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*John W. Leeper has been Branch Manager of the Navajo Nation Department of Water Resources since 1997. He supervises a staff of more than 20 water resources professionals, manages an annual budget of more than \$2 million derived from more than six funding agencies, and provides technical support for the Navajo Nation's water rights litigation and negotiation, including representing the Navajo Nation on the Navajo Gallup Water Supply Project Steering Committee. John has also assisted the Navajo Nation with a broad array of San Juan River Basin issues including assisting the Nation with formulating positions with respect to the Navajo Indian Irrigation Project, the Animas-La Plat Project, the San Juan River Recovery Implementation Program, the negotiations between the Navajo Nation and the State of New Mexico, and regional water planning. John received a B.S. in civil engineering from the University of California, Davis, an M.S. in civil engineering from California State University, Los Angeles, and a Ph.D. in civil engineering from Colorado State University.*



## Update Regarding the Navajo Settlement and the Navajo-Gallup Pipeline

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Hello my name is Tanya Trujillo, and I am general counsel for the Interstate Stream Commission. I am pleased to be here today and present with John Leeper from the Navajo Nation regarding the status of the Navajo settlement and the Navajo-Gallup pipeline project. The State of New Mexico and the Navajo Nation signed the settlement in April of 2005, and that settlement was negotiated for approximately 10 years before then so it was a very complicated settlement that involved a lot of back and forth negotiations but it achieved a very positive settlement for both the State of New Mexico and non-Indian water users in northwest New Mexico and for the Navajo Nation. The settlement quantifies the Navajo Nation's water rights from the San Juan Basin and will provide approximately 360,000 acre-ft of depletion, which in New Mexico is a large amount of water. The settlement water will be quantified through a decree in the San Juan adjudication court and that will serve the goal of advancing that adjudication and I know that there is a lot of pressure in New Mexico for us to make progress in these adjudications and these Indian water rights settlements are a great way to do that. The settlement will quantify water rights for the Navajo Nation for irrigation, municipal, and industrial purposes. Some of the key elements of the settlement are construction of one water supply project that involves many different components and John Leeper is going to provide more details on those components. I will provide to you some of the highlights of the settlement agreement and provide a little bit of background about some of the interstate issues that we dealt with in negotiating settlement elements, and highlights relating to federal legislation authorizing the settlement.

The main benefit or purpose of the settlement project is to provide safe, reliable drinking water for people who currently do not have water. It is sometimes difficult for us to appreciate that there is a significant sector of our population in New Mexico who currently

do not have running water in their homes. The benefit is to provide drinking water for people who do not have water in their homes. It is very moving to travel to northwest New Mexico and visit some of the homes of the Navajo Nation residents where the main wish or desire of that household is to have running water in their home and to someday have things like washing machines and be able to take showers in their homes, which is something that most of us take for granted.

It was interesting a couple years ago when we were at a Colorado River water users meeting in Las Vegas at Cesar's Palace. Estefan Lopez, our director, was presenting a video on the situation of the Navajo Nation. It was a striking contrast presenting pictures of people traveling 30 or 40 miles to haul water from a hauling station to their home and making that presentation in the context of the lavish accommodations at Cesar's Palace. It was a very moving presentation and several hundred people were just silenced at the stark reality that exists within our country today.

The purpose of the project will be to provide a reliable surface water supply to Navajo Nation residents and to tie into the existing regional water system that the City of Gallup has. The City of Gallup is relying on a diminishing supply of groundwater and this project will supplement and replace their supply. So this is not an Indian-only system; it will tie to the non-Indian systems and John Leeper will provide more details on that but the cooperation has been very successful. Other provisions of the settlement are very good administrative provisions that will preserve existing non-Indian uses in the basin and will allow the state engineer to serve as a water master and to administer the water rights and implement metering programs that are beneficial throughout the state. The settlement ensures that those provisions will be in place in the Northwest area of the state. The settlement also provides for protection of San Juan Chama contract water, which as you know

extends through the Rio Grande basin and includes provisions for funding for non-Indian irrigation improvements in the San Juan Basin.

