Chapter 1. Purpose and Need

1.1 Introduction

The Eastern New Mexico Rural Water Authority (ENMRWA), the project proponent, is proposing to construct the Eastern New Mexico Rural Water System Project (Project). The project was authorized on March 30, 2009 in the Omnibus Public Land Management Act of 2009 (P.L. 111-11; 123 Stat. 991 [1300-1303]; Appendix A). If Congress appropriates funds, it is anticipated that the U.S. Bureau of Reclamation (Reclamation) would provide federal funds for project construction. Reclamation would transfer federal funds to the ENMRWA. Reclamation is the lead federal agency for the Environmental Assessment (EA). The Proposed Action is funding the Project, which consists of construction of a pipeline and associated intake, storage, pumping, water treatment, and delivery facilities from Ute Reservoir to the eastern New Mexico municipalities of Clovis, Elida, Grady, Melrose, Portales, and Texico; Curry and Roosevelt counties; and Cannon Air Force Base (CAFB) (Participating Communities; Figure 1). The overall Project Area for the EA includes the area potentially affected by the Project—Quay, Curry, and Roosevelt counties. The proposed federal action would provide funding to the ENMRWA to deliver 16,450 acre-feet (AF) of water per year from Ute Reservoir to the Participating Communities to meet a portion of current and future water supply needs. The planning horizon considered in this EA is 2060, which is within the normal range for water supply projects (40- to 60-year planning horizons are common). The Project is anticipated to supply water well beyond the planning horizon.

Key Dates for Ute Reservoir

- 1950 – Canadian River Compact established
- 1957 and 1959 – Legislative approval for Reservoir and Dam
- 1962 – Reservoir complete
- 1984 – Reservoir expansion
- 1987 – Ute Water Commission established
- 1993 – Lawsuit against New Mexico regarding Canadian River Compact
- 1996 – Joint Powers Agreement reached to reserve 24,000 AF per year of municipal supply for Ute Water Commission
- 1998 – U.S. Fish and Wildlife Service lists the Arkansas River shiner as a threatened species
- 2005 – Arkansas River Shiner Management Plan signed
- 2009 – ENMRWS Project Authorized

The ENMRWA and the New Mexico Congressional delegation are currently seeking federal funding for the Project, to be administered by Reclamation. Because federal funding through Reclamation is a discretionary federal action and subject to compliance with the National

Environmental Policy Act (NEPA), this EA was prepared to evaluate the potential environmental consequences of the Proposed Action and other alternatives for constructing the Project.

The purpose of Ute Reservoir is to store water allocated by the Canadian River Compact to New Mexico. At the time of its planning and construction, Ute Reservoir water was anticipated as a water source for municipal and industrial use, specifically to replace a declining ground water supply in Eastern New Mexico.

1.2 Background

The following background information provides a summary of Ute Reservoir and the compacts, contracts, agreements, management plans, and other legal obligations that dictate its operation and the use of its water. Two documents—the Canadian River Compact (Compact) and the authorizing legislation (see sidebar below) are included in Appendix A.

1.2.1 Ute Reservoir Construction and Expansion

The State of New Mexico (State) constructed Ute Reservoir on the Canadian River in 1962. The purpose of Ute Reservoir was to store water allocated by the Compact to New Mexico. Ute Reservoir water was anticipated as a source for municipal and industrial (M&I) use, specifically to replace a declining ground water supply in Eastern New Mexico. Upon completion, the reservoir had a spillway elevation of 3,760 feet and a maximum capacity of 110,000 AF. In 1984, the State expanded the reservoir, raising the spillway elevation to 3,787 feet and increasing the maximum capacity of the reservoir to 245,000 AF. The water in Ute Reservoir is permitted to the New Mexico Interstate Stream Commission (NMISC), and administered by the Office of the State Engineer (NMOSE). The reservoir is bordered by Ute Lake State Park (ULSP), a popular recreation destination for activities such as boating, fishing, hunting, and camping. Private lands and the Village of Logan also border the USLP.

