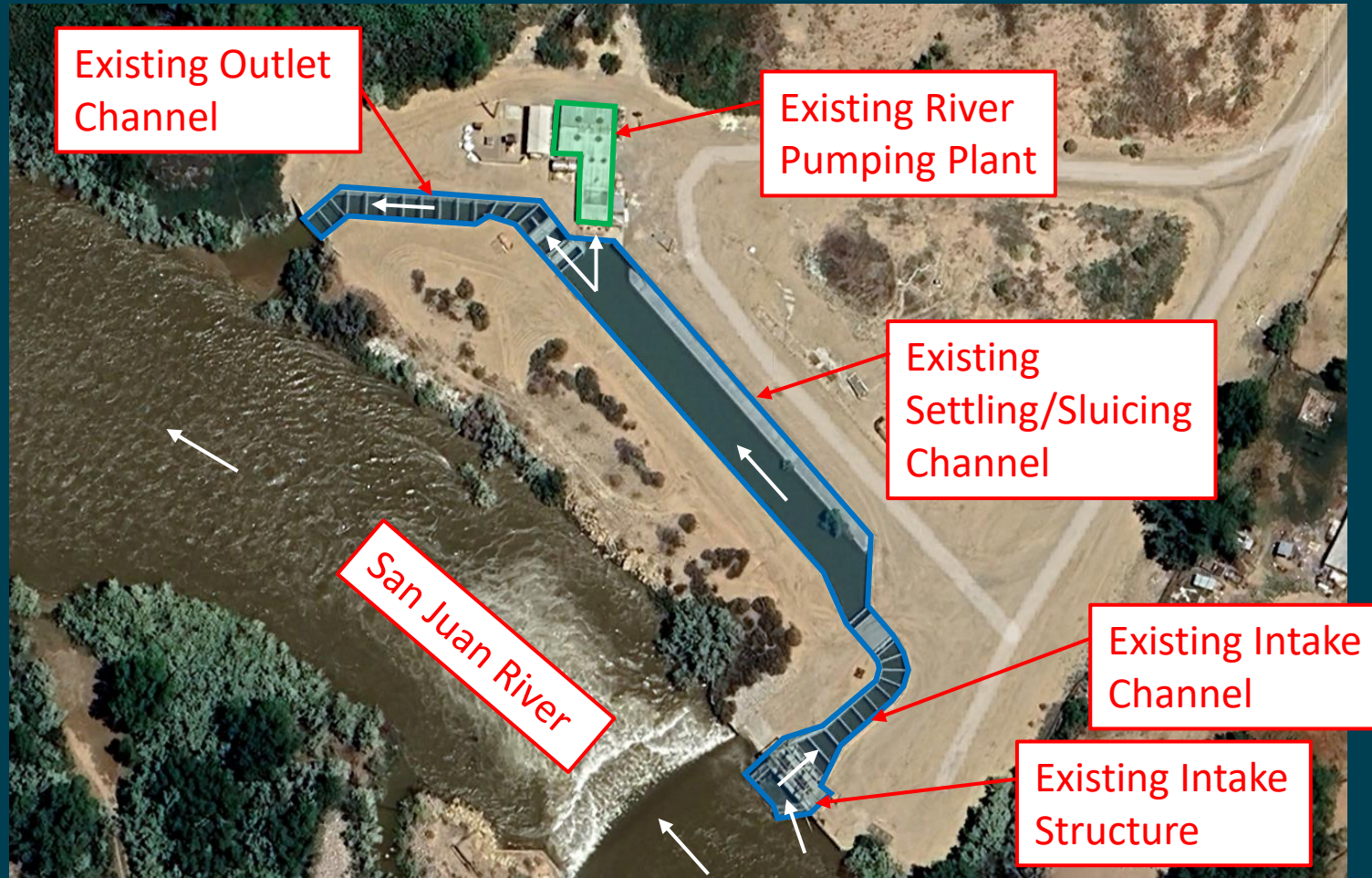
Reservoir Storage

Reservoir storage provides the ability to shut down the river intake whenever the river water quality declines