I want to provide a little bit of background and highlights relating to the federal legislation implementing the settlement. The legislation was introduced in late 2006 and again in 2007 and is titled the Northwest New Mexico Rural Water Project Act. Hearings were held in 2007 in the House and Senate and were co-introduced by Senators Bingaman and Domenici and Representative Udall on the House side. The legislation ties into other existing laws, for example the Navajo Reservoir was authorized in the Colorado River Storage Project Act back in 1956. In addition, the San Juan Chama Project Act and the Navajo Irrigation Project Act were authorized in 1962. So our current legislation for the Navajo settlement amends both those acts and involves tying into those existing pieces of legislation. This summer the Navajo legislation was combined into the omnibus Public Lands Act. Scott Verhines talked a little bit about that act because there are several other pieces of New Mexico-related legislation that are included in that act. It is actually now part of a House bill, and as Scott mentioned, it is pending for the lame duck session expected to occur this November. We all have our fingers crossed for that.

The legislation will authorize the settlement and authorize construction of the projects. One of the key elements is funding. And I know in this budget climate, funding is always one of the most difficult obstacles. The Navajo settlement legislation contains a creative funding mechanism that creates the Reclamation Water Settlements Fund, which can be used to implement settlement agreements approved by Congress for water supply projects, habitat restoration projects, or projects requiring reclamations involvement. The fund taps into or diverts from what is an annual average surplus of approximately \$900 million in the existing reclamations fund. The current total surplus is estimated to be about \$7.6 billion. I am not an expert on federal budget issues so I am not exactly sure where that stands in today's climate, but it's something that has been evaluated by western states and by federal representatives and it is anticipated to be a successful funding mechanism should this legislation pass.

The federal cost for the Navajo settlement is over \$800 million so we will definitely need some creative funding mechanisms to get it done. The State contribution is about \$50 million and New Mexico has already contributed about \$30 million towards funding projects

through the Water Trust Board in the Gallup area or direct funding for the eastern portion of the project pipeline called the Cutter Lateral. I believe John will provide more details on those, but the State of New Mexico stepped up even without finalizing the federal legislation and has tried to make progress towards this important project.

In addition, there will be local cost-share contributions from the City of Gallup and the Jicarilla tribe, which is also a participant in the project. Those contributions will be at least \$30 million and the City of Gallup should be commended because they have undertaken a rate analysis and are planning for how to pay for their portion of the cost. Again, we have our fingers crossed that the legislation will go forward both on the Senate and House side and hopefully will be signed by the President but those are all still pretty big hurdles to get through in the next few months.

I did want to highlight a couple of the controversial interstate issues that came up in connection with the Navajo Gallup project and the Navajo settlement. The State of New Mexico worked very hard with the Navajo Nation to try to ensure that the settlement water quantities would fit within the context of our Upper Colorado Contract Apportionment. It was very highly scrutinized by engineers from throughout the Colorado River basin and took approximately two to three years just to double check the accounting and the hydrology.

One of the biggest projects they worked on was a report called the Hydrologic Determination, which was prepared by the Secretary of the Interior and required by the 1962 legislation creating the San Juan-Chama Project and Navajo Irrigation Project. That hydrologic determination was an evaluation of whether water was reasonably likely to be available for the settlement and the Secretary of the Interior required a review and participation in the analysis by all of the seven Colorado River basin states. That analysis was ongoing in the context of very complex negotiations amongst the Colorado basin states leading to a short-sharing agreement. It involved a lot of scrutiny from what I call engineer's engineers because the details of that analysis are very complex. But eventually in May of 2007, the Secretary of the Interior completed that process with concurrence by all seven basin states. We are very comfortable with the water supply outlook for the Navajo Gallup project.

Another interesting problem that we dealt with was that the Navajo Nation and New Mexico involves land

that is in both the upper basin of the Colorado River basin and the lower basin. Specific provisions in the Colorado River Compact, which was entered in 1922, cause restrictions on the transfer of water from an upper basin use to a lower basin use. In the context of the Navajo settlement, the Navajo reservation extends across three states – Arizona, Utah, and New Mexico – and also involves property in the upper basin and in the lower basin. We are looking at mechanisms to try to get water to people, notwithstanding the fact that there are interstate issues and inter-basin issues. We worked with our other upper basin states and got their concurrence for our ability to use some of our upper basin apportionment in the lower basin within the Navajo reservation. In 2005, the Upper Colorado River Compact Commission authorized a formal resolution, and we also have a specific provision in our federal legislation authorizing that use as well. That sets a precedent for other Colorado River projects such as the ongoing negotiation of the Navajo Nation’s settlement with the State of Arizona for its water rights, which has similar issues dealing with upper basin uses and lower basin uses. Also, the State of Utah is proposing a large water supply contract that involves transportation of upper basin water to lower basin locations. So all of those are still ongoing and our settlement legislation will present a precedent for how the states expect to negotiate relating to their future projects.