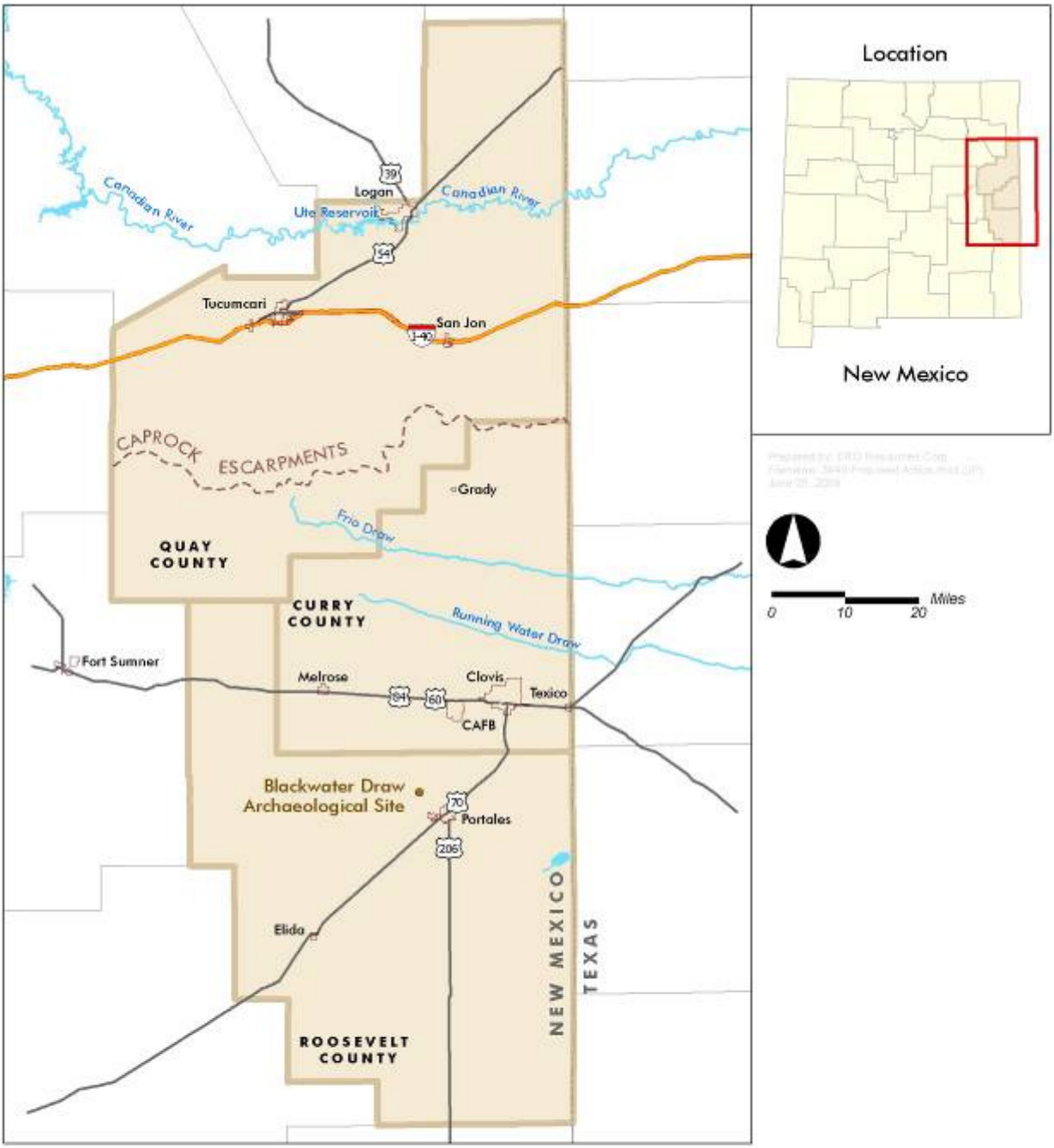
Project Authorization

The ENMRWS Project was authorized on March 30, 2009. Section 9103 of the Omnibus Public Land Management Act of 2009 authorizes financial and technical assistance to the ENMRWA, with the following limitations:

- No facilities for irrigated agricultural purposes;
- Total federal cost share not more than 75%;
- NEPA compliance must be completed prior to expenditure of federal funds for construction; and
- An Operation, Maintenance and Replacement Plan must be developed.

Omnibus Public Land Management Act of 2009 (P.L. 111-11; 123 Stat. 991 [1300-1303]; Appendix A)

Figure 1. Project Vicinity.



1.2.2 Ute Reservoir Operation and the Compact

Allocations of water from the Canadian River watershed between New Mexico, Texas, and Oklahoma are specified in the Compact as modified by Supreme Court Stipulated Judgment and Decree (Compact; Appendix A). The Compact is a water allocation agreement that allows New Mexico to store certain waters originating in the drainage basin of the Canadian River below the Conchas dam. According to the Compact, New Mexico must release all water in excess of 200,000 AF of total conservation storage in all reservoirs below Conchas Lake. NMISC releases water from Ute Reservoir assuming 6,760 AF of water is in storage capacity in reservoirs other than Ute Reservoir downstream of Conchas Lake. Approximately 193,240 AF of water can be stored in Ute Reservoir before water must be spilled. The Compact limits the amount of water stored, not the amount of water used. The State has no minimum delivery obligations to downstream states under the Compact. Throughout the remainder of this EA, the 193,240 AF storage limit is referred to as the "Compact maximum."

Ute Reservoir Water Apportionment

ENMRWA (Participating Communities)	
City of Clovis	12,292 AF
Village of Elida	50 AF
Village of Grady	75 AF
Village of Melrose	250 AF
City of Portales	3,333 AF
Town of Texico	250 AF
Curry County	100 AF
Roosevelt County	100 AF
Quay County Entities (non-participants)	
Village of San Jon	150 AF
City of Tucumcari	6,000 AF
Quay County	1,000 AF

1.2.3 Ute Reservoir Water Contract

In 1987, NMISC entered into a contract with members of the Ute Water Commission (UWC) to reserve water stored in the Ute Reservoir for future M&I use. The UWC is a 12-member organization that includes the eight members of the ENMRWA (see sidebar). The NMISC sustainable yield analysis found that 24,000 acre-feet per year (AFY) will be available from Ute Reservoir for use by the UWC. A portion of this water (16,450 AFY) is reserved by the UWC for members of the ENMRWA, and the remainder (7,550 AFY) is reserved by the UWC for Quay County entities (San Jon, Tucumcari, and Quay County). The UWC, on behalf of its members, may exercise its option to purchase any portion of the 24,000 AFY for the benefit of any of its members. Diversion plans and specifications must be approved by the NMISC, and diversions are subject to the terms and conditions of the Ute Reservoir Water Contract. UWC is responsible for any water diversion and conveyance facilities, and any easements necessary for those facilities. In addition, UWC must measure any diverted water and provide documentation of water volumes to the NMISC.

