SESSION TWO

Water Users Perspectives: Agriculture, Municipal, Energy, and Environmental Sectors

Moderated by Jeff Witte, New Mexico Department of Agriculture

Jeff Witte is the director/secretary of New Mexico Department of Agriculture (NMDA) and the cabinet secretary of agriculture for NMDA under Governor Susana Martinez. He served as the assistant director of NMDA from 1994 to 2003 then the director for the Office of Agricultural Biosecurity for NMDA and New Mexico State University (NMSU) until 2011. Jeff codirected the Southwest Border Food Safety and Defense Center at NMSU, working on agriculture issues related to homeland security. He is an adjunct instructor with Louisiana State University; the National Center for Biomedical Research and Training; and the University of Tennessee, College of Veterinary Medicine. Jeff is a member of Infragard New Mexico; New Mexico Biosecurity Work Group; founding member of AgriGard, a national workgroup that brings together industry and law enforcement; and is also a member of the Association of Food and Drug Officials Food Protection and Defense Committee. Jeff comes from a ranching family in northern New Mexico. He is a graduate of New Mexico State University with a bachelor's degree in Agricultural Business Management and a master's degree in Agricultural Economics and Economics.

Scarcity Impact on Acequias

Paula Garcia, New Mexico Acequia Association

Paula Garcia is the Chair of the Mora County Commission, an office for which she was elected on a platform of ethics in government, revitalization of the land-based economy, and protection of land and water resources. Paula is also Executive Director of the New Mexico Acequia Association, a grassroots, statewide organization of acequias which are centuries-old, community-based irrigation systems. In her years of service to the Association, acequias have built a movement around the principle that "el agua es la vida – water is life" and have achieved major policy changes locally and statewide to protect rural water rights. The Association also created a project entitled Sembrando Semillas (Growing Seeds) to promote revitalization of agriculture and to cultivate the next generation of farmers and ranchers. NMAA also co-

My name is Paula Garcia and I am Executive Director the New Mexico Acequia Association. It is a tremendous honor to be here this morning before a very impressive group of people who are devoted to water. A special thank you to President Couture for her leadership as well as the NMSU faculty and researchers devoted to the study of water. Also thank you, Professor Fernald, for involving the New Mexico Acequia Association in some of your research that helps us understand better the relationship between surface water and groundwater, and very importantly for the acequia community, the importance of community resiliency. Resiliency is going to be an important characteristic for all of our communities as we move into the future.

Water scarcity, the topic of this conference, is very timely but we also know that water scarcity is nothing new in New Mexico. Water scarcity is deeply rooted in our past in the land and its people, and we have a long memory of water scarcity New Mexico. We saw the diagram earlier based on tree rings research, but there's also a long memory of water scarcity in oral history from an ancient peoples of our state, mainly the Native Americans, who have a tremendous amount of knowledge and wisdom about water scarcity and how water scarcity was dealt with historically. Part of this history of water scarcity is also embodied in the acequias that have centuries-old customs for sharing water scarcity. These traditions have been in place and have evolved and adapted for hundreds of years. Their idea of sharing in times of scarcity is based on a sense of mutuality; our shared future, our shared

founded the New Mexico Food and Seed Sovereignty Alliance which promotes the seedsaving traditions of traditional acequia and Native American communities.

Paula is a board member of La Asociacion de las Acequias del Valle de Mora, a council of acequias in the Mora Valley, and President of La Merced de Santa Gertrudis de lo de Mora. She is a strong advocate for the cultural heritage and the historic land and water rights associated with community land grants and acequias.

Paula's views on land, water, and community have been published and referenced in various op-ed pieces, articles, and book chapters. She has also spoken at numerous conferences at the local, state, and national level including being featured as a plenary speaker at the W.K. Kellogg Foundation Food and Society Conference and at a conference of the National Water Resources Association. Her experience on land and water issues was a valuable asset when she served on policy making boards including the New Mexico Water Trust Board, the Utton Transboundary Resources Center at the UNM Law School, and the Governor's Blue Ribbon Task Force on Water. She was recently appointed by USDA Secretary Tom Vilsack to the Minority Farmer Advisory Committee.

survival is dependent upon finding that mutual benefit in sharing water. The whole concept of sharing and having customs and traditions for sharing water is deeply rooted in a place-based knowledge about the river and about the acequia system. It comes from observation and years of empirical knowledge. We have a lot to learn from that type of knowledge about water systems.