And finally at the last minute, when we were hoping to finalize our legislative language and move the legislation, there were specific requests from the State of Arizona relating to a portion of the project that extends from New Mexico into Arizona to supply water to the Navajo Nation’s capital of Windowrock. From an engineering perspective, it makes a lot of sense because Windowrock is right on the New Mexico border. If we are constructing a pipeline to extend to Gallup, which is very close to Windowrock, it also makes sense to supply the Navajo Nation’s capital. The complex issues of use of upper basin water in the lower basin were even more compounded because what we were dealing with is a request from Arizona to use their lower basin apportionment, diverted from an upper basin reservoir in a neighboring state, and we spent several months trying to negotiate with all the other Colorado basin states on language that would make everyone comfortable with that situation. The Navajo Nation and the State of Arizona are still working on the details of their settlement so we don’t know exactly how that will play out but it was an interesting process involving Colorado interests, Arizona interests, and California interests to try to make amendments to our New Mexico settlement bill for issues that will be related to the Arizona

settlement. I guess that is how the process works in the Colorado River basin these days.

In conclusion, I think we are very hopeful that the settlement legislation will go forward and that we can finally start some of the construction that would be needed to implement this project. I am pleased to hand over the microphone to John Leeper, who has been great to work with from the State’s perspective and will provide more of the engineering details and background.

*John Leeper*

The Navajo Gallup Water Supply Project (Project) is more than just a pipeline. Instead the Project is a collection of components that will provide a comprehensive water supply to the region. For the Environmental Impact Statement, Reclamation assessed 11 different project alternatives, along with non-structural alternatives. The proposed Project configuration and components have been demonstrated to be the most cost effective way of serving this region.

The Project will divert 37,764 acre-feet of water from the San Juan River for a project population of approximately 250,000. It will have 1,200 acre-feet per of capacity for the Jicarilla Apache Nation, 7,500 acre-feet of capacity for the City of Gallup, 6,411 acre-feet of capacity for Window Rock, and 22,653 acre-feet of capacity for the Navajo communities in New Mexico. It will include more than 260 miles of pipelines and 24 pumping stations. The Project alignment is shown in Figure 1.

**Description of the NGWSP.**

- San Juan River diversion near the Upper Fruitland Chapter.
- Water would be treated, conveyed west along N36 and south along US491 to Window Rock, Crownpoint, and the Gallup area.
- Another diversion would take water from Cutler Reservoir to eastern portions of the Navajo Reservation and Jicarilla Nation.

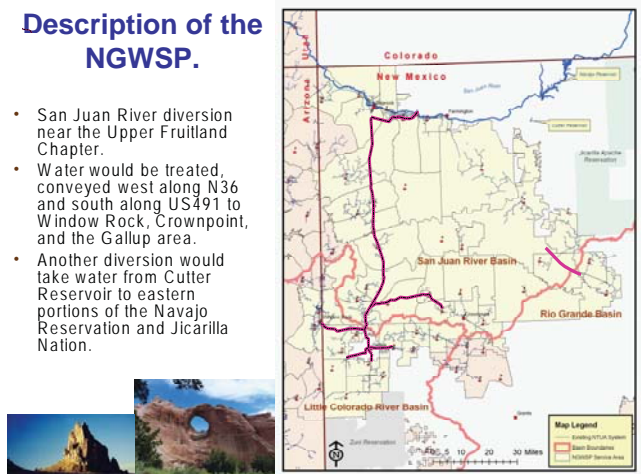


Figure 1. Navajo Gallup Water Supply Project Map



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The Navajo San Juan River Settlement legislation includes, and the Project's water budget is based on, a conjunctive groundwater component. The conjunctive ground water component is critical. Many communities, for instance Crownpoint, will use more groundwater even with the Project than it is using today. The conjunctive groundwater component reduces the overall demand for water on the San Juan River, assures that water will get to real people sooner, and improves the Project's redundancy.