Temporary facilities for withdrawal of UWC water for construction uses at Ute Lake Ranch, along the south shore of Ute Reservoir, are planned. The City of Tucumcari and Quay County have exercised their option to purchase approximately 800 AFY for temporary uses for this residential development.

1.2.4 1962 Memorandum of Agreement

On August 20, 1962, the NMISC and the State Game Commission (now the New Mexico Department of Game and Fish (NMDGF)) entered into a memorandum of agreement that established a minimum reservoir elevation of 3,741.6 feet (commonly referred to as the "fisheries minimum pool"). The purpose of the agreement was to provide a minimum water surface and storage, and this elevation provides a constraint on the reservoir operations.

1.2.5 Arkansas River Shiner Management Plan

The Canadian River and Revuelto Creek in Quay County provide habitat for the threatened Arkansas River shiner (shiner). In 2005, the State executed an Arkansas River Shiner Management Plan (Management Plan) in lieu of critical habitat designation (U.S. Fish and Wildlife Service (Service) 2005). The plan provides for the protection of State water resources and species. The plan was developed by the Canadian River Municipal Water Authority (CRMWA) to maintain and enhance shiner habitat integrity in the Canadian River between Ute Dam and Meredith Lake, Texas (Service 2005). Objectives of the CRMWA Plan include:

- Maintaining base streamflows and seepage from Ute Dam;
- Controlling saltcedar (*Tamarix ramosissima*) and Russian olive (*Elaeagnus angustifolia*);
- Controlling erosion in riparian zones; and
- Minimizing impacts to shiner low-flow habitat conditions from off-road vehicle groups.

Ongoing surveys conducted by the NMISC and NMGFD indicate that the shiner population between Ute Dam and the New Mexico/Texas state line (state line) composes a relatively high proportion of the total fish abundance in this reach. The population is self-sustaining under the current hydrologic regime (CRMWA 2005). NMISC is committed to maintaining the existing hydrologic regime to protect downstream populations (CRMWA 2005).

1.3 Purpose and Need

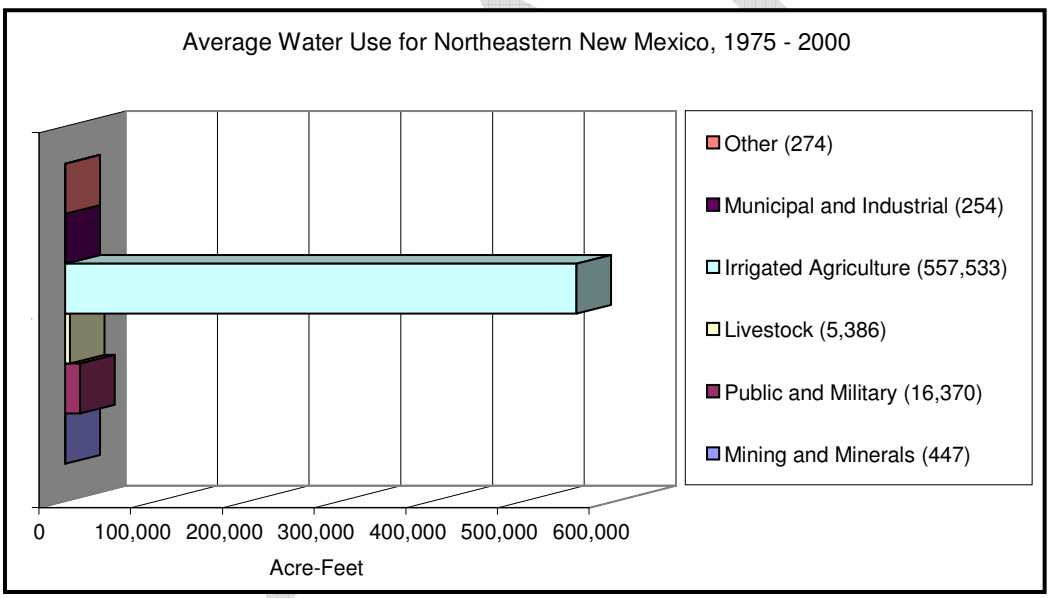
The purpose of the federal action is to provide partial federal funding and oversight to implement the Proposed Action. The purpose of the Proposed Action is to provide the Participating Communities in rural eastern New Mexico a long-term sustainable water supply and to deliver,

through the Project, 16,450 AF of water annually from Ute Reservoir through 2060. The Project uses 2060 as the planning horizon, and water delivery is anticipated to continue beyond 2060. The need for the Project is to meet the current and future demand for municipal water, including drinking water.

1.3.1 High Plains/Ogallala Aquifer Uses

The High Plains/Ogallala (Ogallala) aquifer underlies portions of New Mexico, Texas, Oklahoma, and Kansas. At this time, the Ogallala aquifer is the only source of potable water for the Participating Communities, and has many other purposes. The largest withdrawals from the Ogallala aquifer are for irrigated agriculture. In 2002, about 237,300 acres were irrigated in the three-county regions (Quay, Curry, and Roosevelt). Most of the irrigated acreage (94 percent) is in Curry and Roosevelt counties, which are irrigated solely with ground water (D.B. Stephens and Associates 2007). Irrigated agriculture accounts for about 96 percent of all ground water diversions (Figure 2).