We also have a framework in our state for water allocations, which in this state like Colorado, is a prior appropriation system. Some of the trends we are seeing are that even with this system of prior appropriation, water sharing customs have endured. They not only have endured, but in some ways they are adapting to new conditions. While we've seen water stream sharing between acequias in a very small region, we are starting to see discussion on how to share water in the whole basin, for example, between the upper and the lower Chama. We are trying to figure out how to deal with sharing between entities. We see cities and towns that have surface water diversions and are attempting to share the same stream system with irrigators who have senior water rights. There still must be an allocation system in place by priority administration and it is the law in New Mexico. It is still a factor particularly for agricultural water users because seniority can be a type of leverage senior water right owners have at the negotiating table. Within this context, you also have parties willing to come together to figure how to share water so that everyone benefits.

Something that is exacerbating the need for water sharing is climate change and drought. There is a high importance on reaffirming where there are customs for sharing in place, but also to reinvent those. We have an interest in acequia water sharing, but we also want to bring more entities to the table. State and federal water managers would benefit greatly from the knowledge of local water managers, like the mayordomos and other officials in managing their stream systems. There should be a complementary relationship between those who are in charge with administering our state water and those at the local level who have the day-to-day knowledge for managing the system. This is true not just for acequias but for irrigation in general. We need more negotiation, collaboration, and cooperation within the framework of our laws on prior appropriation with the flexibility to recognize customary or emerging water sharing arrangements.

A big factor for agriculture in New Mexico is water markets. Water markets are in place regardless of whether there is increasing scarcity, and they are increasingly viewed as a remedy for future water supply problems. We need to keep in mind that water markets tend to focus only on one value of water, the economic value, when water really has many values to our communities. We must be very mindful of the impact to rural communities especially to small-scale agriculture, which is more vulnerable to market forces. For the future, we should look at some type of adaptive regulatory framework for water transfers that allows for changing needs while also protecting what we find valuable to our communities. Some of the adaptations we might look at include rather than having large-scale or permanent water transfers, shorter term leases could allow water to stay in agriculture for the long-term while also having short-term ways to address short-term shortages. There are ways to rotate lands so that no land is left fallow

for too long. There are some adaptations that we can look at concerning water transfers where we don't look at it as a zero sum game where agriculture loses and other wealthier regions with more resources wins.

Lastly, an important adaptation for the future is to look at the way we make investments and expand our view not only to make infrastructure investments, but also restoration investments. Restoration infrastructure investments should be cross-sector. In other words, if we are going to make a big investment in either infrastructure or watershed restoration, the various entities in that same region should all be part of the planning process and all benefit equally. You can imagine a scenario in which a town might get a huge investment for infrastructure but not necessarily the nearby agricultural users, and thus you've built in a structural inequity to access that water unless you're mindful about how the planning takes place. We want to be mindful about investments so that they are a win-win situation for all the water users. Some incentives must be built into the funding so that everyone comes to the table and develops voluntary water sharing agreements.

There are reasons for optimism in our state about our future, despite the daunting challenges facing water. Some of the reasons to be optimistic are that in our state, we have a lot of lessons to draw upon concerning water and how we've dealt with water shortages. We also have a framework for allocation that we need to improve upon in order to adapt to changing conditions. We have a spirit of cooperation, and as we face these tough times what we are seeing is a broader view of not only looking at our own water rights by those of us who are defending water rights for our respective communities, but also looking at water as a collective responsibility for which we need to take good care. We must view ourselves as caretakers of the water for future generations.

Thank you for the opportunity to speak at this conference.