The Project includes a water treatment plant at Nahnazad which is near Kirtland. This water treatment plant will have a capacity of 38 million gallons per day (59.19 cubic feet per second). If that water treatment plant were built today, it would be one of the largest ones in New Mexico. This treatment plant will have the authority to treat non-Project water. It has the potential to become a regional water treatment plant in the Kirtland area. The point of diversion is at an existing weir used by the San Juan Generating Station. This point of diversion has numerous advantages. First, because this stretch of the San Juan River is critical habitat for the Colorado Pikeminnow, constructing another large diversion and weir would be extremely difficult due to the environmental impacts. This point of diversion takes advantage of the existing weir. Second, this point of diversion is downstream from the Animas River and the La Plata River confluences with

the San Juan River. This location enables the Project to divert almost half of its water supply from flows that are generated downstream from Navajo Reservoir. This downstream water supply takes some of the demand off of the Navajo Reservoir water supply. Third, this point of diversion is upstream from the Chaco Wash which contributes a very heavy sediment load to the San Juan River making the San Juan River water below the Chaco Wash very difficult to treat. And finally, with the point of diversion downstream from Navajo Reservoir, Project demands that are met from Navajo Reservoir storage will help to augment San Juan River flows downstream.

Another critical Project component is the Gallup Regional System. The City of Gallup is an important partner in the Project. The Project will have capacity for 7,500 acre-feet of water. The Project will also convey more than 4,800 acre-feet of water through the City, to the Navajo chapters that surround the City. The construction of this infrastructure is already underway. The Gallup Regional System will be supplied by the local groundwater until the surface water from the San Juan River is available. One of the goals of the regional system is to have the ability to get the San Juan River water to the Navajo residents that surround the City the day it becomes available. The Gallup Regional System is shown in Figure 2.

