



Navajo Nation
Department of Water Resources
P.O. Box 678
Fort Defiance, AZ 86504

Oljato Drought Resiliency Well Construction

Prepared for:
Navajo Nation

Prepared by:
Wood Environment & Infrastructure Solutions, Inc.
Socorro, NM 87801
October 16, 2019

Table of Contents

- I. Executive Summary..... 1**
 - A. Date, Name, City, County and State.....1**
 - B. Project Summary1**
 - C. Length of Time and completion date (month/year)1**
 - D. Is the Project on a Federal Facility.....1**

- II. Background Data..... 2**
 - A. Background2**
 - B. More data3**

- III. Project Location 5**

- IV. Project Description and Milestones 7**
 - A. Description7**
 - B. Milestones.....8**

- V. Performance Measures 8**

- VI. Evaluation Criteria 9**
 - A. Project Benefits9**
 - B. Drought Planning and Preparedness 10**
 - C. Severity of Actual or Potential Drought Impacts to be addressed by the Project. 11**
 - D. Project Implementation 13**
 - E. Nexus to Reclamation 14**
 - F. Department of the Interior Priorities..... 15**

- VII. Project Budget 16**
 - A. Funding Plan and Letters of Commitment 16**
 - B. Budget Proposal 17**
 - C. Budget Narrative 18**

I. Executive Summary

A. Date, Name, City, County and State

October 16, 2019,
Navajo Nation Department of Water Resources
Fort Defiance,
Apache County,
Arizona

B. Project Summary

The preliminary engineering has been completed by Brown and Caldwell for the Oljato Well Project in the Navajo Nation Oljato Chapter in Utah. The alluvial well is expected to be up to 450 feet deep and yield 150 gpm. Due to its water sources, the Oljato Public Water System (NN4900224) is a high drought risk system. The Navajo Nation has committed \$200,000 for final design and permitting. The Navajo Nation is seeking funds from the Navajo Utah Trust Fund and from the U.S. Bureau of Reclamation, Design and permitting should be completed by November of 2020.

C. Length of Time and completion date (month/year)

The preliminary engineering has been completed by Brown and Caldwell for the Oljato Well Project. The Navajo Nation has committed \$200,000 funding for final design and permitting which should be completed in July 2020. If funding from Reclamation is available in July 2020, drilling will begin in October of 2020 and it will be completed by November 2020.

D. Is the Project on a Federal Facility

The Oljato Well Project is on the Navajo Nation, it is not on a federal facility.

II. Background Data

A. Background

The October 2019 National Drought Mitigation Center Drought Monitor continues to show the Four Corners area, including southeastern Utah, in extreme drought. The State of Utah and the Navajo Nation have declared drought emergencies, and they have recently endured some of the driest conditions in more than 100 years. The entire Navajo Nation in Utah is suffering from drought. The October 2019 Climate Prediction Center Seasonal Outlook is for drought to persist in this area. We are asking Reclamation to assist with drilling the Oljato drought well under its drought authority.

The Navajo Nation has submitted a drought plan to the U.S. Bureau of Reclamation pursuant to the Reclamation States Emergency Drought Act, to address chronic drought conditions. This plan is available on the Navajo Nation Water Management website. Since that plan was approved, Reclamation has been extremely helpful assisting the Nation during drought.

The Oljato Chapter Public Water System (NN4900224) is being negatively impacted by drought. The Chapter has a population of more than 2,400 people in more than 500 households. Approximately 280 of those households lacking plumbing. Due to the number of alluvial wells in the Chapter, Oljato is highly sensitive to drought and chronic water shortages. The Navajo Nation is working with Reclamation, the Indian Health Service, and the Environmental Protection Agency to prioritize modifications to stabilize the public water systems in Oljato. Reclamation has conducted several water supply appraisal level investigations in this area, Reclamation conducted pump tests on the OW8 observation well in Oljato, and Reclamation is conducting an aquifer storage and recovery study in this area. The most recent complete Reclamation investigation was of Well OW8. Well OW8 had been considered a candidate for rehabilitation as a drinking water supply well. However, the results of the Reclamation study are that the well will not be able to serve as a drinking water supply.

Some of the proposed water development alternatives are described in the *Hydraulic Engineering Analysis and Capital Improvements Plan for Aneth, Red Mesa, Teec Nos Pos, Dennehotso, Mexican Water and Oljato Public Water Systems, 2008* prepared for San Juan County, Utah in May 2010 by Brown and Caldwell. That report identifies alternatives which include additional wells and watering points. This proposed drought mitigation well could be as deep as 450 feet and drilled into the alluvial formation. The hydrogeology at this site has been well documented. Based on USGS pump testing in the area the new Oljato drought well is expected to produce 150 gpm with decent water quality.

The existing Oljato well number 1 was constructed in 1954. At 65 years of age it is operating beyond its design life and is at a high risk of failure. The new proposed Oljato well is planned to have a

pump at a hydraulic grade that will allow it to deliver water to the north side of the mesa. When combined with the plans Indian Health Service improvements to loop the water system around the southeast side of the mesa, it will resolve existing Goulding's Booster Pump Station capacity issues.