Figure 2. Northeast New Mexico Historic Ground Water Diversions.



Source: D.B. Stephens and Associates 2007.
Note: Categories for "municipal and industrial" and "public and military" represent total M&I demands.

1.3.2 Existing Water Supply

Currently, all Participating Communities rely solely on ground water from the Ogallala aquifer for their M&I water supply. Overall, historical water demand is much greater than aquifer recharge, which has resulted in declining water levels throughout the aquifer (Figure 3). On November 13, 2009, the State Engineer closed the High Plains aquifer in the Curry-Portales

Underground Water Basins to new permits for agricultural, commercial, municipal, or industrial wells. Permits for small uses, as well as use transfer (such as agricultural to municipal), changes in well locations, replacement wells and supplemental wells will still be allowed, if statutory requirements are met.

As the water levels in the aquifer drop, well production rates also decline and ground water becomes too expensive to meet demands. Wells then have to be extended or replaced to reach to greater depths. The ability of the Participating Communities to provide a reliable M&I water supply is currently or will soon be limited by declining ground water levels in the Project Area. As shown in Figure 3, most of the Ogallala aquifer in the Project Area is characterized as having "little or no saturated thickness" (McGuire 2007). In addition, some Participating Communities face declining ground water quality that cannot be remedied without additional water treatment infrastructure. As ground water levels decline, water quality often declines as well (Section 3.1.2 — Water Quality for more details).

City of Clovis Water Supply

Since 2003, the static water levels in all of NMAW's wells in the Ogallala aquifer have declined an average of 3 feet per well per year. Annual well production rates are decreasing on average 16 gallons per minute per well, which amounts to a 10 percent decrease in annual output.

"Today we are running 59 wells to produce the same amount of water as we could produce with 28 wells a decade ago" (Kathy Wright, NMAW).

This year, NMAW requires $2.18 million to rehabilitate six irrigation wells and convert them to domestic use to maintain water supplies to existing customers.

New Mexico Public Regulation Commission May 15, 2009

The U.S. Geological Survey (USGS) and the Eastern Plains Council of Governments estimate the New Mexico portion of the Ogallala aquifer has a theoretical storage capable of meeting current M&I and agricultural demand through 2040 (McGuire 2003). However, the actual useful life of the Ogallala aquifer may be shorter because of limitations on recoverable storage. Studies by the cities of Portales (Wilson 2001, 2004) and Clovis (New Mexico American Water (NMAW) 2004) determined that the ground water resource in the two-city area would be essentially exhausted between 2033 and 2040. NMAW, water supplier to Clovis, reports that water levels at producing wells are declining rapidly, which limits NMAW's ability to provide water to Clovis. New wells lose capacity so quickly that they are no longer economical to operate after 8 years (NMAW 2004; see sidebar).

Portales has two well fields in the Ogallala aquifer that supply the City's water. These two well fields have experienced rapid declines in both saturated thickness and well productivity (Wilson 2001, 2007) (Figure 4). A 2004 ground water report by Wilson concluded that, even assuming Portales could acquire lands and water rights currently used by farmers in the nearby areas, about 7 years of water supply would remain in 2043 with no other ground water options available.

Figure 3. Declining Water Levels in the Ogallala/High Plains Aquifer within the Project Area.