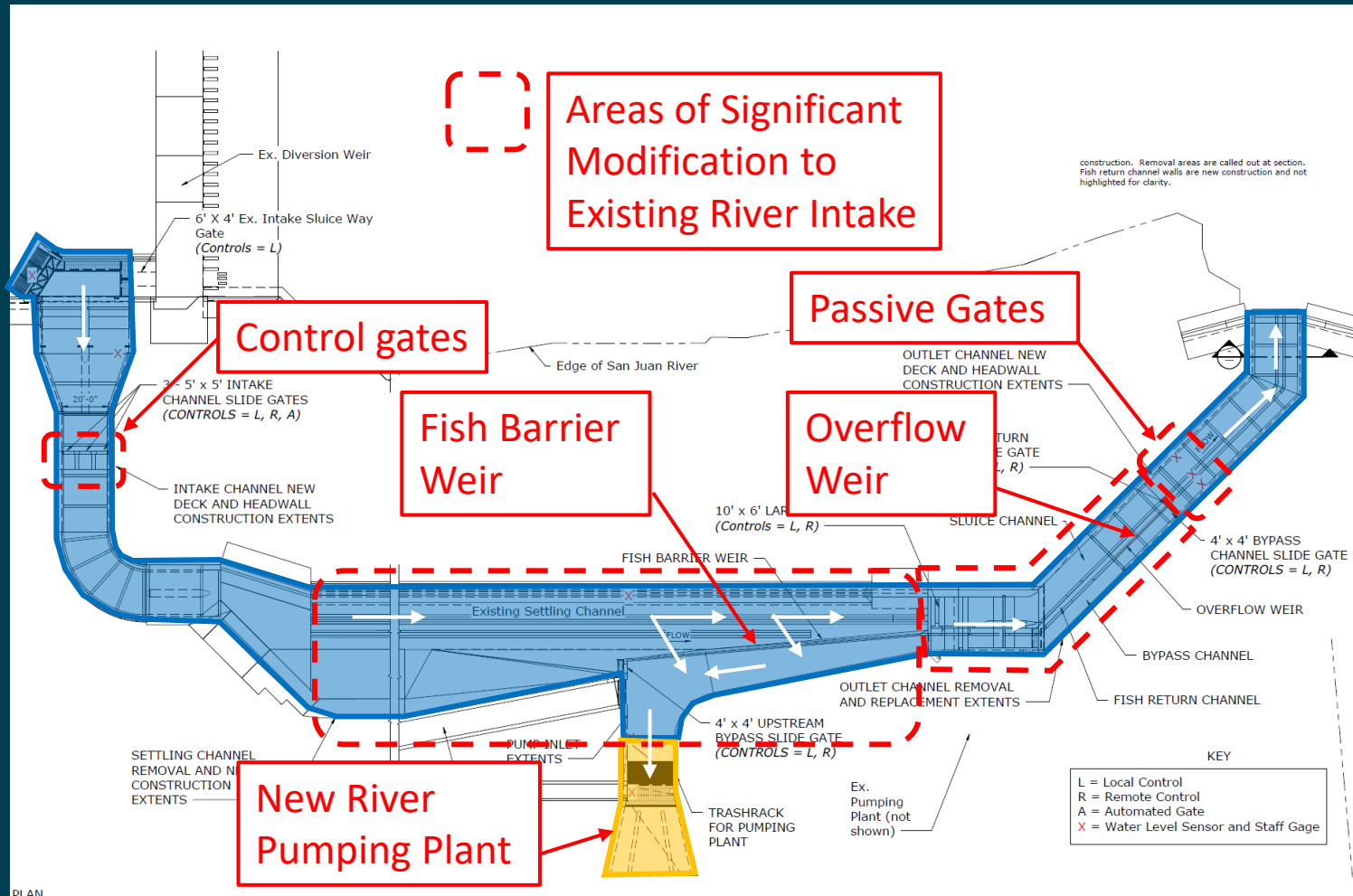
**A Reliable
Water Supply**



Existing River Intake and Pumping Plant



River Intake Areas of Modification



River Intake Design

- **Fish Barrier Weir**

- Designed to divert 71 cfs to the new pumping plant w/ 4-inch depth
- 123 ft long with an adjustable blade crest
- Two design crest elevations targeting two different river flow lower bounds:
 - Initial: Operation between 500 cfs and 6600 cfs
 - Future: Climate Change adaptability between 250 cfs and 5400 cfs

- **Fish Criteria:**

- Target fish species are Colorado pikeminnow & razorback sucker
- Min. 2 ft/s sweeping velocity in fish return channel
- Min. 1.5 ft flow depth in fish return channel
- Min. 1.0 ft gate opening height (or fully closed)
- Max. 4-inch flow depth over fish barrier weir