Municipal Water Reuse

Larry Webb, City of Rio Rancho, Public Works Department

Larry Webb was raised in Hobbs, New Mexico and after graduating from Hobbs High School, he spent four years in the United States Air Force. After finishing his military service, Larry attended New Mexico State University and received an associate degree in Water Utility Operations and Management. Larry then worked two years as the Wastewater Systems Manager in Silver City, New Mexico. He moved to Texas in 1980 where he worked for 17 years with the City

I'm glad to be here today and as I look at the crowd, I see familiar faces that I've worked with over the past 35 years. My topic today is water reuse. Senator Udall set the stage with water issues that we are all facing. Like his reference to diamonds, this is a multifaceted problem that we have.

Rio Rancho is a city of 87,000 people and the third largest city the state (Fig. 1). It was planned at a time when it was thought that there was an abundance of water throughout the Rio Grande. Newspaper articles noted how vivacious the Rio Grande was and how extensive the aquifer below the Albuquerque area was. The city was chartered 31 years ago, which means it's starting to mature a bit. It was stated at one time that it was the fastest growing city in the state. I'm not sure that is still the case with our current economy.

of League City, Texas as Director of Utilities. Larry received his bachelor's degree in Environmental Management from University of Houston-Clear Lake. He was the American Water Works Association, Texas Section Chairman in 1996-97. Larry moved back to New Mexico in 1997 and started working for the City of Rio Rancho as the City's Utilities Director. In 2005, the City of Rio Rancho went through a re-organization of departments absorbing the Utilities Department into the Public Works Department and Larry was named the Utilities Operations and Resources Manager.

He is a Past President of the New Mexico Environmental Quality Association and has served on many environment committees with the New Mexico Municipal League. He is also an active member of the Rocky Mountain Section of American Water Works Association and the Rocky Mountain Section of Water Environment Association. Larry is a lifetime member of the New Mexico Water and Wastewater Association and instructs management classes. He is also a lifetime member of the American Water Works Association. Larry holds a Class IV Water and Class IV Wastewater Certification in New Mexico.

Like the Middle Rio Grande valley, Rio Rancho has seen an increase in municipal and industrial water demands with a population projection of over two million people by the year 2060. And that's what we are working on today—how we are going to meet that demand for water. The water supply, as has been stated many times, has been fully allocated. The water source for most cities, and certainly for Rio Rancho, is the aquifer from which we are pumping and which is tied to the river and which requires us to have water rights. Eleven or twelve years ago, we started looking at water quality issues, particularly arsenic, and how we treat the water before we discharge it to the river or whether we would just do away with discharges. In some of our initial studies, we found that it was very helpful for us to talk about water reuse and conjunctive management of our aquifer itself.