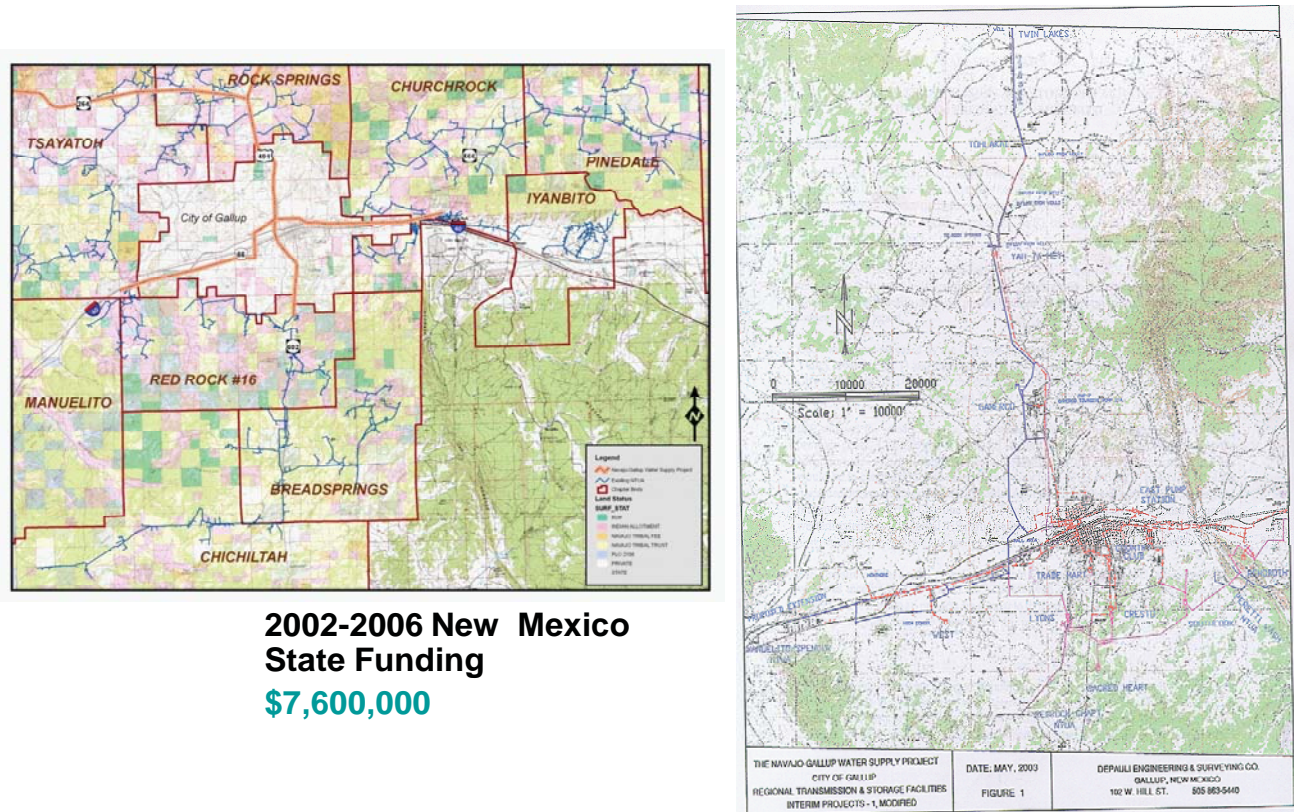


Figure 2. Navajo Chapters on the Gallup Regional System

The San Juan Lateral is another major component. The general alignment is along Highway 491 (formerly Highway 666). This pipeline will range from 48 to 12 inches in diameter. This lateral will convey water from the water treatment plant at Nenahanzad south to the Gallup Regional System, to the Window Rock Lateral, and the Crownpoint Lateral. It will also provide water to the Navajo Tribal Utility Authority (NTUA) public water systems along the route. The primary intention of the main Project laterals is to convey water to the NTUA systems which will then convey water to the individual customers. With this strategy, the day the San Juan Lateral reaches, for instance the Mexican Springs Chapter, the local NTUA system will be able to deliver water to the residents.

San Juan River. The Cutter Lateral System is shown in Figure 3, and the groundbreaking is shown in Figure 4.

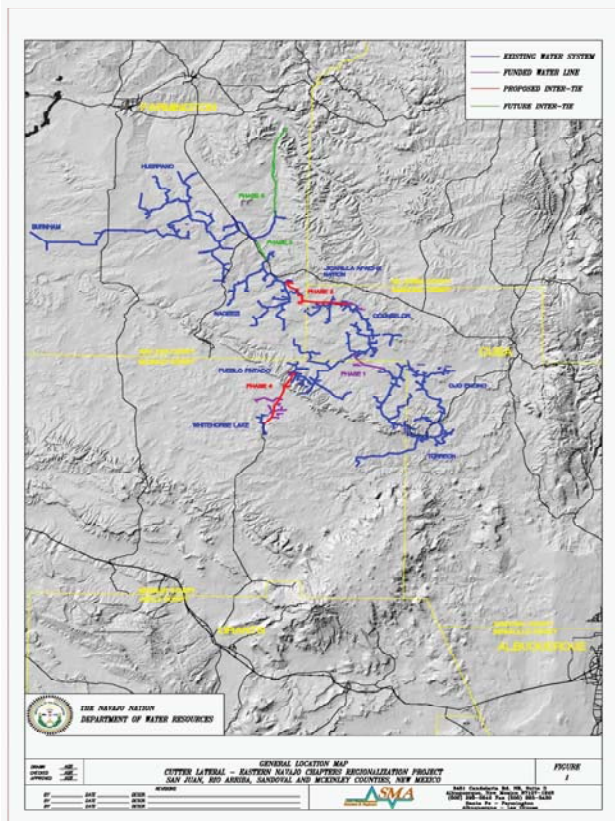


Figure 3. Cutter Lateral NTUA Phases: Six Chapters = \$20,000; New Mexico = \$19.3 M; Navajo Nation & USDA = \$8.6 M; Water Volume: 5.4 mgd

The preferred alternative includes the Cutter Lateral, which will convey 4,645 acre-feet per year from the existing Cutter Reservoir to some of the Eastern Agency chapters, and includes 1,200 acre-feet of capacity to serve the southern portion of the Jicarilla Apache Reservation. The pipeline will range from 24 to 10 inches in diameter. The NTUA systems in parts of the Eastern Agency are very water short. A conjunctive groundwater component will improve the water supply in the short term, and will take some of the pressure off the