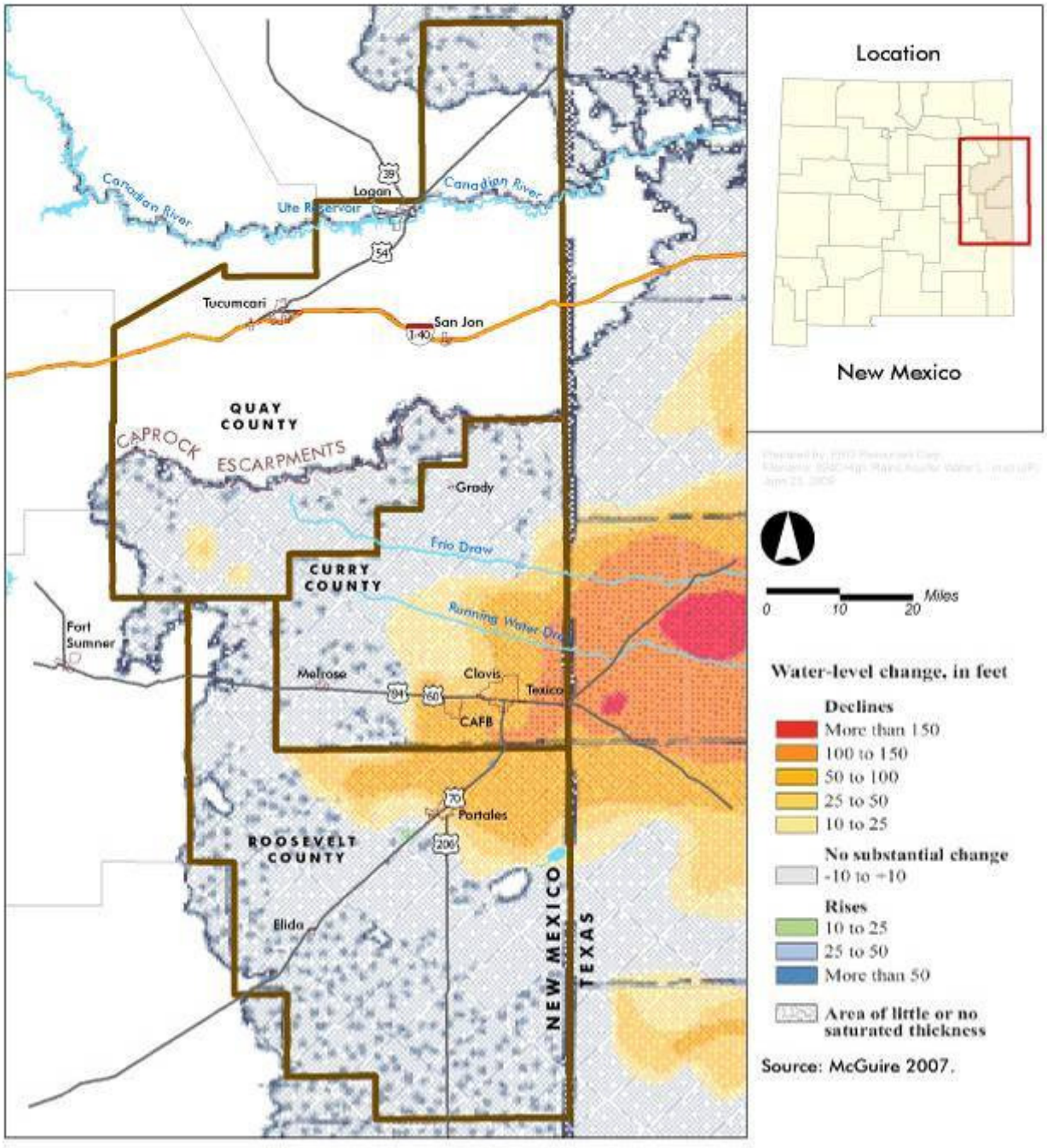
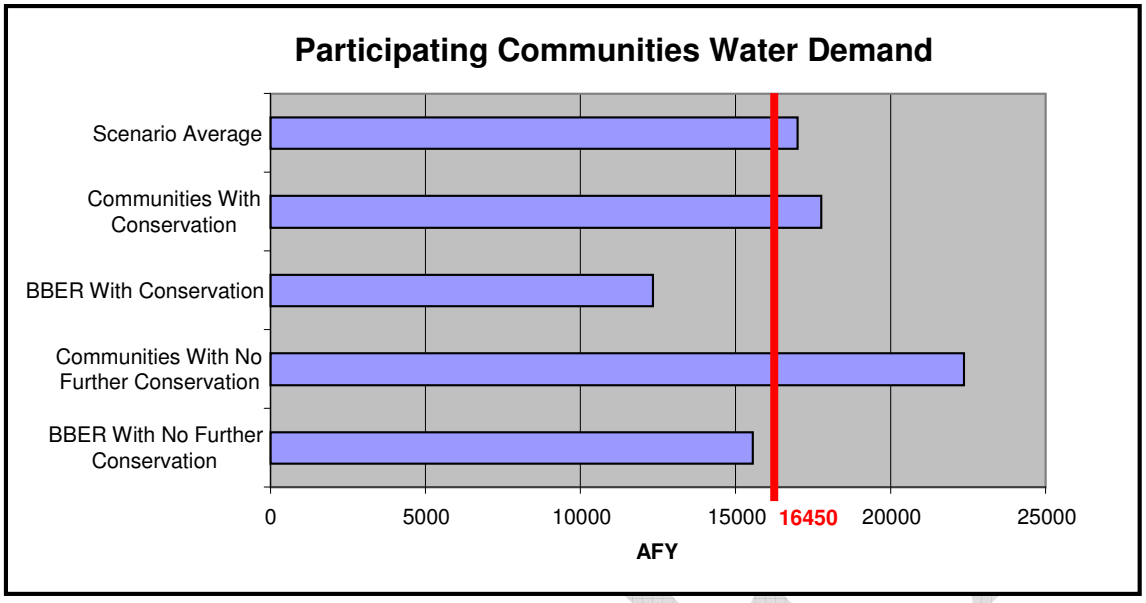


Figure 4. 2060 Water Demand Forecasts for Participating Communities.



Source: CH2M HILL 2006b.

The other smaller Participating Communities have observed similar declines in well capacities and water levels, and have had to add water supply wells because of the associated reductions in pumping capacity (Cooper, pers. comm. 2008). The smaller communities have fewer water supply options and infrastructure costs (including drilling new wells) are much higher on a per-person basis.

The declining quality of existing ground water supplies, in conjunction with changing State water quality standards (e.g., drinking water standard for arsenic), is another reason for securing a replacement water supply. Aquifer declines have contributed to increased concentrations of certain constituents for drinking water supplies, including total dissolved solids (TDS), arsenic, fluoride, iron, radon, and volatile organic compounds. Currently, the Participating Communities disinfect ground water with chlorine and use well operational blending or temporary well shutdowns to maintain adequate water quality. Additionally, CAFB treats a portion of its water supply with reverse osmosis for removal of fluoride, and the City of Texico uses an airstripper to remove volatile and semivolatile organic compounds. Wells also are taken out of production permanently as water quality declines. Texico, Melrose, Grady, and Elida are experiencing difficulty complying with State and federal drinking water requirements (CH2M HILL 2006a). As water levels decline, constituent concentrations are expected to increase and new treatment systems would be needed.

