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Eastern New Mexico Rural Water Authority (ENMRWA)

Written Testimony

Before the Committee on Resources
United States House of Representatives

Legislative Hearing

H.R. 4623 (Udall)
Eastern New Mexico Rural Water System Act of 2004

September 22, 2004

Talking Points

H.R.4623, Project Brief
Eastern NM Rural Water System
Subcommittee on Water and Power
House Committee on Resources
September 22, 2004

- Ute Reservoir, on the Canadian River near Logan, New Mexico, provides the answer to the future municipal and industrial water supply needs in Curry, Roosevelt and Quay counties.
- The concept of an eastern NM rural water system (ENMRWS) is not new. The water supply system, as currently proposed, represents an updated approach to development of a project that builds on almost 40 years of research and planning.
- Regional water planning in eastern New Mexico is an active and involved program, and the proposed ENMRWS serves as the cornerstone of the planning efforts.
- Decline in water availability to the region will constitute a major economic impact. Local officials have consistently ranked water as the most serious long-term development issue facing the area. Inaction with respect to implementation of the ENMRWS project will result in lost opportunity for economic development and may result in significant losses to the existing economic base.
- There is a history of federal support for rural regional water development in the midwestern and western United States.
- The twelve members of the Eastern NM Rural Water Authority (ENMRWA), nine communities and three counties, are united in their support and in their collective efforts to advance the project as quickly and efficiently as possible.
- This project is surfacing as the New Mexico model with regard to local, state and federal partnering on regional water development solutions in the State.

Introduction

The purpose of this project is to address an established critical need. The Eastern New Mexico Rural Water System (ENMRWS) will, when implemented, provide east-central New Mexico communities, counties, and a military base with a sustainable source of water for municipal and industrial use. The project is not new and the need for a renewable water supply has not diminished. On the contrary, the need for potable water grows annually as existing supplies are depleted.

"The current water management system is not sustainable…"

Groundwater reserves in the east-central New Mexico region represent a limited resource that is both declining in quantity and deteriorating in quality. Two groundwater basins generally serve the region, the Entrada Aquifer to the north and the Southern High Plains (Ogallala) Aquifer to the south. The western edge of the Ogallala formation extends from Texas into eastern New Mexico with relatively shallow saturated thickness. The formation was discovered in 1912.

Water levels in the vicinity of Clovis have declined in excess of 100 feet in the ensuing period with estimated recharge being on the order of only ½ inch per year. Even though voluntary conservation efforts and continued improvements in agricultural water use efficiency can extend the available supply of groundwater, the depletion problem in most of the area makes sustainability over the next 15-25 years a virtual impossibility.

Groundwater hydrologists in the Office of the NM State Engineer (Musharrafieh, May 2004) recently reported to the ENMRWA that average annual water level decline in the Clovis area is 1.8 ft., approximately 1.2 ft. in the Portales area, and 1.8 ft. in the Tucumcari region. Saturated aquifer thickness remaining in the Ogallala formation in the vicinity of Clovis is less than 50 ft. and less than 20 ft. in the Portales area. Precipitation is the primary source of recharge to the aquifer, and only a small portion of precipitation infiltrates.

"What happens when the well runs dry?"

The New Mexico Legislature recognized the water supply problems in eastern New Mexico when it passed an Act authorizing the State Engineer to construct a dam on the Canadian River near Logan in 1959. At the time, it was recognized that existing groundwater supply sources were declining and demand from Texas for more water was coming from both the Canadian and Pecos River basins. In 1964, almost 40 years ago, a major feasibility study was completed by a Consulting Engineering firm to furnish water from the newly constructed Ute Reservoir to communities in eastern New Mexico as a supplemental source of water. In 1975, 1978 and 1981, the New Mexico Legislature authorized and funded improvements to the spillway to increase storage at Ute Reservoir. A 1994 study by the New Mexico Interstate Streams Commission (ISC) estimated the *firm annual yield* to be 24,000 acre-feet per year in all but extreme drought years.