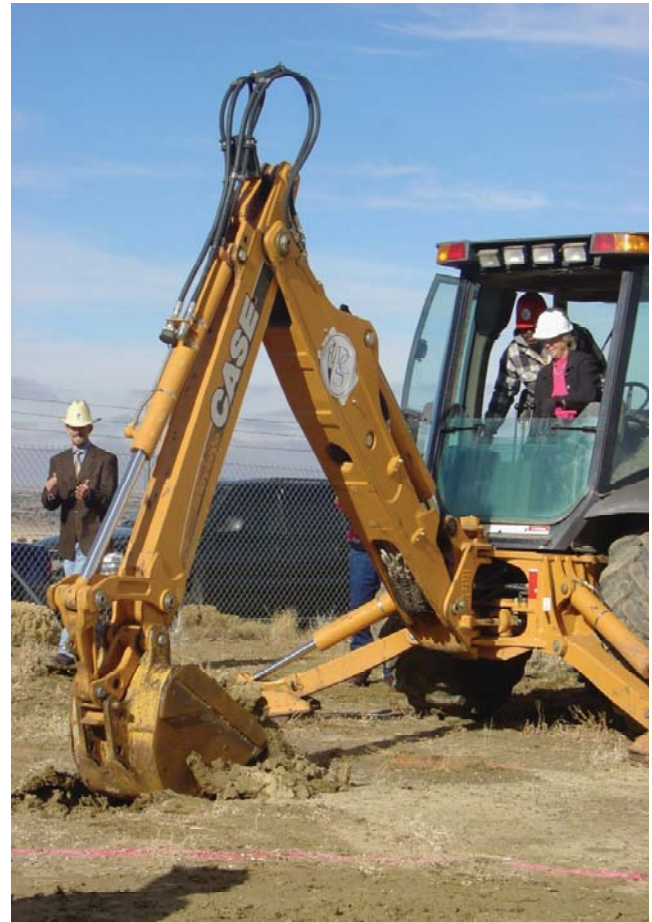


Figure 4. Cutter Lateral Phase 2 Ground Breaking; Project Cost: Project Construction (in 2007 dollars) \$870,000,000; 2002-2008 New Mexico State Funding \$30,000,000 (for Gallup Regional System, Twin Lakes Well and the Cutter Lateral)

Reclamation estimates that the Project will cost \$864 million. Is this cost realistic? First of all, the Project passes the principles and guidelines that Reclamation has established. It has a direct benefit to cost ratio greater than 1.16, and including other benefits is greater than 1.46.

However, the benefit to cost ratio is not the most important number to consider. Whether this Project is worth \$800 million to the federal government depends on what happens if there isn't a settlement with the Navajo Nation on the San Juan River in New Mexico. The Navajo Nation's claims to the San Juan River could be very disruptive. It is difficult to put that claim into perspective without sounding threatening. However, 80 percent of New Mexico's power is generated in the Four Corners area using water from the San Juan River. A Navajo claim of hundreds of cubic feet per second could leave the power generation, irriga-



tion and municipal demands vulnerable for many days during the summer. That power goes to communities all over the Southwest. The settlement provides explicit shortage protection for the San Juan-Chama Project. Without the settlement, the durations during which the San Juan-Chama Project could divert water could be reduced. The settlement essentially eliminates that risk. All kinds of doomsday scenarios can be conjured up if there was no settlement. However, instead of dwelling on all of those gloomy scenarios, the Navajo Nation is discussing partnerships with the City of Gallup, the City of Farmington and many others to make this Project, and this settlement, a reality.