B. More data

To prioritize drought mitigation measures, NTUA ranked the drought risk of the 94 public water systems that it operates. The ranking was based on the percentage of households hauling water, the types of water sources, the system storage and the number of water sources. As shown in Tables II-1 and II-2 below, the Oljato public water system was in the highest risk category.

Table II-1. Number of NTUA Public Water Systems and Risk Assessment

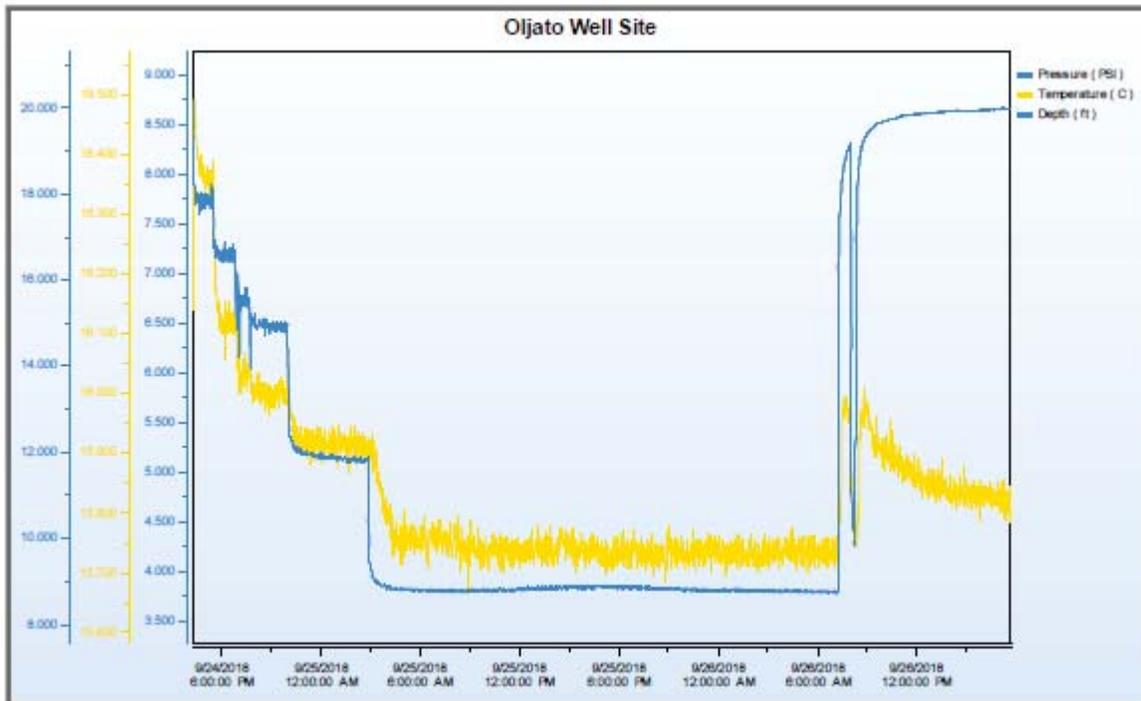
Hauling	Water Source (Type)	Adequate Storage	Sources	Score	# of Systems	Risk
% WH > 40%	All Alluvial Sources	No	One	5	0	Highest
			Multiple	4	4	Highest
		Yes	One	4	0	Highest
			Multiple	3	0	Med-High
	Some Alluvial Sources	No	One	4	0	Highest
			Multiple	3	1	Med-High
		Yes	One	3	0	Med-High
			Multiple	2	1	Medium
	No Alluvial Sources	No	One	3	9	Med-High
			Multiple	2	3	Medium
		Yes	One	2	4	Medium
			Multiple	1	10	Med-Low
% WH < 40%	All Alluvial Sources	No	One	4	1	Highest
			Multiple	3	0	Med-High
		Yes	One	3	0	Med-High
			Multiple	2	2	Medium
	Some Alluvial Sources	No	One	3	0	Med-High
			Multiple	2	1	Medium
		Yes	One	2	0	Medium
			Multiple	1	0	Med-Low
	No Alluvial Sources	No	One	2	10	Medium
			Multiple	1	14	Med-Low
		Yes	One	1	8	Med-Low
			Multiple	0	23	Lowest

Table II-2. NTUA Public Water Systems at Greatest Risk During Drought (System Population)

PWS Name	PWSID	Hauling > 40%	Alluvial Source	Adequate Storage	One Source	Total	Risk	Population (2018)
Houck	NN0400280	1	2	1	0	4	Highest	1,106
Rough Rock	NN0400396		2	1	1	4	Highest	499
Rock Point	NN0403048	1	2	1	0	4	Highest	891
Oljato	NN4900224	1	2	1	0	4	Highest	1,352
White Rock/ Lake Valley	NN3500269	1	2	1	0	4	Highest	515
Coyote Canyon	NN3500274	1		1	1	3	Med-High	672
Cottonwood	NN0403021	1		1	1	3	Med-High	1,402
Klagetoh	NN0403026	1		1	1	3	Med-High	1,075
Jeddito	NN0403100	1		1	1	3	Med-High	1,060
Mexican Hat	NN4903032	1		1	1	3	Med-High	269
Cameron	NN0403010	1		1	1	3	Med-High	780
Mariano Lake/ Pinedale/Church Rock	NN3500211	1	1	1	0	3	Med-High	4,838
Whitehorse Lake	NN3500239	1		1	1	3	Med-High	311
Haystack	NN3500254	1		1	1	3	Med-High	403
Red Rock	NN3500335	1		1	1	3	Med-High	1,836