Regional water planning in eastern New Mexico is an active and involved program and the ENMRWS serves as the cornerstone of the planning efforts. Decline in water availability to the region will constitute a major economic impact. Local officials have consistently ranked water as the most serious long-term development issue facing the area. Inaction with respect to implementation of the ENMRWS project will result in lost opportunity for economic development and may result in serious losses to the existing economic base.

Bi-partisan Congressional and Legislative support, and Federal Agency support for the ENMRWS has been ongoing since the completion of Ute dam in the late 1950's. The United States Bureau of Reclamation (USBR) has participated with a number of studies since the 1970's to help advance the project and has served as the federal sponsor for funding of ongoing project development activities.

The project has received the support of Governor Richardson and bi-partisan support from the New Mexico State Legislature. The most recent examples include the creation and implementation of the New Mexico Water Trust Fund (WTF) and Water Project Fund (WPF) specifically to advance projects such as the ENMRWS, and dedication of 10% of the State's severance tax backed bonding capacity to the WTF. The 2002 NM State Legislature appropriated $2 million under HB.88a specifically to provide state assistance to the ENMRWA. Locally, members of the ENMRWA are committed to moving forward with project development activities and have taken steps to finance their share of capital funding in advance of the project. Each of the twelve member entities are currently preparing financial plans specific to their community. In addition, members of the Ute Water Commission (UWC) have spent in excess of $400,000 in local funds legally reserving water under the terms of the purchase agreement with the ISC since 1983.

ENMRWA Members

Clovis / CAFB
Curry Co.
Elida
Grady
Logan
Melrose
Portales
Quay Co.
Roosevelt Co.
San Jon
Texico
Tucumcari

A team of Consultants began their activities in February 1999, under contract to the Eastern Plains Council of Governments (EPCOG), and on behalf of the participating member agencies, to prepare a plan to advance the ENMRWS project to a final conceptual and fundable stage. The resulting document, the **October 2003 Conceptual Design Report (CDR)**, serves as the project roadmap.

Subsequently, the ENMRWA solicited a Peer Review of the CDR that was completed in December 2003. The PRT validated the project as detailed in the CDR as "a sound, well thought-out project. It provides the structure of a reliable and appropriate water supply system". The Peer Review team's recommendations resulted in an approximate increase in actual construction costs of $26.2 million. The additional $26.1 million increase includes $16.3 million in non-construction activities and $9.8 million in expected "premium" costs necessitated by building the project over several years in smaller construction packages. The ENMRWA took action at their Dec. 2003 regular meeting to adopt the recommendations of the Peer Review Team (PRT), and the associated financial ramifications, in moving forward with the project. Those recommendations are included in ongoing project development efforts, and reflected in the cost estimates and implementation plan detailed herein.

Participating agencies making up the UWC, and the ENMRWA, include the communities of Clovis, Elida, Grady, Logan, Melrose, Portales, San Jon, Texico, and Tucumcari; and the counties of Curry, Roosevelt, and Quay. The City of Clovis and Cannon Air Force Base (CAFB) have a water lease/purchase agreement in place, since 1996, for a portion of Clovis' reservation. The UWC was formed by Joint Powers Agreement (JPA) in 1987 for the purpose of contracting with the NM Interstate Stream Commission for the purchase, acquisition and distribution of water from Ute Reservoir. The ENMRWA was formed subsequent to the UWC, initially in November 2001, for the purpose of advanced planning, financing, design, construction and operation of the facilities. The USBR has a long history of involvement in the project and is the cooperating federal agency for funding and technical support.

Specifically, the scope of work associated with the CDR included:

- Research, review and update of prior study efforts.
- Data collection and review relative to mapping availability, land ownership, availability of water quality data, existing and projected water usage, existing community water systems and their operation, existing water rate structures, pertinent environmental process and status,

assessment of current applicable materials and technologies, identification of comparable facilities, and water yield from Ute Reservoir.