There is another cost to consider when evaluating the benefits and the costs of this Project, and this settlement. The greatest cost occurs when these communities end up litigating and fighting over this issue. It tears communities apart. In my career as a smarmy consultant, probably the most shameful thing I ever did was drive around the Silver Creek watershed in Arizona as part of the Little Colorado River general stream adjudication with a van load of federal experts looking for things to object to. It can be distasteful work. The purpose of the exercise is to look for discrepancies in the way the state has described the various water uses. The experts meet with the local water users, often rural folks, and scrutinize the information that describes their water rights. The team scrutinizes the tabular data, spatial data, significant dates, and other records. And much of the time the experts will find things to object to. In a contested case, a tremendous amount of time and energy is spent on preparing objections. And then the other side spends their time and energy figuring out what to do about those objections. In the San Juan Basin, with many thousands of potential stakeholders involved, a contested process could last forever. This process tears communities apart. So, when one considers the cost of this settlement and this Project, yes the Project has a benefit/cost ratio greater than one. Yes, this settlement and this Project will eliminate a lot of disruption on the San Juan River. But, most importantly is eliminates the battle that would tear communities apart.

Instead of battling, the biggest community in the basin, the City of Farmington, is a partner in the settlement. The City is assisting the Navajo Nation convey water to Shiprock. It appears that the City of Farmington has realized that one of the best things for the City is a prosperous thriving Shiprock.

The State of New Mexico is not just saying "yeah, go do it." Instead, the State of New Mexico has adopted a

philosophy that if working together, the Navajo Nation and the State can solve some of the small problems, which will lead to the solutions for very big problems. The State of New Mexico has stepped forward with resources to begin these ambitious Project components. For instance, Manuelito, a Navajo community on the west side of Gallup, has a very difficult water supply problem. The State of New Mexico and the Governor were instrumental in developing a well at Twin Lakes north of Gallup. The connections between this well, the City and Manuelito are being constructed today. This work is one more small step in regionalizing the system. So, real people are getting real water, in real time. The residents in Manuelito are not being told to wait until 2026 to get water. The day that the San Juan River water gets to Twin Lakes, the connections will be in place to convey water to Manuelito.

There are Navajo enclaves of allotted land that are interspersed in and around the City of Gallup that do not have access water. In one case Navajo homes were right next to the City of Gallup golf course. A good golfer could hit a golf ball from the course to some of these Navajo homes where the resident, until recently, were still hauling water. These Navajo residents can see \$200,000 or \$300,000 homes nearby. The City of Gallup has worked with the Indian Health Service and NTUA to serve these folks. Today they have drinking water. Just like with the City of Farmington cooperating with Shiprock, the City of Gallup has been cooperating with these area residents. The system is being regionalized. Once the waterline to Manuelito is completed, connections with Church Rock on the eastside of Gallup will begin. And, eventually connections will be constructed on the southern side of City of Gallup. This strategy increases the number of customers that the Project can serve; so that when the lateral from the San Juan River is complete, there will be a large enough customer base to make the Project a success.

The Cutter Lateral is the same kind of story. At an appraisal level the Project appears to be just a purple line on a map. It could take many years to make that line on a map a reality. However, the Indian Health Service proposed a series of phases and interties among the existing NTUA systems. The NTUA systems in the southern end of the service area are chronically short of water. One of the first phases will connect the Ojo Encino and Councilor systems. At first, connecting water-short systems with each other provides fairly limited overall benefits. But, there is some excess groundwater capacity on the Huerfano system at the north end of the service area. By connecting these systems together, it will be possible to meet short term water demands

in the south, while creating the alignment that will eventually convey San Juan River water. The State Water Trust Board has been remarkably supportive of this concept. And in 2008 the Governor and the legislators supported \$12 million for the second phase of this project. The final phases will connect all of these NTUA systems with the Cutter Reservoir. That phase is the most expensive of the phases.

The lack of infrastructure, the lack of economic development, and poverty are linked. The Navajo unemployment rate has skyrocketed compared to Arizona and the rest of the U.S. The per capita income is much lower compared to the rest of the US. These statistics are shown graphically in Figures 5 and 6. The result of this situation is that people are leaving. Between 1980 and 1990, on reservation population increased by 20%, while the off reservation population increased by more than 100%. From 1990 to 2000, on reservation increase was about 20%; off reservation increase was about 50%. The Navajo Nation today has a need for 20,000 homes. Thirty percent of the household's haul water. People are leaving because they cannot find a livelihood.