1.3.3 Existing Water Demand

Table 1 shows the average annual water supplied in recent years (2004 to 2006) to the Participating Communities based on actual data (NMED 2007; NMAW, pers. comm. 2008; Rebman, pers. comm. 2008). For Curry and Roosevelt counties, the estimated annual demands are shown. The average water use for the counties is based on current population that would be served by the Project in those counties, multiplied by the average per capita water use. The total average annual water use for the Participating Communities for 2004 to 2006 was about 14,671 AF (Table 1).

Table 1. Average Water Use, 2004–2006.

Participating Communities	Average Annual Water Use (AF)
City of Clovis	6,162
Town of Elida	49
Village of Grady	21
Village of Melrose	141
City of Portales	4,217
City of Texico	171
Cannon Air Force Base	1,121
Curry County*	1,013
Roosevelt County*	1,776
Total	**14,671**

*Estimated annual demand.

Sources: NMED 2007; Rebman, pers. comm. 2008; NMAW, pers. comm. 2008.

1.3.4 Projected Water Demand

The water demand forecasts for Participating Communities used county population projections made by the University of New Mexico Bureau of Business and Economic Research (BBER) and forecasts developed for several Participating Communities in recent 40-year water plans and other studies. BBER county population forecasts were combined with 2000 Census (CH2M HILL 2006b) data to obtain population estimates for Participating Communities. These projections assume that the year-2000 member-to-county population fractions remain constant through the 2060 planning horizon. Based on BBER forecasts, in 2060 the total population for Participating Communities is expected to be 62,932. Under the forecasts developed by Participating Communities, the population is expected to reach 90,576 by 2060 (CH2M HILL 2006b). BBER's estimates of growth likely are conservative, and the Participating Communities' estimates are optimistic; the actual future growth in population probably will lie between the two estimates.

BBER and Participating Communities' projections were coupled with per capita use rates to develop a series of overall water demand forecasts through 2060 (Figure 4). The first set of forecasts assumes that no further conservation will take place in the Participating Communities. These forecasts are based on 2000 per capita use data for each community from the New Mexico Environment Department (NMED). The second set of forecasts assumes the Participating

Communities will reduce their per capita use. The average use for the Participating Communities is about 200 gallons per capita per day (gpcd), and the reduced use for forecast purposes was 175 gpcd. The range of water demand/water use in comparable areas in the southwestern U.S. is approximately 144 to 223 gpcd (CH2M HILL 2005a). The 2060 forecasts range from a total projected water need of 12,340 AFY (BBER population projection with conservation measures) to 22,370 AFY (community population projection with no further conservation measures). The average of all water demand projection scenarios is 17,000 AFY. This compares closely with the July 2005 Participating Communities delivery request of 16,450 AFY (Figure 4). The current average demand is about 14,670 AFY.

Water conservation plays an important role in the demand forecasts developed for the Participating Communities. Most Participating Communities have water rate structures that reward water conservation. For example, water gets more expensive per gallon as more is used. Clovis and Portales have wastewater reuse programs involving application of treated effluent to nearby agricultural land (CH2M HILL 2005a). While reuse by agriculture does not reduce per capita M&I demand within the communities, it does have the beneficial effects of slightly reducing overall ground water pumping in the local area. Because irrigated agriculture in the Project Area uses roughly 34 times more water every year than M&I uses, the beneficial effect of M&I reuse is very small. The Ogallala aquifer has high regional demand and low natural recharge, and is "effectively being mined and cannot be considered a renewable resource" (Wilson 2007). Water conservation prolongs well life, but is not a complete or permanent solution. With even the most aggressive conservation (e.g., the Participating Communities use only 50 percent of their current demand), there is still a need for a long-term sustainable potable water supply. This is largely because of high agricultural demand for water, which would overwhelm any effects of conservation.

In summary, the Participating Communities have reserved Ute Reservoir water to meet future M&I water demands and to replace existing unsustainable ground water supplies that are diminishing in quantity and quality. The total reservation of 16,450 AFY will meet all existing needs and a portion of future water needs for the Participating Communities through the 2060 planning horizon, with the exception of the City of Portales. The City of Portales' water reservation is less than existing water use, and the remaining demand will be met by continuing to pump ground water. Table 2 shows a comparison of existing water use, projected water needs, and the amount the Participating Communities have reserved. Some Participating Communities have reserved water in excess of their current and forecasted water needs, while some have

reserved less. It is possible for the communities to reallocate or sublease their water allocation to balance community needs.

Table 2. Participating Communities Water Use, Future Demand, and Water Reservation.

Participating Community	Current Water Use (AFY)	2060 Demand Estimate (AFY)[1]	Water Reservation (AFY)
City of Clovis	6,162	8,988	12,292 [2]
Town of Elida	49	74	50
Village of Grady	21	27	75
Village of Melrose	141	203	250
City of Portales	4,217	4,523	3,333
City of Texico	171	293	250
CAFB	1,121	1,706	-
Curry County	1,013	1,188	100
Roosevelt County	1,776	-	100
Totals	14,671	17,002	16,450

[1] Demand estimates for Roosevelt County are incorporated into other entities.

[2] Includes CAFB.

Note: Some Participating Communities have reserved water in excess of their current and forecasted water needs, while some have reserved less. It is possible for the communities to reallocate or sublease their water allocation to balance community needs.

Source: CH2M HILL 2006b.

