Environmental Information Document

Water Distribution System Improvements
Anthony Water & Sanitation District
Anthony, Doña Ana County, New Mexico

Lead Agency:

U.S. Environmental Protection Administration (EPA)

Cooperating Agencies and Partners:

Anthony Water & Sanitation District (AWSD)
Molzen-Corbin & Associates (MCA)
Epsilon Systems Solutions, Inc. (ESS)

Prepared for:

Molzen-Corbin & Associates
1155 Commercial Drive, Suite F
Las Cruces, NM 88011

EPSILON Systems Solutions, Inc.®
3010 Mesilla Verde Terrace
Las Cruces, NM 88005
Phone: (575) 528-8197

ESS Environmental Report 2015-02
March 2016

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Submitted to:

Anthony Water & Sanitation District (AWSD)

Submitted by:

Epsilon Systems Solutions, Inc.
and
Molzen-Corbin & Associates

March 2016

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ABSTRACT

Some areas within the boundaries served by the Anthony Water and Sanitation District (AWSD) water distribution system are currently on privately-owned wells that have gone dry. The AWSD proposes to expand their distribution system to these areas west of the Rio Grande and replace existing polyethylene waterlines in areas on the east side of the river that are aging and leaking in many locations.

Molzen-Corbin & Associates (MCA) has prepared a draft Preliminary Engineering Report (PER) for the AWSD (September 2015) to evaluate alternatives to expand the water distribution system and replace aging infrastructure. The action alternatives considered in the PER vary by alignment corridors to accommodate the expansion, river crossing technologies to be implemented, and sizes of waterline to be installed.

The process used to develop alternatives to the proposed action allowed the engineers at MCA to compare and evaluate detailed project options in compliance with the National Environmental Policy Act [(NEPA), 42 U.S.C. 4321 et seq.]. Environmental impacts of alternatives other than the proposed action were evaluated in the draft PER but eliminated from further consideration due to high costs and/or other design constraints. The resources considered include: land use, air, water, biological, cultural, socioeconomics, municipal services, and public health.

Chapter 4 of this Environmental Information Document (EID) presents the reasonably foreseeable environmental consequences from the alternatives considered for the proposed action, including the No-Action Alternative, and the impacts associated with these alternatives.

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CHAPTER 1 PURPOSE AND NEED FOR PROPOSED ACTION

The Anthony Water and Sanitation District (AWSD) is a member-owned community water and wastewater system located in Anthony, New Mexico. Some areas within the boundaries served by the AWSD water distribution system are currently on privately-owned wells that have gone dry. The AWSD proposes to expand their distribution system to these areas west of the Rio Grande and replace existing polyethylene waterlines in areas on the east side of the river that are aging and leaking in many locations.

Molzen-Corbin and Associates (MCA) has prepared a draft Preliminary Engineering Report (PER) to allow decision makers to evaluate alternatives to expand the water distribution system to currently underserved areas and replace aging infrastructure.

1.1 PROJECT SETTING

Anthony is located in south central New Mexico, in the Lower Mesilla Valley along Interstate 10 (I-10) in Doña Ana County, south of the City of Las Cruces, and west of El Paso, Texas. Anthony, New Mexico is a sister city to Anthony, Texas residing on the border of New Mexico and Texas about three miles east of the Rio Grande and approximately 20 miles north of Ciudad Juarez, Mexico. The City of Anthony has areas of old dense residential neighborhoods, and a historic business district. As Anthony continues to develop it is seeing an influx of new dense residential housing and businesses.

The project area is located within Township 26 South, Range 3 East, Sections 26, 27, 35 and 36, as well as unplatted land within the Refugio Colony Land Grant, in Doña Ana County, New Mexico, as shown on the *Anthony, NM*, *La Mesa, NM*, and *La Union, NM* 7.5-minute United States Geological Survey quadrangles. Adjacent land ownership is a combination of municipal, state, and private land owner. Figure 1 provides an overview of the AWSD boundaries (Figure 1).