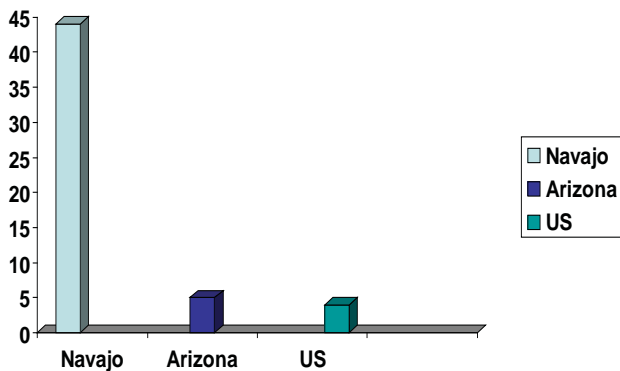


Figure 5. Comparison of Unemployment Rates

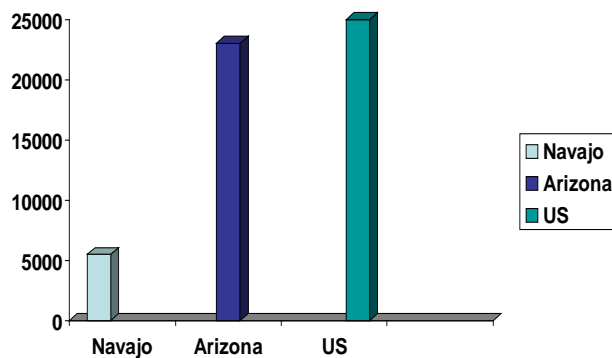


Figure 6. Comparison of Per Capita Income

These proposed Navajo water projects are all pieces of a puzzle. If the Navajo Nation cannot serve Window Rock with water from the San Juan River, then the Window Rock demands will need to be served by conveying groundwater from Ganado. But, the Ganado area cannot sustain the populations of both communities. Some of the Colorado River water managers see this Project as a challenge to the Colorado River Compact and the Upper Basin Compact. Some of these managers believe that the Navajo Nation and this Project are doing violence to the Compacts. But, who is doing violence to whom? Out on the Navajo Reservation the basin boundary lines, and even the state boarders, are quite arbitrary. If a person was blindfolded and dropped off in the middle of the Navajo Reservation, and given a compass, that person would not be able to tell if he was in the Upper or Lower Basin. Driving from Farmington to Gallup one can cross the Continental Divide three times. The compact boundaries seem less relevant on the Reservation. The pieces of this water puzzle need to fit together. If the Navajo Nation can serve Window Rock with water from the San Juan River, then the Ganado groundwater can serve the residents in the Ganado area. The other proposed projects serve the Western Navajo Agency out of Lake

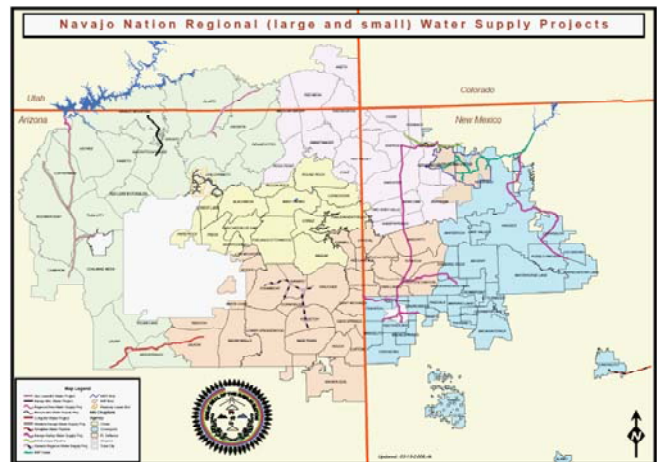


Figure 7. Navajo Regional Projects

Powell, and the San Juan River diversion serve the Navajos in Utah. The puzzle pieces need to fit together. Some of these other projects are shown in Figure 7.

I love pipelines. I have never seen a pipeline I have not liked. But the Project and the settlement is not about engineers and pipelines, it is about people. The Navajo people have been waiting for a very long time for this to happen. Someday they will get this water. Figure 8 shows a blessing ceremony at White Horse Lake. The



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poster shown in Figure 8 was part of a contest where the kids were asked to draw pictures of water. One student drew a picture of a pickup truck hauling water. The Project is really about people. It is about the Na-



Figure 8. It is about the People