- Development of a conceptual design for the project and associated documentation. It is intended that the CDR report be used as the basis for pursuing local, state and federal funding, and as the basis for detailed design of the facilities once funding is secured.
- Evaluation of funding / financing mechanisms and availability for the project.
- A determination of water needs and uses for the individual participating entities.
- Development of a plan for staffing and administration of the system once operational.
- Development of an implementation plan and schedule for the project.
- Development of a plan for operation and maintenance of the facilities to deliver the water.

Demographics

The need for the project stems from both a declining and deteriorating water supply and the rural environment of eastern New Mexico. Population density associated with the area represented by the ENMRWA ranges from 0.5 to 30 persons per square mile and averages less than 4.5 persons per square mile. The current population within the three county service area (2000 census) is 73,000 and is approximately 32% Hispanic and 68% Non-Hispanic.

The land area used for agricultural purposes, ranching, farming, feedlots, and dairies accounts for approximately 93 percent of the total area. Approximately 68 percent of the region's population resides within the municipalities and the remainder reside in non-urban incorporated and unincorporated communities or the farms and ranches in the area. The ENMRWA members in the region to be served by the project are geographically remote. The pipeline system that will connect them all extends approximately 100 miles north-south and 40 miles east-west.

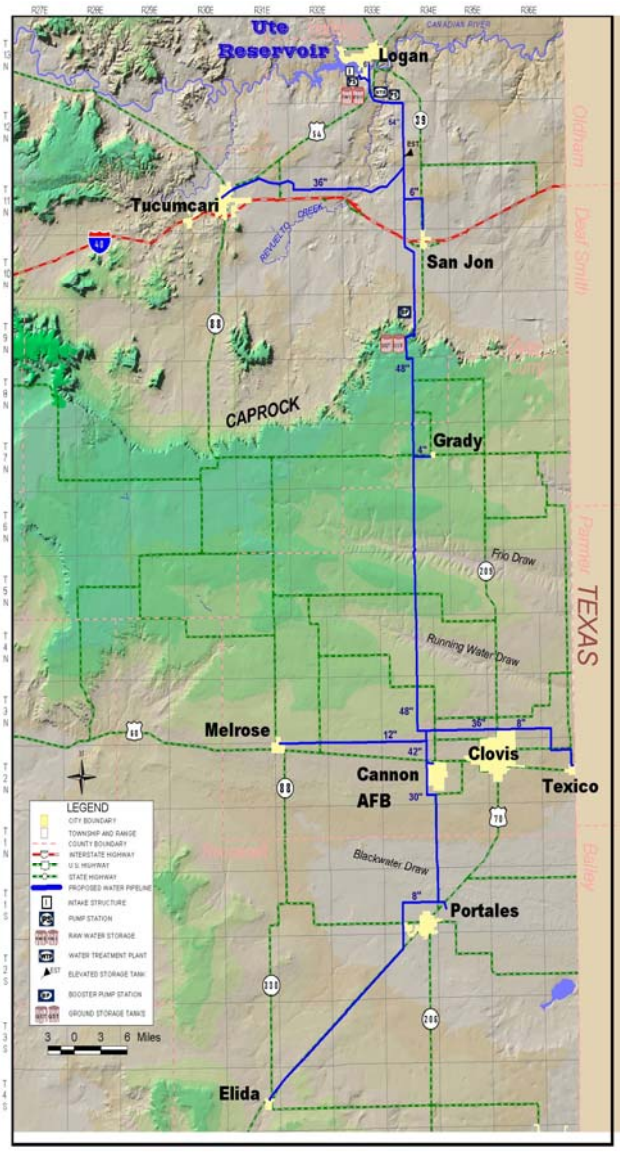
On average, the current cost of producing water from existing groundwater sources accounts for 30 to 50% of the total cost of system operation for the members. Approximately 30 to 50% of current water sales are to commercial and industrial users, and 50 to 70% to residential customers.