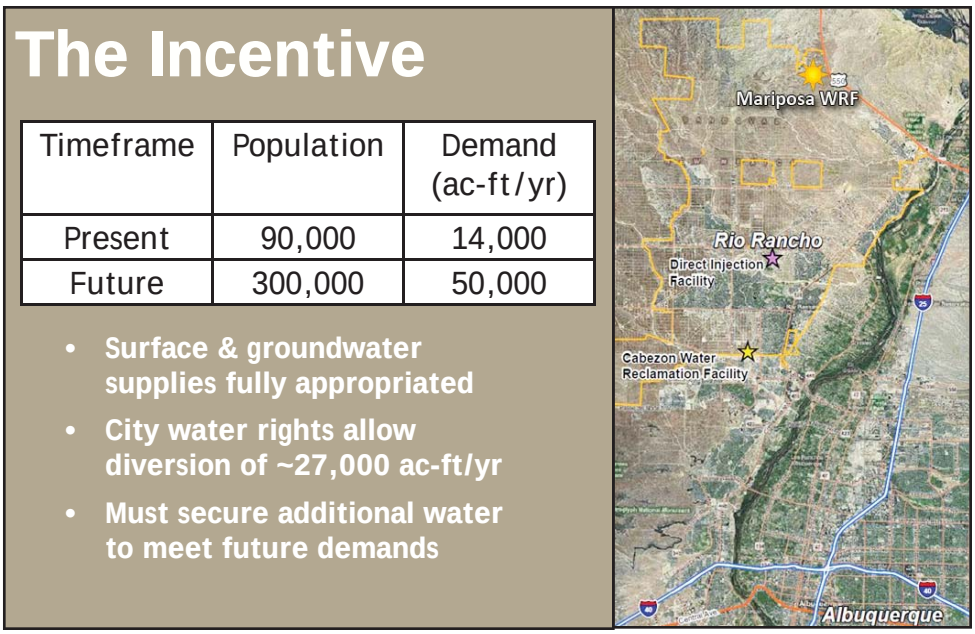

Figure 1. Rio Rancho now and in the future

The other thing that has come into play for us in the last couple years is conservation. We reduced from about 180 gallons per person per day in Rio Rancho to about 140 system-wide. For residential use, we are down to about 80 gallons per day per person. Rio Rancho has a problem in that it did not exist when the San Juan- Chama river project was being put together in the 1960s and when it came forth in the 1970s. So we've looked at the fact that we have to commit to water reuse and how to manage that reuse.

Most water is reused as part of the natural hydrological cycle that takes care of a lot of the cleaning up process. Water in river systems is used many many times by stream users. I was struck many years ago when I was in New Orleans drinking a glass of water at a water conference like this, and someone stated the fact that every gallon of water in New Orleans was used 400 times either for industrial or agriculture or city use—so I switched to Coca-Cola.

Wastewater effluent has been used for irrigation for number of years—in fact some of the water used was not of very good quality, but the State of New Mexico has increased water quality regulations. There is a stigma that's attached to water reuse and the notion that your drinking water used to be somebody's wastewater. It's the micro-constituents, the contaminants that worry us—the personal care products, hormones, and pharmaceuticals. On the other hand, the reality of reuse is that we all go to restaurants each day and that plate, that glass, those forks have all been used and treated and disinfected and washed many times. And that's what we do when we talk but water reuse; it's a treatment prior to you using it again. As I was sitting in my hotel room last night, I was thinking about how many people have slept in that same bed and used the same shower. It's not a foreign notion to us to reuse as long as we have treatments to safeguard us.

There are multiple terms used interchangeably when talking about reuse, whether it's reclaimed water, recycled water, or potable reuse. The new buzzword in water reuse is the Water Reuse Association's new term "purified water," and it does make a little difference in the connotation and the way we think about it and what we're about to do with it. Treatment technologies have proven that you can remove contaminants or reduce them to a protection limit. There are physical barriers, environmental buffers such as ponds and aquifers that help. Rio Rancho is currently piloting a recharge project that we think will work for us. We put a lot of work into the pretreatment of that water; we have not used effluent yet, we've used potable water to trace and track down contaminants as they travel across the aquifer.

Before I leave today, I want to say that there are already a number of communities throughout the world that have done these projects. El Paso, our neighbor to the south, certainly has been reusing water since the early 1980s and very successfully. I think you'll see more reuse of the future. Reuse will be needed to meet Rio Rancho's 50,000 acre-feet ultimate build-out. So we've got quite bit to go. We've got to plan for the future if we are going to grow. I don't know that we are growing any faster than anywhere else in the world. Dallas, California, and Las Vegas are having economic difficulties, but they are still going to grow. New Mexico may not grow as fast, but it will still grow.

Thank you.

Algae Water Use

Richard Sayre, Los Alamos National Laboratory

Dr. Richard Sayre is a senior research scientist at Los Alamos Nationals Laboratory (LANL) and Director of the Biolabs at the New Mexico Consortium (NMC). The primary focus of his research is on renewable biomass production systems. Prior to coming to LANL/NMC, Dr. Sayre was the Director of the Enterprise Rent-A-Car Institute for Renewable Fuels at the Donald Danforth Plant Science Center in St Louis and a faculty member and Chairman of the Department of Plant Cellular and Molecular Biology at Ohio State University. Dr. Sayre is currently the Scientific Director of the Center for Advanced Biofuel Systems, a DOE-Energy Frontier Research Center, and the National Alliance for Advanced Biofuels, the DOE algal biomass program. From 2005-2010, Dr. Sayre directed the BioCassava Plus Program funded by the Bill and Melinda Gates Foundation. Biocassava Plus developed biofortified cassava for subsistence farmers in Africa. Dr. Sayre is a co-founder and CTO of Phycal Inc, an algal biofuels company.