1.4 Issues Summary

Scoping is the first phase of the public involvement process. It is designed to help determine the scope of issues and alternatives to be addressed in the NEPA process. The intent of the scoping process is to gather comments, concerns, and ideas from those who have an interest in, or may be affected by, the Proposed Action, and identify issues the public and government agencies believe are most important. During September 2007 scoping, Reclamation sought and received input from the public, interested organizations, and agencies to help identify issues for evaluation in the EA. The following issues were identified during scoping.

1.4.1 Surface Water Elevation in Ute Reservoir

The Project would have an intake in Ute Reservoir, and up to 16,450 AFY would be pumped out of the reservoir. The current demands on the reservoir include releases associated with the Compact, reservoir spills, natural evaporation and seepage from the reservoir, and minor construction water uses for Ute Lake Ranch. There is a concern that pumping withdrawals would lower the reservoir's surface water elevation and could affect surrounding residential developments and recreation opportunities (also see Issue 1.4.7, Socioeconomic Conditions).

1.4.2 Surface Water Flow in the Canadian River

The Project would withdraw water from Ute Reservoir as described in Section 1.4.1. Although controlled releases to the Canadian River occur only occasionally (about once every 5 years). when storage in the reservoir exceeds the Compact maximum, flows in the river immediately downstream of the dam are primarily a result of seepage through or beneath the dam. There is a concern that changes in reservoir pool elevation may change the seepage rate and, therefore, change the baseflow in the Canadian River downstream of the dam. Changes in baseflow could affect downstream conditions, including the stream channel and wildlife habitat.

1.4.3 Ground Water Hydrology

Currently, the Participating Communities are relying on a nonsustainable ground water source—the Ogallala aquifer—for M&I water supplies. Water quality and water levels in the aquifer are declining in some areas because the aquifer is mined primarily for agricultural purposes. There is a concern that if the Project does not occur, communities depending on the aquifer may be left without a M&I water supply.

1.4.4 Water Demands and Water Conservation

The purpose and need for the Proposed Action is based on existing and potential future water demands. Current and proposed conservation measures may affect future water demands. There is a concern among Quay County communities that Participating Communities are using too much water, and believe the Participating Communities could implement more conservation measures as an alternative to the Proposed Action.

1.4.5 Water Quality

There is a concern that changes in ground water quality in the absence of the Project could require additional water treatment infrastructure, which would affect water cost. There is also a concern that irrigation use and residential septic tanks around Ute Reservoir are causing poor surface water quality, making it untreatable for potable uses or reducing water treatment options. In addition, there is a concern that pumping water out of Ute Reservoir may affect water quality in the reservoir.

1.4.6 Wildlife and Threatened and Endangered Species

The Project Area provides wildlife habitat. There is a concern that depletions in the surface area of Ute Reservoir and flows in the Canadian River, and temporary or permanent impacts from

facilities associated with the Project may affect fish and wildlife habitat, other aquatic life, and habitat for federally threatened and endangered species, including the shiner.

1.4.7 Socioeconomic Conditions

The Project Area is predominantly rural, with Clovis and Portales as the major population centers. Tourism and agriculture are important regional economic sectors in the Project Area. There is a concern that the Proposed Action may affect socioeconomic conditions of Quay, Curry, and Roosevelt counties; communities in these counties; and downstream water users. Potential concerns include impacts to population and employment, changes in water costs, and the effect of changing Ute Reservoir water levels on the Quay County tourism and recreational economy. There is also concern that without an alternative water supply, socioeconomic conditions in Curry and Roosevelt counties, and communities in those counties, may be affected.

1.4.8 Recreation

ULSP is an important recreational resource for the State. Visitation to ULSP is especially high when recreation opportunities are limited at nearby reservoirs (including Brantley and Conchas) due to low lake levels. Ute Reservoir has historically had a stable water elevation compared to other reservoirs in the State. There is a concern that changes in the water levels at Ute Reservoir may change recreational opportunities in the Project Area, specifically in Logan and Quay County. There is also concern about the effect of changing reservoir water levels on the use of private boat docks.

1.4.9 Cultural Resources

The Project Area contains both historic and prehistoric archaeological sites. A variety of historic buildings occur in the Project Area. In addition, four primary areas may contain cultural resources: Blackwater Draw, Muleshoe Dunes, the Canadian River Valley, and draws and playas on the Llano Estacado. There is a concern the Project may adversely affect cultural resources.

1.5 Federal Permits, Licenses, and Approvals

Implementation of the Project would require compliance with applicable federal, state, and local regulatory agency laws, approvals, review, and permitting requirements. Permitting requirements may vary with alternative. The No Action Alternative also may be subject to various regulatory actions and permits. Principal federal, state, and local environmental compliance requirements associated with implementation of the Proposed Action are listed in Table 3. Additional regulatory requirements are listed following the table.

Table 3. Summary of Federal Permits or Approvals.