The waterline extension would take place west of the City of Anthony. The extension would be installed in the shoulders of the following roadways: O'Hara Road, Dairy Farm Road, Boone Circle, Westside Road, New Mexico Highway 225 (NM 225), and NM 28. The new waterline would cross the Rio Grande along the NM 225 corridor. The waterline replacements would take place in the Enchanted Hills, Mesa Addition, and Las Familias subdivision within Anthony, New Mexico.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to extend municipal water service to areas within the AWSD service area that are currently on privately-owned wells and to improve the water distribution service to users served by aging infrastructure.

The need for the proposed waterline extension is to provide water service to owners of privately-owned wells that have dried out. The Gadsden Independent School District has also requested that the AWSD expand their water service to serve both Gadsden High School and the Desert Pride Academy. The waterline replacement is needed to improve the leaking waterlines serving the Enchanted Hills, Mesa Addition, and Las Familias subdivisions.

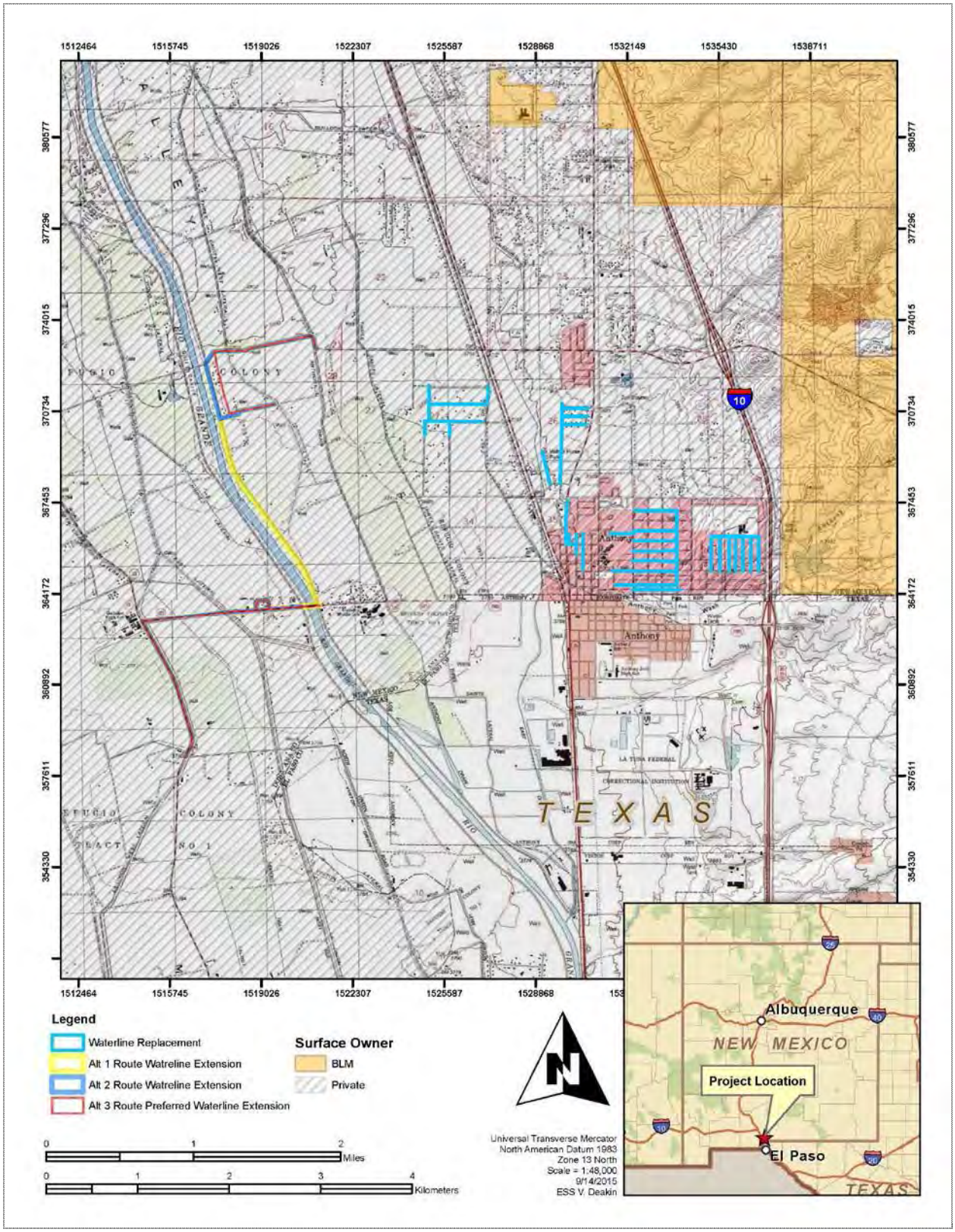

Figure 1 Area Land Ownership

1.3 SCOPE OF THE ENVIRONMENTAL INFORMATION DOCUMENT

The purpose of this environmental information document (EID) is to document and disclose the environmental impacts that would result from implementation of the proposed action. Relevant resources include water resources, cultural resources, Indian Trust Assets, natural resources, socioeconomics, and land use.

1.4 DOCUMENT ORGANIZATION

The organization of this EID is as follows:

- Chapter 1 defines the purpose and need for the proposed action.
- Chapter 2 describes the proposed action and action alternatives, the No-Action Alternative, and alternatives considered but dropped from further consideration.
- Chapter 3 describes the affected environment associated with the proposed action and its alternatives.
- Chapter 4 provides the environmental consequences associated with implementation of each action alternative or the No-Action Alternative. Cumulative impacts are also provided in this chapter.
- Chapter 5 contains all references cited in this EID.
- Chapter 6 provides the list of preparers of this document.
- Chapter 7 provides a list of acronyms and abbreviations used in this EID.
- Chapter 8 lists agencies consulted during the EID process.
- Appendix A provides documentation supporting the analysis of impacts.
- Appendix B provides a list of federal cross-cutting laws and regulations that apply to implementation of the proposed action or alternatives.