The Navajo Nation had anticipated retrofitting an observation well in the area OW-8 as a municipal water source. The USGS conducted a pump test in September of 2018. Based on that pump test, the USGS concluded that OW 8 could yield 130 gpm. However, the USGS also concluded that OW-8 was not constructed as a municipal supply well, and it could not be retrofitted for municipal purposes. Consequently, a new well is needed. Based on these results, a well-constructed well in this area should yield 150 gpm.

Figure II-1 USGS Pump Test No. 2 2018-09-26 4:13 pm



III. Project Location

The Oljato Well Project is in the Oljato Chapter of the Navajo Nation close to the Utah Arizona Boarder. The following three images show the location of the Oljato Well Project.

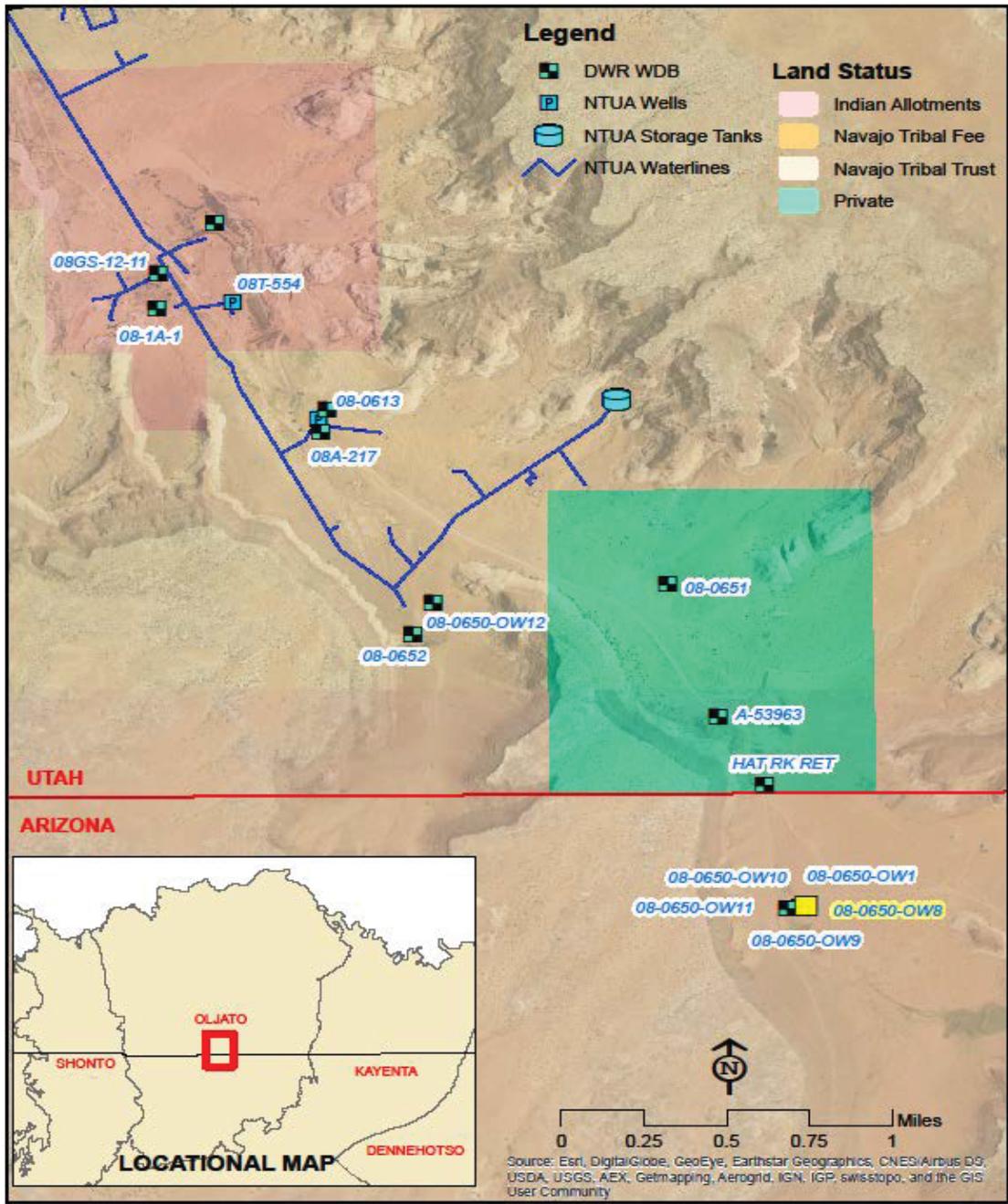


Figure III.1 Location Map from the Preliminary Engineering Report by Brown and Caldwell. The proposed well is in the green box less approximately 0.20 southwest of 08-0651.



Figure III.2 Google Earth Image of Oljato Well Project location.