Key Project Assumptions

The following underlying assumptions are pertinent to this report:

- Water delivery to ENMRWA members is based on satisfying *peak-day demand*, and 24,000 ac-ft annual delivery.
- Water is centrally-treated and potable water is delivered to the members.
- Water will be delivered in bulk (wholesale) to members.
- County reservations will be available for future wholesale delivery to currently unincorporated areas—for fire protection, livestock taps and for redistribution as domestic water supply.
- The infrastructure has been sized, and associated costs developed, assuming that each participating member uses or pays for their reserved allocation of Ute water annually ("take or pay").

- Pipeline easements will be donated. Single payment damages could be reimbursed where warranted. Fee simple property will be purchased.
- The expanding development of wind energy resources in the region is potentially key to maintaining affordable operation and maintenance project costs. New Mexico's renewable wind energy resources rank 12th among the 50 states in value.
- Water costs have been developed for each member agency on the basis of possible funding arrangements described in the following section.
- It is intended that the system will deliver potable water for domestic, commercial and industrial uses, and it will not be used for the purposes of irrigated agriculture.



Key Project Features

- A lakeside intake structure and raw water pump station.
- 1.7 million gallon raw water storage (equalization) tanks.
- 39 million gallon per day (mgd) capacity central water treatment, administration and maintenance facility.
- A high service pump station at the water treatment facility.
- Treated water elevated storage—Quay Co. storage and pressure control.
- Approximately 87.5 miles of main transmission pipeline ranging in size from 30" dia. to 54" dia.
- A booster pump station at the base of the Caprock.
- 2.4 million gallon ground storage at the top of the Caprock.
- Gravity flow from the top of the Caprock to all downstream members in Curry and Roosevelt Counties.
- Approximately 94.8 miles of lateral pipelines to serve individual communities and county demand, ranging in size from 8" dia. to 36" dia.
- Telemetry and control systems.
- Infrastructure security enhancements.

- The ENMRWA has endorsed three (3) infrastructure projects as adjuncts to the core water project, as follows:
    - o $100,000 Energy recovery at Portales (PRT recommendation)
    - o $3,000,000 Advanced wastewater treatment at Tucumcari (PRT recommendation).
    - o $6,000,000 Logan wastewater collection and treatment project.

  The first item listed above takes advantage of the amount of energy available in the trunkline opposite Portales. In lieu of using a pressure reducing valve, or similar appurtenance to reduce the pressure to a match Portales' distribution system, the PRT recommends a small "hydropower" system that will accomplish a similar pressure reduction while generating usable power at the same time. An initial investment in the associated infrastructure will pay for itself many times over in energy recovered.

  The second and third items above are directly related to helping ensure long-term water quality in the reservoir for the benefit of all the authority members. Effluent from Tucumcari's wastewater treatment plant discharges to Ute Reservoir. These funds would be used to add tertiary treatment to improve effluent water quality, or alternatively for effluent reuse back to the City of Tucumcari reducing or eliminating discharge to Ute Reservoir. Tucumcari is presently studying these options. Logan's project will reduce or eliminate the potential for discharge from existing septic tanks and cesspools along the north shore into the reservoir. Since the reservoir is intended to become the primary source for municipal and commercial water supply to the water authority membership protection of its long-term water quality, and quantity, is paramount.