- Appendix C provides copies of interagency consultations.
- Appendix D summarizes the public involvement associated with this project.

1.5 REGULATORY DRIVERS AND GUIDANCE

1.5.1 The National Environmental Policy Act

The National Environmental Policy Act [(NEPA), 42 U.S.C. 4321 et seq.] was signed into law on January 1, 1970. NEPA establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the federal agencies. NEPA also establishes the Council on Environmental Quality (CEQ).

In 1978, CEQ promulgated regulations [40 CFR Parts 1500-1508] implementing NEPA which are binding on all federal agencies. The regulations address the procedural provisions of NEPA and the administration of the NEPA process, including preparation of EIS documents. To date, the only change in the NEPA regulations occurred on May 27, 1986, when CEQ amended Section 1502.22 of its regulations to clarify how agencies are to carry out their environmental evaluations in situations where information is incomplete or unavailable.

The NEPA process consists of an evaluation of the environmental effects of a federal undertaking including its alternatives. There are three levels of analysis: categorical exclusion determination;

preparation of an environmental assessment (EA) and finding of no significant impact (FONSI); and preparation of an environmental impact statement (EIS).

In support of the NEPA process, an environmental information document (EID) may be written to support federal grant applications or international projects between the U.S. and Mexico or Canada. As defined by 40 CFR Section 6.102(b)(4), an EID is a written analysis prepared by the applicant that provides sufficient information for the Responsible Official to undertake an environmental review and prepare either an EA and FONSI or an EIS and Record of Decision (ROD) for the proposed action. An EID includes basic project information, including a description of the proposed project, and evaluates the environmental impacts of the project and alternatives to the proposed project.

1.5.2 The Clean Air Act

The Clean Air Act [42 U.S.C. §7401 et. seq. (CAA)] is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The standards are expressed in micrograms per cubic meter (mg/m^3) or parts per million (ppm), over a specified time period. The six categories of pollutants include sulfur dioxide, nitrogen dioxide, ozone, carbon monoxide, lead, and particulate matter, including less than ten microns and less than 2.5 microns in diameter (PM_{10} and $PM_{2.5}$).