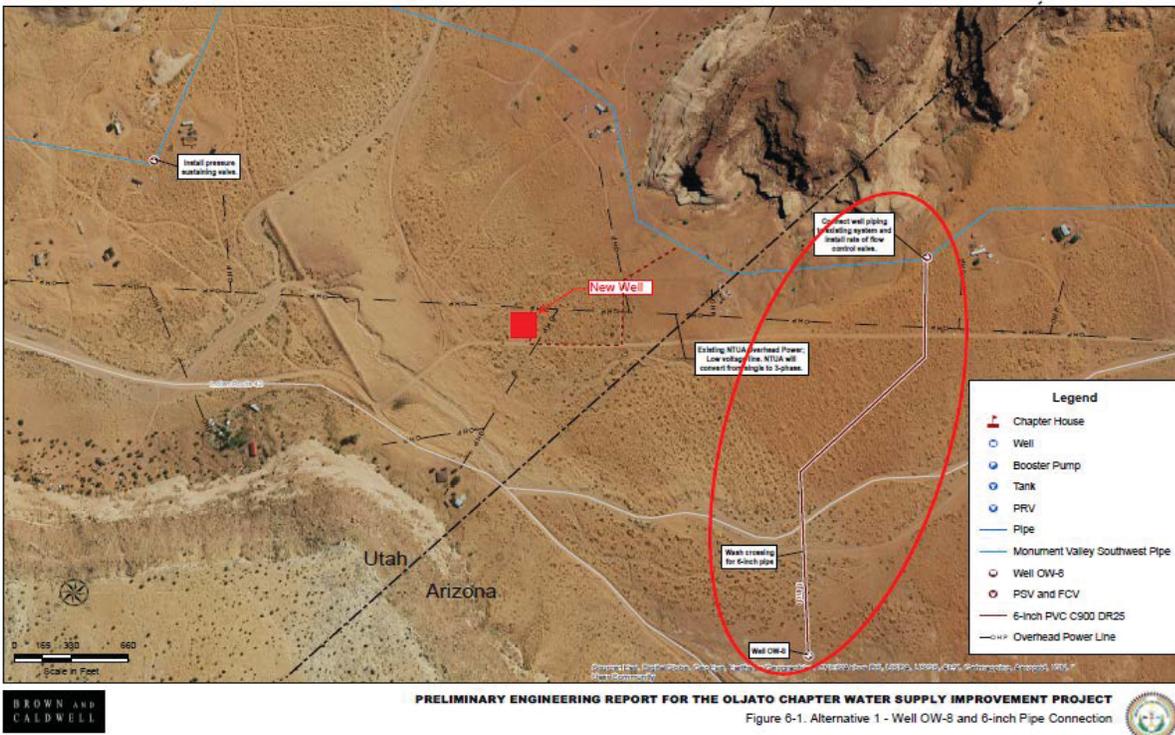


Figure III.3 Location of well from the Draft Brown and Caldwell Preliminary Engineering Report.

IV. Project Description and Milestones

This section presents the project description and milestones.

A. Description

The Oljato water system has an immediate and urgent need for additional water supply and a new reliable booster station. Operational records show available water supply facilities are functioning at capacity during the peak months of water use with no standby capacity. A failure of any of the existing wells would result in a serious water shortage. The existing wells were constructed in the 1950s and have reached the end of their useful lives. Future growth will continue to put pressure on the source capacity of the system and may require temporary water use restrictions until deficiencies can be resolved. The Oljato area has the potential for economic growth. Monument Valley Tribal Park had 274,832 visitors in 2010 and the number of visitors increased to 423,728 in 2014. Goulding's Lodge and Trading Post has plans to expand but needs additional water supply to move forward. The increase in tourism will spark commercial development and the Oljato water system needs these improvements to provide service for growth.

The need for a new well was first identified during the preparation of the Utah Navajo Chapters Regional Water Planning Project (completed in 2010). This project identified short- and long-term capital projects needed to meet the water supply and distribution system needs for the Utah Navajo Chapters, including Oljato. As part of the Project, a long-term Regional water supply plan was prepared that recommended bringing water to the Oljato Chapter from the San Juan River, a Master Public Water System Plan and hydraulic model to identify water distribution infrastructure needs, and a Chapter Water Plan, specific to the water supply and infrastructure needs of the Oljato Chapter. The Chapter Water Plan, prepared as part of the Regional Water Planning Project, identified the short-term need for additional supply capacity for the Oljato water system. Subsequent Preliminary Engineering (PER) and Environmental Reports (ER) were performed by the Navajo Nation Water Management Branch to further investigate the feasibility of water supply alternative solutions for Oljato. The PER recommended the addition of a new well source. The Navajo Nation Water Management Branch began exploring the connection of an existing monitoring well, Well OW-8 to satisfy the need. The Water Management Branch subsequently worked with Bureau of Reclamation to perform inspection and pump testing of Well OW-8 to determine if it was adequate for potable water service. Results indicated that the well could yield 130 gpm, however OW-8 was not usable for municipal purposes, so a new well is needed. The alluvial aquifer in this area can readily yield 150 gpm.