Funding and Cost Proration

Fiscal evaluation of the feasibility of the ENMRWS is predicated on an 80-10-10 funding mechanism for capital costs: 80% Federal assistance in the form of grant, 10% State matching funds, and 10% Local members share. This is based on an evaluation of the members' ability and willingness to pay, on experience drawn from the successes of rural water supply projects in South Dakota and other mid-western and western states, and the fact that the ENMRWS is similar in both size and in demographics of the population served by those projects. Estimated costs are prorated to the members on the basis of these primary considerations:

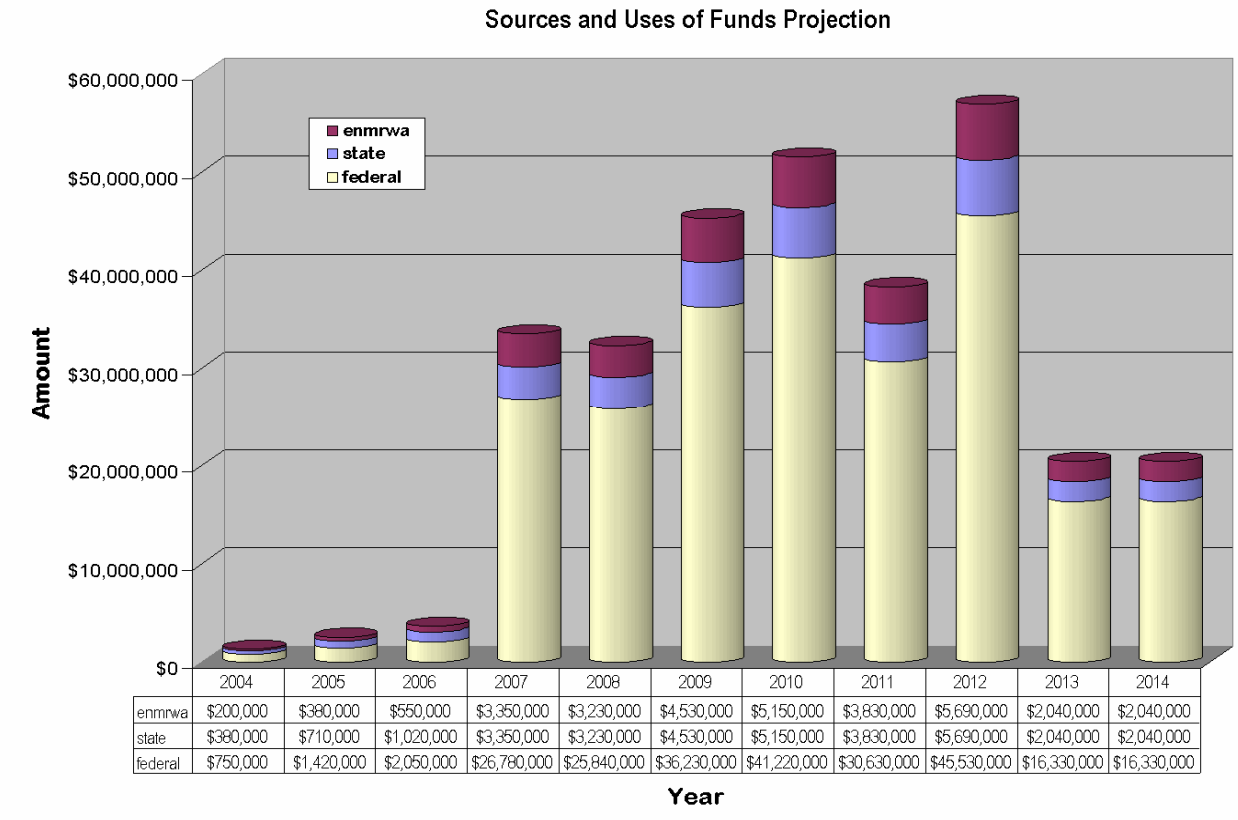
- "Common facility" capital costs, core to and necessary for the water supply system to function, are prorated on the basis of the amount of water reserved on the system. Examples of common facilities are the intake structure at Ute Reservoir, raw water pumping facilities, and the water treatment facility.
- Infrastructure capital costs specific to serving each member entity are accounted for and the associated costs applied to the respective entity. For example, the lateral pipelines from the main transmission trunk pipeline to the member communities. In the case of the three counties, where specific locations for water demand are not completely identified at this time, county level capital costs were prorated for the common facilities, along the transmission pipeline, and along lateral lines to member communities.
- Fixed non-construction costs necessary to implement the project, such as engineering, special studies, funding and programmatic activities, NEPA level environmental documentation and permitting, public involvement programs and construction management are prorated to the

member entities on the basis of their relative share of construction costs (including prorata share of the common facilities).