Dr. Sayre has received several honors including being named College of Biological Sciences Distinguished Professor, Ohio State University (2005-2008); Honorary member, Phi Beta Kappa (2006); Fulbright Scholar, Inst. Quimica, University Sao Paulo, Sao Paulo, Brazil (2007); and selected by "Nature" as one of "Five Crop Researchers Who Could Change the World" (Nature 456: 563-569, 2008). He is co-editor in chief of "Algal Research."

Thank you for the opportunity to speak at this conference. I'm perhaps the newest resident of New Mexico attending and speaking a this conference although my family has deep roots in New Mexico. My grandmother grew up on the Mescalero Apache Indian Reservation outside Roswell and my brother-in-law has been an attorney in Santa Fe for 25 years. I am very happy to be back to the Southwest.

I want to start off with the caveat that I'm going to read a prepared statement because I've been on the road for the last three weeks and I apologize for not being more interactive. We've heard from a number of people at the conference this morning about a variety of factors that contribute to setting policy for the most productive use of New Mexico's water resources. For the agricultural systems, which I'll be speaking more directly to, factors will include economics, crop yields per unit water use, the mitigation of evaporative water use, use of wastewater, impacts of other resources and energy inputs on that water use, and finally, environmental impacts.

Among the emerging cropping systems potentially requiring large amounts of water is the algal biofuels industry. New Mexico is now the home of the largest early-stage algal biofuel production systems in the United States. This includes operations under construction by Sapphire, Jewell, and El Dorado biofuels among others. The primary factors that drew this emerging industry to New Mexico were climate and economics. The mild winter temperatures with virtually uninterrupted solar radiation in southern New Mexico as well as the availability of relatively flat low-cost terrain are the major factors that contributed to the emergence of New Mexico as a center for algal biofuels commercialization.

Significantly, two of the aforementioned companies have chosen to utilize saline or recycled water. Sapphire has proposed to use saline water pumped from aquifers to grow marine algal species, and El Dorado is using produced water from oil wells. In each case, the issue of salts or solids mitigation due to evaporative water losses could present challenges, both in terms of cost and freshwater use. Significantly the high demand for water use in open ponds is counterbalanced by the very high biomass productivity of algae relative to terrestrial crop systems. Due to their high photosynthetic efficiency and the lack of non-photosynthetic organs, algae are capable of producing three to ten times more biomass per acre than the best terrestrial crops systems in the world. Ironically, open pond systems also lose approximately 30% less water per unit surface area than terrestrial crop systems and this is due to the fact that crop systems have very large plant leaf surface areas relative to the land surface.

Currently algal production systems are producing between 30 to 60% oil per unit biomass. Importantly, these algal oils are directly

compatible with current and emerging refinery and energy distribution and engine combustion technologies and could substantially reduce our dependency on foreign oil as well as create jobs in the United States. Furthermore, algae can directly capture carbon dioxide injected into ponds from point sources such as power plants or cement kilns helping reduce greenhouse gas emissions. Finally, oil extracted algal biomass is protein rich and has recently been shown by NMSU researchers to be an excellent substitute for plant proteins in a variety of animal feeds.

Thus the biofuel production from algae is likely to have limited impact on food production, but there's room for improvement. Research members of the National Alliance for Advanced Biofuels and Bioproducts, based at Los Alamos National Laboratory, have made significant advances in improving yields, reducing inputs, enhancing production stability, and addressing environmental concerns. Some of those accomplishments include the identification and engineering of new algal strains with the potential for a twofold increase in yield; identification of lab-scale energy efficient algal harvesting technologies that have less than 1% parasitic energy losses and can harvest algae at a cost of five cents a gallon; development of efficient wet lipid extraction technologies, which will eliminate the need to dry the algae and the associated water and energy losses; the development of efficient hydrothermal processing technologies for direct fuel conversion from algal biomass; demonstration that lipids extracted from algal meal can replace soybean meal in cattle, chicken, and fish feed; and development of complete lifecycle analysis models for algal biofuel systems indicate the potential to produce on the order of $7,000 gross income per acre per year in algal biomass production systems.