Design and permitting of the well are currently underway. The new 14-inch diameter well would be drilled by Reclamation near the Utah Arizona border as shown in attached figure. It could be as deep as 450 feet and drilled into the alluvial formation. The hydrogeology at this site has been well documented. Based on the Reclamation pump test, a well yield of 150 gpm is expected, or 120 acre-feet per year is expected.

The cost estimate for constructing the new Oljato Well is estimated to be \$691,400 as itemized in Table 1. Besides seeking funds from the Utah Navajo Trust Fund, Navajo Nation Water Management Branch is seeking money from other sources to pay for the project. A \$300,000 grant is being sought from Reclamation to help pay for the drilling. The Navajo Nation is providing \$200,000. The Utah Navajo Trust Fund is expected to \$191,000 for this project.

Additional funding will be solicited from United States Department of Agriculture (USDA) for equipping and connecting the well to the water distribution system. Indian Health Service (IHS) is also participating in SDS system improvements by designing and constructing other piping connections so that supply from the well can be conveyed to the northern reaches of the water distribution system (The Oljato Monument Valley and Boot Mesa Intertie, Project No. NA-19-U85). This proposed drought well will complement the Indian Health Service system upgrades. This well will greatly improve the system's water availability.

B. Milestones

Design and Engineering and permitting is being funded by the Navajo Nation. It should be completed in July 2020. Assuming that the award is made in July 2020, drilling and construction could occur in October 2020 and be completed in November 2020. For this proposal Navajo Nation will be the fiscal agent and will contract for the drilling services. However, it is possible that Reclamation would prefer to contract for the drilling internal or through a sister agency like the USGS. The USGS conducted the OW-8 pump test for Reclamation and the USGS is the lead for the Reclamation aquifer storage and recovery study.

V. Performance Measures

The key performance measure is to have the well constructing begin in the Fall of 2020. Among the performance measures to be considered are to have the design and the permitting completed by the July of 2020, the driller on site in October and the drilling completed in November.

The well is expected to have a capacity of 150 gpm and it will be metered. The well is expected to begin operating 12 hours per day. The community system currently has 358 service hookups. The current system maximum potential capacity is reported as 185 gpm and 110 homes in the area haul water from this system.

VI. Evaluation Criteria

In this section addresses the Reclamation Evaluation Criteria.

A. Project Benefits

1. How will the project build long-term resilience to drought? How many years will the project provide benefits?

The Oljato Public Water system has been characterized by NTUA has being in its highest drought risk category. The Indian Health Service is unable to extend more waterlines to unserved home until water availability can be addressed. However, based on the USGS pump testing of OW-8, this well will provide immediate relief to a water stressed system by providing 150 gpm of alluvial aquifer water. Or, assuming it is operating 12 hours per day, 120 acre-feet per year. This volume is an increase of more than 40 percent to the system capacity. Based on the Indian Health Service June 19th feasibility study, the current reported maximum potential capacity of the Oljato system is 185 gpm. However, the system is relying on the existing well that is more than 65 years old. This new well will provide more reliable potable water to 358 service hookups and the 110 households that haul water from the system.

Building an additional well will not address the limitations due to the water supply constraints of the alluvial aquifer. That constraint will require a waterline from the San Juan River which may take many years to achieve. However, when the San Juan River connection is made, this well will continue to serve the community by pumping water alluvial water as a secondary water source during droughts or when the water quality in the river is poor. And, it could possibly be part of a system in the future to pump water from the San Juan River to be recharged into the alluvial aquifer. Reclamation and the USGS are conducting an aquifer storage and recovery study in this area. This well will provide immediate improvements to the health and human safety of this residents on the public water system, and it will provide benefits to the resident that will soon be served by this water system when connections to their homes are made.

The current plan is to ream at 12 and ¼ inch pilot hole. That hole will be pump tested, and if warranted it will be reamed out to 19 inches and a 14-inch diameter casing will be installed. The hole is expected to be 450 feet deep. The well will have a 20-year design life. With normal OM&R that life is expected to be 40 years.

2. Will the project make additional water supplies available?

Yes. Based on the USGS pump test of OW-8, the new well will make an additional 150 gpm of alluvial water available to the public water system. Operating 12 hours per day, it will provide 120 acre-feet per year. The existing Oljato well number 1 was constructed in 1954. At 65 years of age it is operating beyond its design life and is at a high risk of failure. The new proposed Oljato well is planned to have a pump at a hydraulic grade that will allow it to deliver water to the north side of the mesa. When combined with the plans Indian Health Service improvements to loop the water system around the southeast side of the mesa, it will help to address the existing Goulding's Booster Pump Station capacity issues.

3. Will the project have benefits to fish, wildlife or the environment?

The project is not intended to provide direct benefits to fish, wildlife or the environment. However, it will serve a community that is chronically short of water. Residents will have the opportunity to use water supplied from the well for their homesteads. Water may be used for small home gardens, livestock they rely on for subsistence living, and to feed plants around their homes that provide an aesthetic environment for their living. By using a regulated water source for their vegetables, fruits, meat and poultry, they are reducing health risks often associated with using unregulated water sources. The natural environment, including birds, pollinators, and other insects, will benefit from the vegetables, fruits, trees, bushes, and flowers planted.