- The main transmission trunk pipeline is prorated on the basis of Ute water reservation and pipeline length from treatment plant.
- Operation, maintenance and replacement costs are prorated on the basis of member's relative share of the construction cost, and are adjusted for anticipated phasing of the improvements.
- 100% of recurring costs will be born by ENMRWA members and associated water users over the project life. Recurring costs are included in computed *wholesale* water rates. Recurring costs include the cost of raw water, system operation and maintenance, ISC Ute Reservoir operation and maintenance fee, debt retirement on capital cost, and replacement costs.

Probable Project Cost

The total core project cost estimate is $296.6 million, including construction and non-construction items. The three adjunct projects added by the ENMRWA take the total project cost to $305.7 million. The population potentially served is approximately 73,000 and the total project cost per capita is $4,188. The average *wholesale* cost to ENMRWA members, considering a 10% cost share plus 100% of operation and maintenance, is $1.92 per 1,000 gallons. Four major project phases are anticipated. Assuming the proposed funding model, it is expected that the four major phases will encompass approximately twelve (12) separate construction packages over seven to eight years. The following graph approximates the local, state and federal funding necessary to meet the aggressive goals defined in the implementation plan and schedule for the project over the next 11 years.



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
enmrwa	$200,000	$380,000	$550,000	$3,350,000	$3,230,000	$4,530,000	$5,150,000	$3,830,000	$5,690,000	$2,040,000	$2,040,000
state	$380,000	$710,000	$1,020,000	$3,350,000	$3,230,000	$4,530,000	$5,150,000	$3,830,000	$5,690,000	$2,040,000	$2,040,000
federal	$750,000	$1,420,000	$2,050,000	$26,780,000	$25,840,000	$36,230,000	$41,220,000	$30,630,000	$45,530,000	$16,330,000	$16,330,000

Capability to Pay and Regional Economic Benefits

The USBR Denver Technical Service Center prepared an economic analysis of the project. The analysis includes an estimate of the *capability* of water users to pay for construction of a Ute Reservoir pipeline, the potential *willingness to pay* of water users for water supply improvements associated with the pipeline, and the potential regional economic impacts and tax impacts from building the pipeline.

The estimates of payment capability include both households and commercial water users. The capability of households to pay for water supply improvements is based on an analysis of household income, expenses, and residential water payments made in similar areas. The payment capability of commercial water users is based on the results of previous rural water system studies and current business activity in eastern New Mexico.

The total net payment capability was estimated to range from $2.8 million to $11.3 million annually for all households in the study area and $1.6 million to $4.9 million annually for commercial establishments. The most likely range of net payment capability is $10 million to $11 million annually for households and $2.6 million to $4.9 million for commercial establishments. The most likely range of estimates is based on the maximum payment capability factors observed for comparable water suppliers used in the payment capability analysis. The payment capability estimates would cover operation, maintenance, repair, raw water costs, and operation and maintenance fees associated with the proposed pipeline project.