One of the goals of the CAA was to set and achieve NAAQS in every state by 1975 in order to address the public health and welfare risks posed by certain widespread air pollutants. The setting of these pollutant standards was coupled with directing the states to develop state implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards. New Mexico Environment Department (NMED) Air Quality Bureau (AQB) is in place to protect the inhabitants and natural beauty of New Mexico by preventing the deterioration of air quality. The AQB ensures that all NAAQS are met through strategic planning, construction and operating permits throughout New Mexico.

1.5.3 The Clean Water Act

The Clean Water Act [33 U.S.C. §1251 et. seq. (CWA)] establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972.

Section 402 of the CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

NPDES permits must incorporate the applicable effluent controls and normally require a storm water pollution prevention plan (SWPPP) for any construction activity disturbing more than one acre of land,

and best management practices (BMP) for sediment control. In the State of New Mexico, compliance with Section 402 includes coordination with the NMED in the form of a Water Quality Certification for the NPDES permit. EPA requires NPDES Construction General Permit (CGP) coverage for storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of development. The total area of disturbed soil for the roadway and the area where the material removed is placed are included in total disturbed soil footprint.

1.5.4 Federal Cross-Cutting Regulations

Various federal cross-cutting laws and Executive Orders (EO) must be considered through the NEPA process. These regulations involve a wide range of resource areas and measures to protect these resources. Appendix B of this EID provides a summary of these cross-cutting regulations.

CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section presents a description of the proposed action. The section also summarizes the process used to develop alternatives to the proposed action and describes these alternatives in detail.

The AWSD proposes to install improvements to their current water distribution system. The improvements include two elements:

1. Waterline extension to areas currently not served. These areas include locations where property owners are on privately owned water wells which have gone dry due to the drought conditions. This expansion would also include an infrastructure crossing of the Rio Grande with the long term goal of interconnecting the La Union system to allow for redundancy if an outage occurs in either system; and
2. Replacement of existing polyethylene waterlines located in the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions in Anthony, New Mexico. These older areas of Anthony have many leaks and the aging infrastructure needs to be replaced to continue to provide reliable service.

2.1 ALTERNATIVES CONSIDERED

For the purposes of this EID, alternatives considered include the No-Action Alternative and action alternatives.

2.1.1 Waterline Extension

The proposed waterline extension would extend west across the Rio Grande to accept more people into the service area. These areas include locations where property owners are on privately owned water wells which have gone dry due to the drought conditions; this also includes the Gadsden Independent School District. This expansion would continue along NM 225/Washington Street and provide water service to residents and to Gadsden High School before continuing south along NM 28 to provide service to Desert Pride Academy. This expansion would also help with the long term goal of interconnecting with the La Union System to allow for redundancy if an outage occurs in either system.

To accommodate the waterline expansion, the AWSD is considering three waterline alternative alignments for the expansion as well as three alternative river crossing methods.

2.1.1.1 Waterline Extension Alternative 1

This alternative would be comprised of the following:

- A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend to a Rio Grande river levee, where it would turn south joining a waterline at NM 225;
- An extension of the Webb Road line, joining the water loop at the Rio Grande river levee;
- An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle; and

- A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM 28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

2.1.1.2 Waterline Extension Alternative 2

This alternative would be comprised of the following:

- A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend to a Rio Grande river levee, where it would turn south to Webb Road. At Webb Road, this loop would extend eastward, connecting to an existing 10-inch waterline;
- An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle; and
- A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM 28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

2.1.1.3 Waterline Extension Alternative 3

This alternative would be comprised of the following:

- A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend westward to the eastern side of the EBID Three Saints West Lateral, where it would turn south to Webb Road. At Webb Road, this loop would extend eastward, connecting to an existing 10-inch waterline;
- An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle; and
- A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM 28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

Figure 2 provides an overview of the waterline extension alternatives.

2.1.2 Rio Grande Crossing Alternatives

All three alignment alternatives include extension of the existing waterlines westward crossing the Rio Grande. This section describes the three crossing technology alternatives that were initially considered in this EID.

2.1.2.1 Horizontal directional drilling

Horizontal directional drilling (HDD) would allow trenchless installation of the proposed waterline extension under the Rio Grande without disrupting the river flow. With this method, the drilling contractor is capable of drilling under the river along a planned path, connecting the sites on the east and west sides of the river outside of the ordinary high water mark.