The well will be metered, and all NTUA customers served by this well are metered.

B. Drought Planning and Preparedness

1. Copies of the applicable plans

The Navajo Nation Drought Response Plan and the NTUA Drought Response Criteria are attached. The Navajo Nation has a drought response plan that was developed with the assistance of Reclamation. It benefited from the input of all of the Navajo Nation tribal programs that deal with emergency response and natural resources. Pursuant to the plan, the Navajo Nation publishes monthly drought status reports. It has been reviewed and updated by ASU and U of A, and it is in the process of being updated.

NTUA has four-stage drought response criteria that NTUA follows when the systems that it operates are impacted by droughts. During the initial stages, public education regarding

drought and water supplies is made available to the customers. During the high stages certain categories of water use are restricted or prohibited. These criteria have been reviewed for potential updates by Wood.

2. How the applicable plan address drought?

The Navajo Nation drought response and mitigation plan is primarily driven by the 6-month SPI for determining drought responses. Pursuant to the plan, the Navajo Nation publishes monthly drought status reports. Based on these reports specific program and agencies, like NTUA and the Navajo Department of Agriculture can follow their specific drought protocols. The plan also establishes mitigation criteria for establishing drought risk on public water systems. Those criteria were applied to the Oljato public water system which indicated that it is a high-risk system. (See Table II-1 and II-2.) The NTUA four stage drought response criteria is based on the progressive impairment in the ability of an NTUA public water system to supply demands. The proposed well is a mitigation measure that will reduce the drought risk category of this public water system. **Although the Navajo Nation is familiar with climate change and its implications, the current drought plan has not explicitly incorporated climate change as a discrete topic. Future updates of the plan will do so.**

3. How is the proposed project is supported by the existing drought plan?

Using the basic drought risk criteria in the Navajo Nation drought plan, NTUA ranked the drought risk of its 94 public water systems. (See Table II-1 and II-2.) The Oljato Public Water system has been characterized by NTUA as being in the highest risk category. Building an additional drought mitigation well will provide more water supply and more redundancy on this water short system. This will improve reliable for the 358 connections and the 110 households that haul water.

This well project will not address the limitations due to the alluvial aquifer. That limitation will need to be addressed by a waterline from the San Juan River. But, if and when, that San Juan River connection is made, the Oljato Drought Well will continue to serve an important water supply and drought mitigation capacity described as a need in the drought plan.

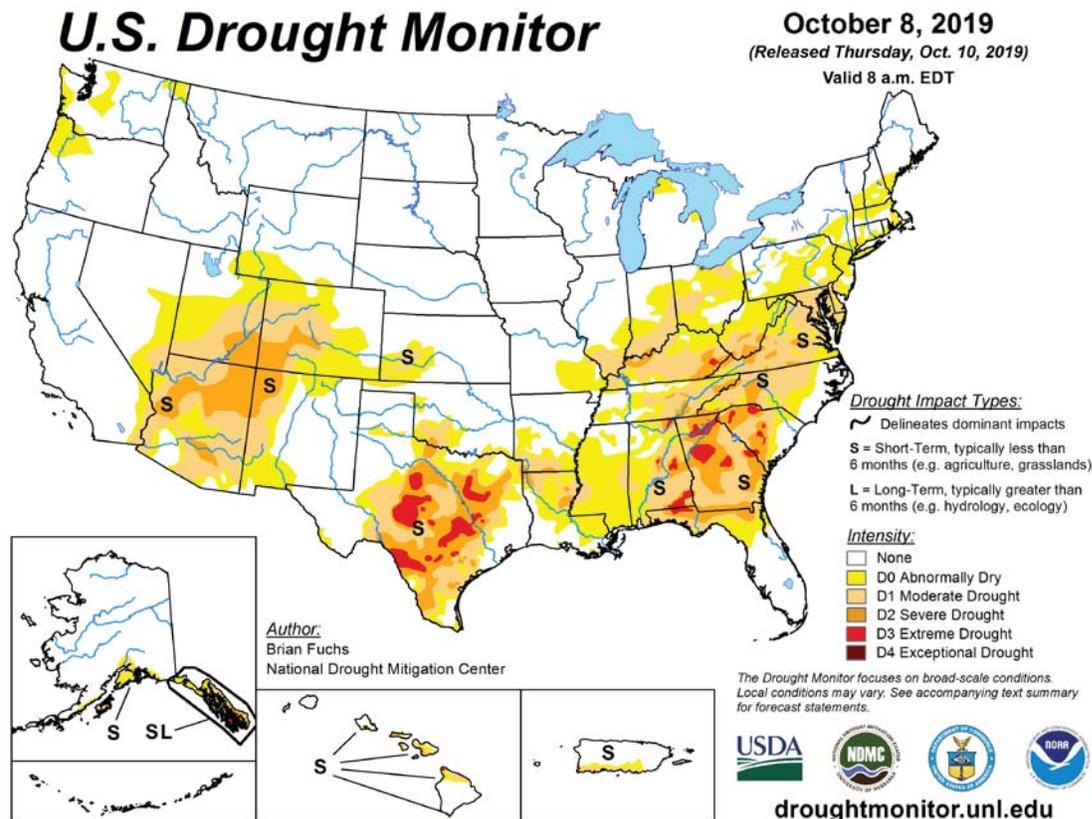
C. Severity of Actual or Potential Drought Impacts to be addressed by the Project.