Cost Estimate Summary, June 2004

CAPITAL COSTS		
Total Construction Cost (5)	**$**	**261,694,000**
Capital Outlay - Federal Assistance (80%)	$	209,355,000
Capital Outlay - State Assistance (10%)	$	26,169,000
Capital Outlay - ENMRWA members (10%)	$	26,169,000
Non-Construction Cost		
Detailed design services	$	15,156,000
Financing and Funding Activities	$	216,000
Public Involvement Program	$	216,000
Environmental and Permitting (3)	$	1,325,000
Construction management services	$	15,156,000
Special Studies	$	1,850,000
Program Management	$	10,106,000
Total Non-Construction Cost	**$**	**44,025,000**
Capital Outlay - Federal Assistance (80%)	$	35,220,000
Capital Outlay - State Assistance (10%)	$	4,402,500
Capital Outlay - ENMRWA members (10%)	$	4,402,500
Total Capital Cost (All Phases, Full Delivery) (4)	**$**	***305,719,000***
Federal Assistance (80%)	$	244,575,200
State Assistance (10%)	$	30,571,900
ENMRWA Membership (10%)	$	30,571,900
RECURRING COSTS (Annual)		
Raw water cost ($25 per ac-ft)	$	600,000
Debt service on financed portion (20 year period @ 5%)	$	2,373,000
Cost of operation and maintenance (annual, first 5 year average) (2)	$	10,337,000
Replacement costs (annual, first 5 year average)	$	1,602,000
ISC Ute Reservoir O&M Fee ($5.60 / af)	$	134,400
Sub-Total Annualized Costs (1)	**$**	**15,046,400**
System average wholesale water rate projection ($ per 1000 gal.)	**$**	**1.92**

1. Cost Estimate assumes full delivery of 24,000 ac-ft and payment for water reserved by enmrwa members.
2. Windpower development in the region could reduce O&M and water rates by up to 14%.
3. Per USBR Estimates for NEPA investigations, documentation and compliance costs.
4. Ten (10) year implementation plan proposed
5. Includes three adjunct projects added by ENMRWA ($9.1 million)

The willingness to pay estimates measure the amount water users would be willing to pay to improve the water supply under current conditions. The willingness to pay of households is estimated to be $2,278,600 annually and the willingness to pay of commercial water users is estimated to be $425,000 annually, for a total willingness to pay of a little over $2.7 million each year given current levels of population and commercial development. Both of the willingness to pay estimates are based on the *benefits transfer method*, which can result in a significant level of error.

The eastern New Mexico region has experienced a decline in groundwater levels over recent years. If this trend were to continue over time without planning for future use, it is very likely that the cost of providing water supplies would increase significantly in the future. As a result, the true benefit from providing water through an alternate surface water supply will be greater than the estimated willingness to pay. Assuming future water payments without an alternative water source double, the benefits from the pipeline could be $5 million annually.

Construction and operation expenditures associated with the proposed eastern New Mexico Rural Water System will generate regional economic impacts. It is estimated that the project would generate an estimated $100 million in regional output, $25 million in employee compensation, and a little over 1,500 jobs during construction. Annual impacts from operation and maintenance activities would be about $16.5 million worth of regional output, $3.6 million in employee compensation, and 170 jobs.

It should also be recognized that any commercial activity attributable to the water supply project, either through the attraction of businesses due to improved water supplies or through the retention of businesses that would have left if water supplies became worse in the future, would also generate positive regional economic impacts. The magnitude of these impacts cannot be estimated with any certainty because the extent to which business activity is affected is not known.

Construction of the pipeline will also generate tax revenues. It is estimated that the project will generate as much as $8.5 million in gross receipts tax revenues. Gross receipt tax revenues from operation and maintenance expenditures to all levels of government are estimated to be over $450,000 annually. Pipeline construction will also have an impact on state income tax payments. Income tax payments are estimated to increase by $360,000 as a result of construction and $53,000 annually from operation and maintenance expenditures. Implementation of an additional gross receipts tax could increase the financial resources available to pay for a pipeline significantly.