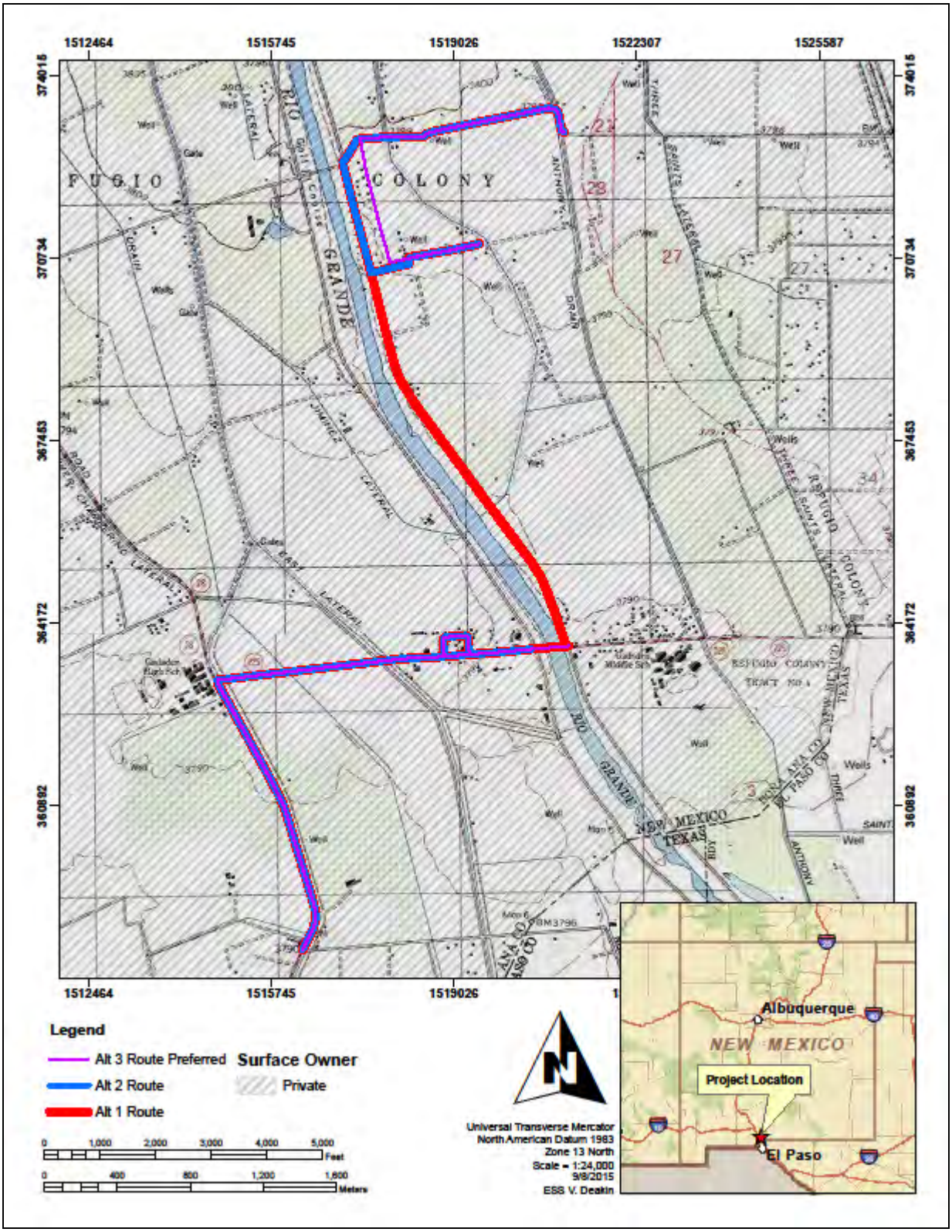

Figure 2 Waterline Extension Alternatives

2.1.2.2 Bridge Crossing

Bridge crossing would consist of the waterline crossing over the Rio Grande with the aid of either hangers or a cantilever support along the side or beneath the bridge. Most likely the waterline would need to be ductile iron or of similar material with a stronger collapse pressure when compared to C900 PVC pipe or C900 PVC pipe encased in steel. The encasement would be approximately six to 10 inches larger in diameter than the carrier pipe. Permitting for construction utilizing this method would consist of New Mexico Department of Transportation (NMDOT) as well as International Boundary & Water Commission (IBWC) approval.