1. Describe the Severity of the Impacts.

The October 8 draft Drought Monitor shows that Oljato straddles the area between the moderate and severe drought. The 2019 monsoon has been one of the driest on record. Even with a relatively wet winter, the area has not recovered from many years of extreme drought conditions. The future climate projections do not show any signs of relief. The alluvial aquifers across the Navajo Nation are extremely susceptible to stress during prolonged droughts.

During drought many of the local stock ponds and wind mills go dry. This condition forces those water haulers to go to the nearby community water systems for water. In this case the Oljato water system has no excess capacity to absorb these impacts. This forces water haulers to drive longer distances to find water which is an economic hardship. In addition, the water reliability for the service connections on the system goes down. In an area with hundreds of thousands of tourists, this public water system has inadequate capacity to enable economic development.

This system has not had Navajo EPA violations. However, the quality of the water declines during prolonged droughts.



D. Project Implementation

1. Implementation Plan

The Navajo Nation and NTUA have a very successful track record of executing water well projects. Drought wells have been drilled in Window Rock, Lupton and Alamo. Drilling will begin in October in the Ganado Chapter for the Lower Greasewood N0 Well. And the Nation is preparing for a well in the Bodaway Chapter and in 2018 the Indian Health Service completed a well in Tuba City.

Table VI-1. Milestone Table

Milestone	Date
Award Design, Engineering and Permitting modification	Nov 2019
Design and Engineering	April 2020
Tribal Permitting	April 2020
NEPA Compliance for drilling	July 2020
Contract with Driller	September 2020
Mobilize Drilling	October 2020
Complete Drilling	November 2020

The Navajo Nation will retain an engineering consultant to complete the design, engineering and permitting. The construction and drilling process will be addressed through an open bidding process.

Navajo Nation will be the fiscal agent for the Reclamation proposal. The drilling crew can be contract by the County. However, it is also possible that the drilling and well construction could be handled directly by Reclamation. The USGS conducted the recent pump testing at OW8 for Reclamation and is the lead for reclamation on the ASR Study.

2. Permits required

The Navajo Nation has agreed to fund the contractor that will address the permitting process for the Oljato Well. The drilling site clearance will be approximately 150 by 150 feet. This work includes archeology and biological clearances, among others, for NEPA compliance. The driller will secure water code drilling, water use permits and addressing storm water. Navajo EPA also has a permitting program for the review of construction of public water systems. **There are no known unusual circumstances that would require specialized permitting. The site can be configured to avoid problematic areas.**

3. Design work performed

The Navajo Nation had Brown and Caldwell conducted regional water plans and capital improvement plans in the area. Reclamation has completed value planning and appraisal level studies in this area. Brown and Caldwell has also completed a draft preliminary engineering report for this system. The Navajo Nation has committed funding to complete the final design and permitting.

4. Describe new policies

No new policies are needed.

5. Describe environmental compliance

The current Navajo Nation contract scope for permitting will address environmental compliance and permitting. This scope and budget for permitting is based on clearance of well sites in Lower Greasewood, Alamo and Bodaway Chapters on the Navajo Nation. It is anticipated that the clearance scope of work will be handled by the same Navajo Nation Water Management Branch contractor and contract modification that will execute the design and engineering. However, the Navajo Nation is open to working directly with Reclamation on the permitting task.

E. Nexus to Reclamation

1. How is the proposed project connected to a Reclamation Project or activity?

The Navajo Nation and Reclamation have executed an MOU to further the long-term partnership between the Navajo Nation (Nation) and the United States Bureau of Reclamation (Reclamation) in support of the Nation's efforts to develop its water resource. This MOU was first executed in March of 2000 and has been affirmed by all of the subsequent Reclamation Commissioners. It is anticipated that an update version will be executed in December 2019. The Oljato Well Project fits within that strategy.

Reclamation completed a 2018 Value Planning Study that includes this area. The purpose of that study was to identify, define, and compare the most cost-effective alternatives to meet the water needs of the Utah portion of the Navajo Nation. This study supported the development of settlement legislation for the Navajo Nation water rights settlement in Utah. Reclamation has also completed several appraisal level studies that include the Oljato service area. And, Reclamation is conducting an aquifer recharge and recovery study in this area.

2. Will the project benefit any Tribe?

Yes. It will benefit the Navajo Nation. The Navajo Nation was created in 1868 pursuant to a treaty between the Navajo Nation and the United State governments. It covers 27,000 square miles and encompasses a population of more than 180,000. NTUA operates more than 94 public water systems on the Navajo Nation.

3. Does the applicant receive Reclamation project water?

Yes, the Navajo Nation has Secretarial water contracts for Lake Powell and for Navajo Reservoir water. The Oljato Chapter is served by alluvial groundwater.

4. Is the project on Reclamation land?

No. It is on Navajo Nation trust land.

5. Is the project in same basin as a Reclamation project?

Yes. The project is in the Colorado River Basin.

Reclamation on the permitting task.