Implementation and Schedule

The proposed approach to project development and implementation is anticipated to take approximately 11 years, from the delivery of the Conceptual Design Report in October 2003, to the completion of construction of Phase 4 improvements in October 2014. A copy of the detailed Implementation Plan and Schedule presented in Section 7 of the CDR is included at the end of this brief. The main activities envisioned are as follows:

- **Project Development Activities**—July 2004 through January 2012.
    - Funding and supporting activities
    - Pilot treatment testing
    - Public involvement activities

- Environmental Investigations and Documentation (NEPA)
- Preliminary and Final Design

- **Construction Activities**—November 2007 through October 2014
  - Phases 1 though 4

Based on the detailed analysis presented in the CDR, the ENMRWA concludes that:

1. The ENMRWS is a feasible solution to the regional water supply problem. From an engineering standpoint, the system as conceptually conceived is viable. From a funding and project cost standpoint, it is the potential leverage of local and state funds with significant federal participation that makes the project feasible with respect to the regional users ability to pay for and operate the system.
2. The formation of the ENMRWA (the "Authority" as was recommended in the October 2000 Conceptual Design Report) representing the interests of the UWC members is a prudent step, and provides the mechanism for establishing operating procedures, seeking federal and state funding, and initiating planning and design efforts. The ENMRWA hired a Program Manager to serve as the point of contact for the Authority and to represent the membership in subsequent project development activities.
3. It should immediately concentrate its efforts on seeking federal authorization and subsequent funding support, working with the State of New Mexico within the framework of the Water Project Fund for dedication of a state match to the project, and on initiating a public awareness/education program.
4. The Authority should initiate negotiations with Farmer's Electric Co-op over a satisfactory long-term power rate. Additionally, the Authority should continue to strongly pursue renewable energy from wind power development in the region as a potential long-term operation and maintenance cost shaving measure.
5. The Authority should initiate the appropriate selection of consultants to assist the members with funding, planning, design, construction and public awareness activities in support of project development. The consultant team's efforts should initiate pilot testing to finalize the water treatment program, preliminary property owner contacts to identify property acquisition opportunities and constraints, and NEPA investigations and documentation.
6. Planning efforts should include development of detailed operating and administrative procedures to be followed, and a process for intra-authority interim water transfers between members within the operating procedures of the Authority.
7. The Authority, in collaboration with the ISC and the Village of Logan, must remain committed to long-term water quality monitoring and source water protection at Ute Reservoir.
8. A great deal of work and background has been developed in support of the ENMRWS over a 40-year period. A healthy, participative, and collaborative effort between the project sponsors and stakeholders is crucial to ensuring that the surface water resource will be put to beneficial use in a timely and cost-effective manner.

Current and Ongoing Efforts

- Studies are nearing completion regarding development of individual ENMRWA member financial plans for long-range capital improvements, including this project.
- Studies are nearing completion on an update to water rate setting and cost proration.
- The Authority has established a Public Involvement Committee, developed a structured public involvement program and initiated the public education component.
- The Authority has established a By-Laws Committee that is actively developing operating rules and procedures.
- The NM Interstate Stream Commission (ISC), working with regional stakeholders, supports development of a Ute Reservoir Area Master Plan aimed at long-term protection of water quality and quantity and multi-purpose use of the reservoir.
- The Water Authority has applied for State funding assistance that is under consideration by the NM Water Trust Board for the 2005 Legislative Session.
- The Program Manager is currently updating the 2003 CDR Implementation Plan and Schedule to reflect ongoing activities at the local, state and federal level.
- The Program Manager, in conjunction with the Authority's consultants working on financial plans and water rate setting, is developing a *temporal* cost estimate showing costs incurred by the member entities and the associated impact to water rates on an annual basis when the project starts up (assumed to be 2012).
- The Authority intends to prepare an update to the 2003 CDR, incorporating current financial planning activities and addressing questions posed by the US Senate Subcommittee on Water and Power and the USDI Bureau of Reclamation, as the project Feasibility Study by May 2005.
- The Authority has approved a plan to solicit and select consultants for the Feasibility Update, Preliminary Design of the entire project, associated special studies, and NEPA investigations and documentation. It is expected that the Consultant contracts will be in place January 2005.