Fish Barrier Weir

- Patterned after Fish Barrier Weir at Hogback Diversion



Hogback
Diversion
Channel

Fish Barrier
Weir

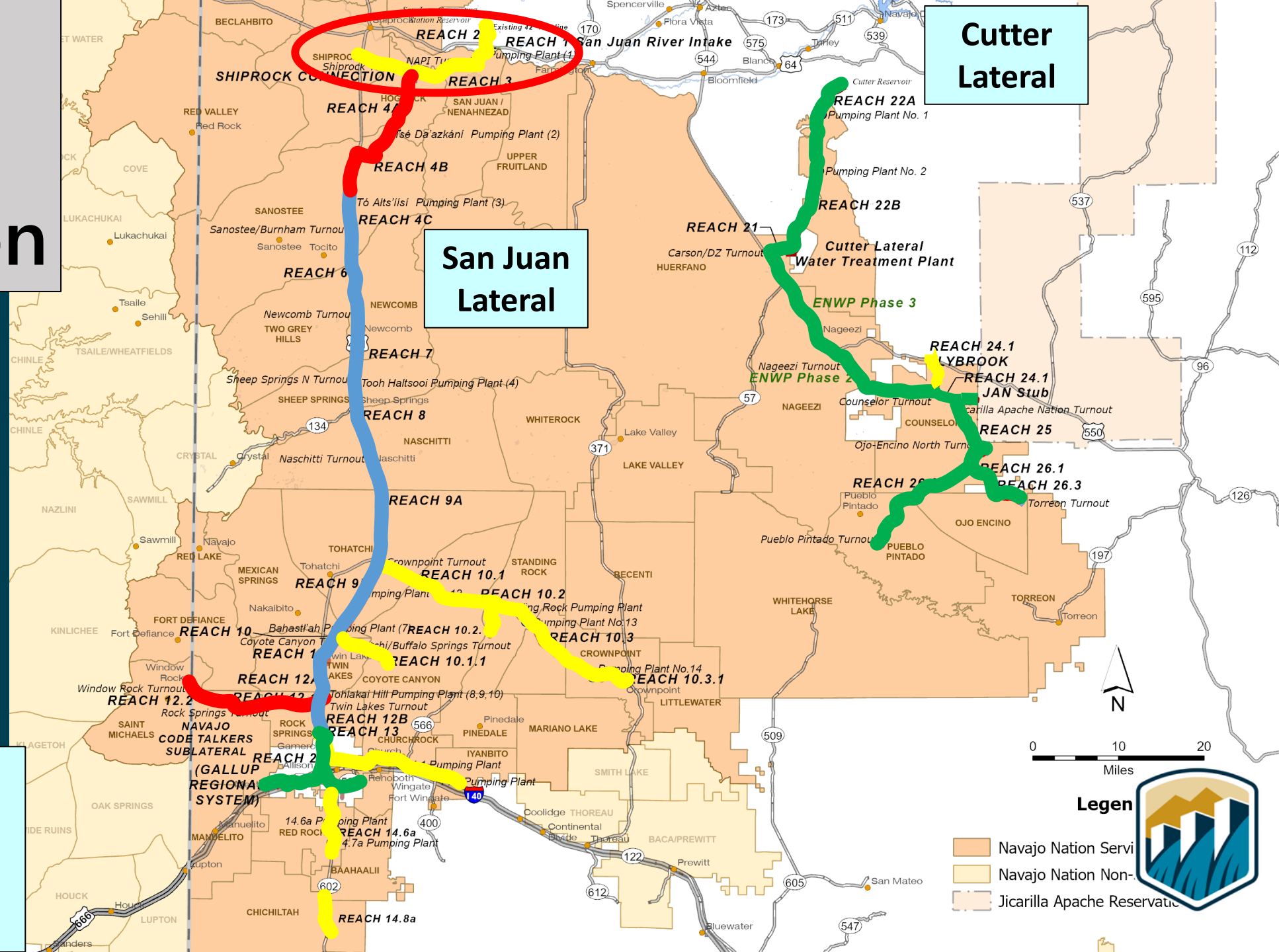
Hogback
Canal



Status of Project Construction

(As of June 2024)