Additional research efforts have led to the development of engineered algae with improved light utilization efficiencies, a very important aspect in New Mexico that can increase yields by an additional 30%. More improvements in water use recycling and efficiency are expected. The use of municipal wastewater runoff from animal feedlots for algal ponds is a win-win partnership. The algae benefit from the rich source of nutrients in the wastewater and wastewater treatment facilities reduce the release of environmentally damaging nutrients. To further reduce water demand, semi-closed systems utilizing heat tolerant algae are being developed that have reduced evaporative cooling demands. In addition, micro encapsulated algae grown as super high cell densities will further reduce water requirements. Hybrid oil production systems that utilize sugars produce another biomass crop that boost the oil production in algae and will reduce demands for water to algal biomass.

In conclusion, as we develop policy impacting the use of water, it will be critical to provide opportunities for emerging technologies that utilize water resources more efficiently for biomass production while mitigating the release of climate changing greenhouse gas emissions, thus addressing both the immediate and long-term needs of water resources.

Thank you.

Protecting Our Natural Environment

Denise Fort, Utton Transboundary Resources Center

Denise Fort is a Professor of Law at the University of New Mexico School of Law and Director of the School's Utton Center. She writes about environmental law, water policy, river restoration, and climate policy. She chaired the Western Water Policy Review Advisory Commission, by appointment of President Clinton, which prepared a seminal report on western water policy.

Fort also served as Director of New Mexico's Environmental Improvement Division, as an attorney with New Mexico PIRG and Southwest Research and Information Center, and as Executive Director of Citizens for a Better Environment (CA). She was a member of the National Research Council's Water, Science, and Technology Board and participates in NRC reports. She has worked in public finance as the Secretary of Finance and Administration for New Mexico and an assistant Attorney General in the Taxation and Revenue Department of the state.

I'm very happy to be here. I've been coming to NMSU for many years to talk about water and environmental issues and it's great to see a growing number of people, including students who have graduated from UNM Law School here. So thank you very much for inviting me to give an environmental perspective. I confess that giving any environmental perspective is a little daunting when many of you consider yourselves environmentalists who take some stewardship responsibility for the natural environment. I'm just going to give one perspective and give only two points about things that matter for the environment.

A question earlier was asked about water quality in New Mexico and that of course is an important part of our environmental protection of water within the state. We have a framework to protect water quality in the state. Indeed, we've had it since before the passage of the federal Clean Water Act. We have groundwater laws to protect groundwater quality. There are loopholes in both of these statutory schemes to protect certain industries, but we do have a framework for protecting water quality.

We don't have a framework for protecting the ecological aspects of rivers and streams and that's what I want to talk about today. We have failed to protect these natural values in our rivers, and my concern as we look toward the future is what sorts of steps Congress should take to stem further damage and to help us restore our rivers and streams.

So my first point is that New Mexico should manage water demand rather than investing in large-scale water projects. I don't want to give a break-off on how big is big, but let's say that we do still have half a billion dollars in water projects on the drawing boards (see Fig. 1, page 62) These projects to which the state has committed monies under the Water Trust Board are far from having the entire amount of money available. With respect to the tribal water projects, some of the issues are different there because of the federal trust responsibility towards tribes. But in some instances, the solutions we have identified have a high environmental cost both in terms of the rivers from which the water is taken and the cost of the energy that is being used to pump the water to different places.

Let me give you a few examples that may raise a few hackles. The Arizona Water Settlement Act is an instance in which Congress said that we had an opportunity to get additional water out of the Gila River, water for which New Mexico doesn't necessarily have a need, and we would get that water out at a pretty high cost. Some of the costs would be paid for by the federal government, but not necessarily the entire cost. Why would the Congress make a commitment to provide "new" water for New Mexico rather than looking for cheaper solutions, which might be available closer at hand? The communities involved are looking for cheaper solutions in terms of lining leaking water systems

and so on. But we have $66 million in free federal money if we go the route of a diversion project to take extra water out of the Gila River. Once we remove that water, we perhaps have pipeline costs, energy costs, and other costs in delivering that water to a place where it could be used.