Agency	Statute, Regulation, or Order	Purpose	Project Application
		Federal	
BUREAU OF RECLAMATION	National Environmental Policy Act	Ensures federal agencies consider environmental factors in their decision making	All action alternatives are subject to NEPA compliance because of Reclamation funding
	National Historic Preservation Act, Section 106	Protection of historic and cultural resources in coordination with the State Historic Preservation Office (SHPO)	Surface-disturbing activities, where cultural resources have been identified
	Executive Order 11990, Protection of Wetlands	Requires avoidance of adverse wetland impacts, where practicable, and mitigation, if necessary	Disturbances to wetlands
	Fish and Wildlife Coordination Act	Consideration of fish and wildlife conservation for water resource development projects	Development of mitigation measures for adverse effects to fish and wildlife
	Executive Order 12898, Environmental Justice	Requires consideration of disproportionate impacts to minority or low-income populations	Socioeconomic effects to be evaluated for all alternatives
U.S. ARMY CORPS OF ENGINEERS	Clean Water Act – Section 404 Permit to discharge dredge and fill material	Authorizes placement of fill or dredge material in waters of the U.S. including wetlands	Discharge of dredge or fill material into wetlands or other waters of the U.S.
U.S. FISH AND WILDLIFE SERVICE	Endangered Species Act	Protection of federally listed threatened or endangered species	Adverse impacts to the Project Area's federally listed species
	Migratory Bird Treaty Act	Protects migratory birds	Surface disturbance that may harm or injure migratory birds and nesting
		State of New Mexico	
NEW MEXICO STATE ENGINEERS OFFICE	Well permits	Management of ground water resources	Permits for new wells constructed, or agricultural wells converted to M&I uses, under the No Action Alternative
NEW MEXICO ENVIRONMENT DEPARTMENT	Section 401 water quality certification	Certifies that authorized Section 404 activities meet State water quality standards	Applicable for all disturbances that require Section 404 permitting

Agency	Statute, Regulation, or Order	Purpose	Project Application
	National Pollution Discharge Elimination System Permit for Stormwater	Protects water resources from discharges associated with construction activities	Applicable to all surface construction activities greater than 1 acre
	Construction Dewatering 402 Permit	Protects surface water from discharge of ground water encountered during construction	Excavations for pipelines, dam construction, or other activities that require dewatering
	Air Pollution Emission Notice	Protects air quality from construction activities including vehicle emissions and fugitive dust	Excavation, grading, and blasting for construction of dams, pipelines, roads, borrow areas, and other surface disturbances
	Open Burning Permit	Control open burning	Land-clearing activities that result in burning trees or other materials
NEW MEXICO DEPARTMENT OF GAME AND FISH	Review and comment on Proposed Action and mitigation measures	Protection of fish and wildlife resources	Changes in streamflows, inundation of streams, creation of lake habitat, impacts to terrestrial wildlife habitat from Project development
OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION, NEW MEXICO STATE HISTORIC PRESERVATION OFFICE	Coordination of Section 106 compliance with Reclamation	Determination of eligibility of cultural resources for the National Register of Historic Places (NRHP), significance of impacts, and appropriate mitigation measures	Surface-disturbing activities, where cultural resources have been identified

Additional federal statutes that guide the NEPA development process include the following:

- American Indian Religious Freedom Act of 1978 (P.L. 95-341; 42 U.S.C. 1996);
- Archaeological and Historic Preservation Act of 1974 (16 U.S.C. sections 1531-1543);
- Archaeological Resources Protection Act of 1979 (P.L. 96-95; 16 U.S.C. 470aa-470ll);
- Clean Air Act of 1970 (42 U.S.C. 7401 et seq.; 40 CFR parts 50-87);
- Farmland Protection Policy Act (P.L. 97-98; 7 U.S.C. 4201);
- Historic Sites, Buildings, and Antiquities Act of 1906 (16 U.S.C. sections 431-433);
- National Historic Preservation Act of 1966 (P.L. 95-515; P.L. 102-575; 16 U.S.C. 470);
- Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971 (36 FR 8921);

- Executive Order 11991, Protection and Enhancement of Environmental Quality, March 5, 1970 (35 FR 4247);
- Populations and Low-Income Populations, February 11, 1994 (59 FR 7629);
- Executive Order 13007, Indian Sacred Sites, May 24, 1996 (61 FR 26771); and
- Executive Order 13112, Invasive Species, February 3, 1999 (64 FR 6183).

1.6 Document Organization

This EA consists of eight chapters. Chapter 1 describes the purpose of and need for the Proposed Action, cooperating agencies, project background, related and ongoing activities, and a summary of issues. Chapter 2 describes the process used to formulate alternatives, the alternatives considered in detail, the alternatives considered but eliminated from detailed study, and the proposed action. Chapter 2 also includes a description of Ute Reservoir and a summary comparison of alternatives and impacts. Chapter 3 describes the current condition of resources within the Project Area that could be affected by the alternatives. Chapter 4 describes and analyzes the environmental impacts of the alternatives on Project Area resources. Chapter 5 describes relevant past, present, and reasonably foreseeable actions and their cumulative impacts on Project Area resources. Chapter 6 describes the scoping and public participation process that was conducted during preparation of this EA. Chapter 6 also describes coordination with federal, state, and local agencies; Native American groups; and private organizations. Chapter 7 provides a list of referenced material for the EA. Chapter 8 provides a list of individuals who prepared the EA

Chapter 2. Alternatives

Chapter 2 presents the alternatives analyzed in this EA: the No Action Alternative – in which federal funding would not be appropriated for construction of the Project and ground water use would continue as it has in the past; and the Proposed Action Alternative (Proposed Action) – in which a pipeline project including raw water intake, conveyance, and storage; water treatment; and finished water storage and conveyance would be funded and constructed. Chapter 2 also describes alternatives considered but eliminated.

2.1 No Action Alternative

NEPA requires analysis of a "No Action" alternative (Council on Environmental Quality (CEQ) Guidelines 1502.14). No Action does not necessarily require continuation of current conditions or the status quo, but rather a reasonable projection of future conditions or actions that would