- █ Operational
- █ Completed
- █ Under Construction
- █ In Design



San Juan Lateral

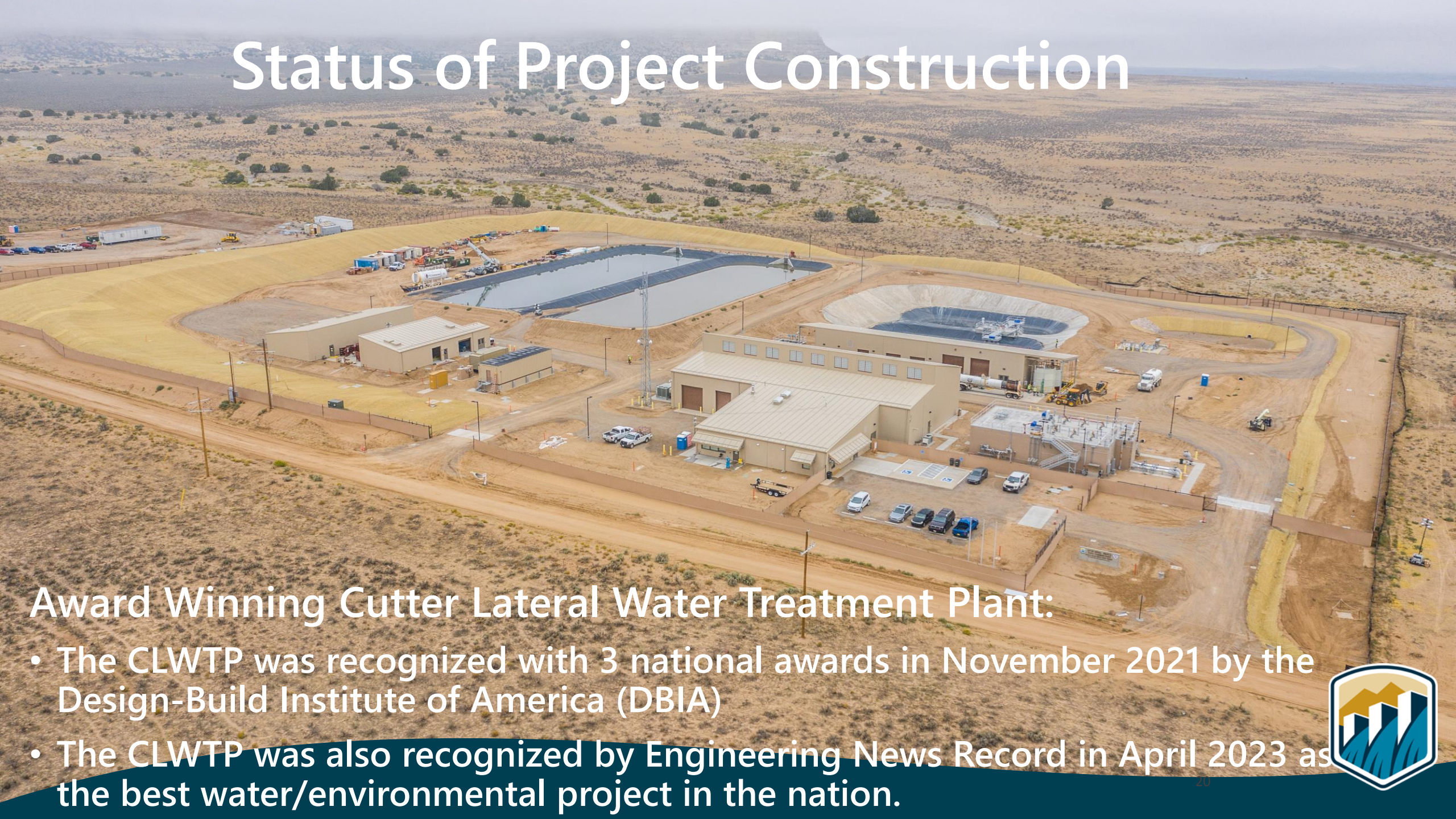
Cutter Lateral

Legend

- █ Navajo Nation Servi
- █ Navajo Nation Non-
- █ Jicarilla Apache Reservat



Status of Project Construction



Award Winning Cutter Lateral Water Treatment Plant:

- The CLWTP was recognized with 3 national awards in November 2021 by the Design-Build Institute of America (DBIA)
- The CLWTP was also recognized by Engineering News Record in April 2023 as the best water/environmental project in the nation.



Status of Project Construction



Pumping Plant 4 Interior Pump Room



Pumping Plant 7 Aerial Photo



BOTTOM LINE...

- Safe Drinking Water for the Navajo people!
- Economic development and job growth opportunities.
- First Project water delivery on Cutter Lateral & transfer to O&M --- 2020 - 2022
- First Project water delivery on San Juan Lateral, completion of the Project, and fulfillment of the United States' and State of New Mexico's commitment to the Navajo people in 2028/2029



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Four Corners Construction Office

QUESTIONS?



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