The Ute Lake Project is another controversial example of this. Congress has committed about $400 million for a pipeline project to deliver water to different parts of eastern New Mexico. The question has to be asked as to whether there were cheaper alternatives that could have been used, including demand management, to address those water needs. In general, demand management will be a better alternative for the state unless we have large federal money that intervenes and makes a difference.

I appreciated Paula Garcia's comments earlier on water markets. I did know how controversial this panel would be. Water markets and water transfers are probably how we are going to address these water needs in the future in New Mexico. I'm not sure exactly what she'd propose in terms of the more nuanced and adaptive approach, but that's what we should be doing.

Let me turn quickly to my second recommendation and that is restoration. Restoration of the state's rivers is something we had begun to a limited degree using state funds under a WRRI program, but the program did not have statutory authorization and there is a question as to whether or not we can continue it. I believe that there is a role for the federal government in protecting and restoring our state's rivers, especially where federal projects have degraded these rivers.

Thank you.

Flaming Gorge, WY and CO
- Communities Served: The Front Range of Colorado, and Wyoming
- Water Source: Green River
- Federal Funding: Funding not yet identified

Lake Powell Project, AZ and UT
- Communities Served: Utah
- Water Source: Colorado River
- Federal Funding: No

Yampa River Pumpback, CO
- Communities Served: The Front Range of Colorado
- Water Source: Yampa River
- Federal Funding: No

Navajo-Gallup Project, NM
- Communities Served: Eastern section of the Navajo Nation, the southwestern part of the Jicarilla Apache Nation, and the City of Gallup
- Water Source: San Juan River
- Federal Funding: Yes (100%)

Southern Delivery System, CO
- Communities Served: Colorado Springs and surrounding communities
- Water Source: Arkansas River
- Federal Funding: No

Cadiz Valley Water Conservation, Recovery and Storage Project, CA
- Communities Served: Southern California Water Districts
- Water Source: Groundwater from Bristol, Fenner, and Cadiz Watersheds
- Federal Funding: No

Peripheral Canal/Tunnel, CA
- Communities Served: Central California, Southern California, and some Northern California water agencies
- Water Source: Sacramento River
- Federal Funding: No

Weber Siphon, WA
- Communities Served: Agricultural land in the Odessa Subregion in Washington State
- Water Source: Columbia River
- Federal Funding: Yes (100%)

Figure 2: Projects in the Pipeline

Lewis and Clark Regional Water System, SD, IA, and MN
- Communities Served: South Dakota, Iowa, Minnesota
- Water Source: Aquifer adjacent to the Missouri River near Vermillion, SD
- Federal Funding: Yes (80%)

Mississippi River/Ogallala Aquifer, Various States
- Communities Served: Colorado River Basin communities, including Las Vegas, and western irrigation
- Water Source: Mississippi River
- Federal Funding: No

Narrows Project, UT
- Communities Served: Sanpete County in Utah
- Water Source: Price River, a tributary of the Green River
- Federal Funding: The applicants propose funding from the Small Reclamation Projects Act

Ute Lake Project, NM
- Communities Served: Eight Eastern New Mexico communities
- Water Source: Canadian River
- Federal Funding: Yes (75%)

Santa Fe-Pecos, NM
- Communities Served: Santa Fe and other communities in the Rio Grande Basin
- Water Source: Transfer of Pecos River water rights used for agriculture
- Federal Funding: No

Eastern Nevada to Las Vegas, NV
- Communities Served: Las Vegas and surrounding communities
- Water Source: Groundwater from 5 Basins: Snake Valley, Spring Valley, Cave Valley, Dry Lake Valley, and Delamar Valley
- Federal Funding: No

Northern Integrated Supply Project, CO
- Communities Served: 15 Northern Front Range water providers
- Water Source: Cache la Poudre River
- Federal Funding: No

Uvalde County - San Antonio Pipeline Project, TX
- Communities Served: San Antonio, Texas
- Water Source: Groundwater from Edwards Aquifer
- Federal Funding: No

Figure 1. Projects in the Pipeline. Pipe Dreams Report, NRDC; available at: http://www.nrdc.org/water/management/pipelines-project asp