F. Department of the Interior Priorities

1. Creating a conservation stewardship legacy

In March 2000 the Navajo Nation and Reclamation executed an MOU to further the long-term partnership between the Navajo Nation (Nation) and the United States Bureau of Reclamation (Reclamation) in support of the Nation's efforts to develop its water resource. This project fits within that legacy.

2. Utilizing our Natural Resources

Water is life. That is not just a cheap cliché on the Navajo Nation. The value of water is never underestimated in communities that have so little of it. This project will enable the use of a very precious natural resource.

3. Restoring trust with local communities

There is a trust responsibility associated with service to tribal communities. Fortunately, the Navajo Nation has worked with countless Reclamation employees that live up to that responsibility. The fruits of these combined labors can be found all across the Navajo Nation. The Oljato well project will fit into the fine tradition.

4. Striking a regulatory balance

Based on the PER and EA, the Oljato well should trigger any regulatory issues. The Navajo Nation is familiar with the NEPA, the Safe Drinking Water Act and other regulatory requirements. This project should be routine in that regard.

5. Modernizing our infrastructure

The main well on the Oljato public water system is 65 years old. The new well will play a major step in upgrading and modernizing this public water system. It will be metered and be on the NTUA SCADA system.

VII. Project Budget

In this section addresses the funding plan. The budget proposal and the budget narrative.

A. Funding Plan and Letters of Commitment

The total project cost budget is \$691,783. The Navajo Nation has committed \$200,000 for the design, engineering and permitting. This proposal is for \$300,000 from Reclamation. \$191,783 is being requested from the Utah Navajo Trust Fund. A support resolution from the Chapter is included. This plan is shown in Table VII-1.

B. Budget Proposal

The budget proposal is shown in the follow three tables. These tables identify the total project cost in Table VII-1 including the cost sharing from the Navajo Nation and the Navajo Utah Trust Fund. Table VII-2 shows the federal and non-federal sources. And Table VII-3 the budget categories.

Table VII-1: Budget for Drilling the Oljato Drought Well and Watering Point

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal Funding	\$300,000
Costs to be paid by Applicant	200,000
Value of Third-party contributions (Navajo Utah Trust Fund)	191,783
TOTAL PROJECT COST	691,782

Table VII-2: Summary of Non-Federal and Federal Funding Sources

SOURCE	AMOUNT
Non-Federal Entities	\$300,000
Costs to be paid by Applicant	200,0000
Value of Third-party contributions (Navajo Utah Trust Fund)	191,783
Non-Federal Subtotal	391,783
Other Federal Entities	0
REQUESTED RECLAMATION FUNDING	691,782

Table VII-3: Budget for Drilling the Oljato Drought Well and Watering Point

BUDGET ITEM DESCRIPTION	QUANTITY	UNIT	\$/UNIT	TOTAL COST
-------------------------	----------	------	---------	------------

Survey of site and plat for well location	1	LS	\$20,000	\$20,000
NEPA compliance Archeological, Biological Compliance Forms, EA,		LS	\$30,000	\$30,000
Geohydrology Report		LS	\$20,000	\$20,000
Design and Construction Mgt (10%)		LS	\$65,000	\$65,000
Mob and Demob of Drill Rig	1	LS	\$40,000	\$40,000
Drill and Install 20-inch Surface Conductor Casing 3/8" wall thickness	50	Feet	\$500	\$25,000
Drill 12-1/4 " Pilot Hole	400	Feet	\$80	\$32,000
Water Quantity Test	1	LS	\$20,000	\$20,000
Geophysical Survey (include crew standby time)	HR	96	\$400	\$38,400
Ream 12 1/2" hole to 19 Inch	400	Feet	\$190	\$76,000
Furnish and Install 14" unslotted and slotted casing (5.16" wall thickness)	400	Feet	\$80	\$32,000
Furnish and Install Filter Pack, sand and bentonite seal (500 ft assumes 125% of hole volume)	476	Cu Ft	\$50	\$23,800
Clean Out Casing, Well Development, Pump Test, Water Quality Analysis and Chlorine	1	LS	\$80,000	\$80,000
Watering Point	1	LS	\$65,000	\$65,000
Total Field Cost				\$567,500
Contingencies	15%			\$85,125
Navajo Nation Tax	6% Field & Cont			\$39,158
Total Estimate Project Costs				\$691,783

C. Budget Narrative

Design and Engineering and permitting is being funded by the Navajo Nation. It should be completed in July 2020. Assuming that the award is made in July 2020, Drilling and construction could occur in October 2020 and be completed in November 2020. Navajo Nation will be the fiscal agent.

After the site has been cleared, the strategy is to complete a 12 ¼ inch pilot hole. Based on the pump test results, that hole may be reamed to 19 inches in diameter. A 14-inch casing will be inserted into the hole and the well will be developed. This work will be handled by a single contractor.

Additional funding will be solicited from United States Department of Agriculture (USDA) for the water distribution system. Indian Health Service (IHS) is also participating in the project by designing and constructing other piping improvements so that supply from the well can be conveyed to the northern reaches of the water distribution system. The Indian Health Service is not able to proceed with its SDS project until water availability on the system has been addressed. The Oljato Drought Well will greatly improve the system's water availability.