2.1.2.3 Pipe Trenching

Pipe trenching would consist of laying the new pipe in an open trench across the Rio Grande. Ideally, this method could be used in the winter when flows within the river are low to nonexistent. Permitting for this type of river crossing would be limited to the US Army Corps of Engineers, IBWC as well as the EBID.

As described in 2.2, bridge crossing and pipe trenching were eliminated from further consideration due to physical and environmental constraints associated with these crossing alternatives.

2.1.3 Waterline Replacement Alternatives

Currently, the Enchanted Hills, Mesa Addition, and Las Familias subdivisions are experiencing many leaks and unreliable water service due to aging water infrastructure. The existing polyethylene waterlines are in need of replacement to provide reliable water service. Table 1 provides the existing lengths and sizes of waterlines within the Enchanted Hills, Mesa Addition, and Las Familias subdivisions.

Table 1 Existing Waterlines to be Replaced

Street	Waterline Diameter (in)	Length (ft)
Timbers	4	1,250
Davis	3	1,250
Gorman (south)	6	500
Ramsey	6	1,250
Archer (south)	2	500
San Andres	8	1,250
Donaldson	6	1,850
Donaldson	2	525
Donaldson (west)	4	350
Church	6	950
Church (east)	8	750
Alleyway Distribution Lines Between Through Streets		
Davis and Gorman	2	1,250
Gorman and Ramsey	2	650
Ramsey and Archer	2	750
Archer and Marquez	2	1,250
Marquez and San Andres	2	1,050

There are four action alternatives being considered for the waterline replacement. The alternatives vary in terms of pipe sizing. The waterline extension and waterline replacement components of the proposed action would be gravity-fed with no requirements for additional support from lift stations or booster pump

stations. PVC pipe is proposed to be the pipe material for the waterline replacement. PVC is sustainable with a long design life.

2.1.3.1 Waterline Replacement Alternative 1

This alternative includes the replacement of all waterlines within the Enchanted Hills, Mesa Addition, and Las Familias subdivisions with new 4-inch C-900 PVC waterline. This would be an increase in pipe diameter for all of the 2 and 3-inch waterlines, but would be a decrease in capacity for any of the 6 and 8-inch waterlines.

2.1.3.2 Waterline Replacement Alternative 2

This alternative includes the replacement of all waterlines within the Enchanted Hills, Mesa Addition, and Las Familias subdivisions with new 6-inch C-900 PVC waterline. This would be an upgrade to all waterlines by adding capacity except for 6-inch waterlines where the capacity would not change, but quality would. The 8-inch waterline along San Andres Street would be decreased in size to a 6-inch waterline.

2.1.3.3 Waterline Replacement Alternative 3

This alternative includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias subdivisions with existing 3 or 4-inch waterlines upgraded to 6-inch lines. The existing 6 and 8-inch waterline would be replaced in kind. C-900 waterline would be used for each replacement.

2.1.3.4 Waterline Replacement Alternative 4

This alternative serves as the preferred alternative and includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias subdivisions without any decrease in pipe size. Six-inch waterline would be utilized for all areas with 6-inch or smaller diameter waterlines. The waterline along San Andres Street would be replaced with an 8-inch waterline in order to keep capacity the same. C-900 waterline would be used for each replacement.

2.1.3.5 Waterline Replacement Alternative 5

Alternative 5 provides the residential neighborhood with an increase in capacity within the system, capable of sustaining fire flow. Approximately 5,000 feet of 2-inch waterline, 1,250 feet of 3-inch waterline, and 1,600 feet of 4-inch waterline would be replaced with 6-inch waterline. Existing 6-inch and 8-inch waterline within the residential area would be replaced with new waterline of the same diameter.

Each waterline replacement would utilize C-900 PVC pipe which provides for less head losses and a chemically inert material capable of lasting beyond its 20 year design life.

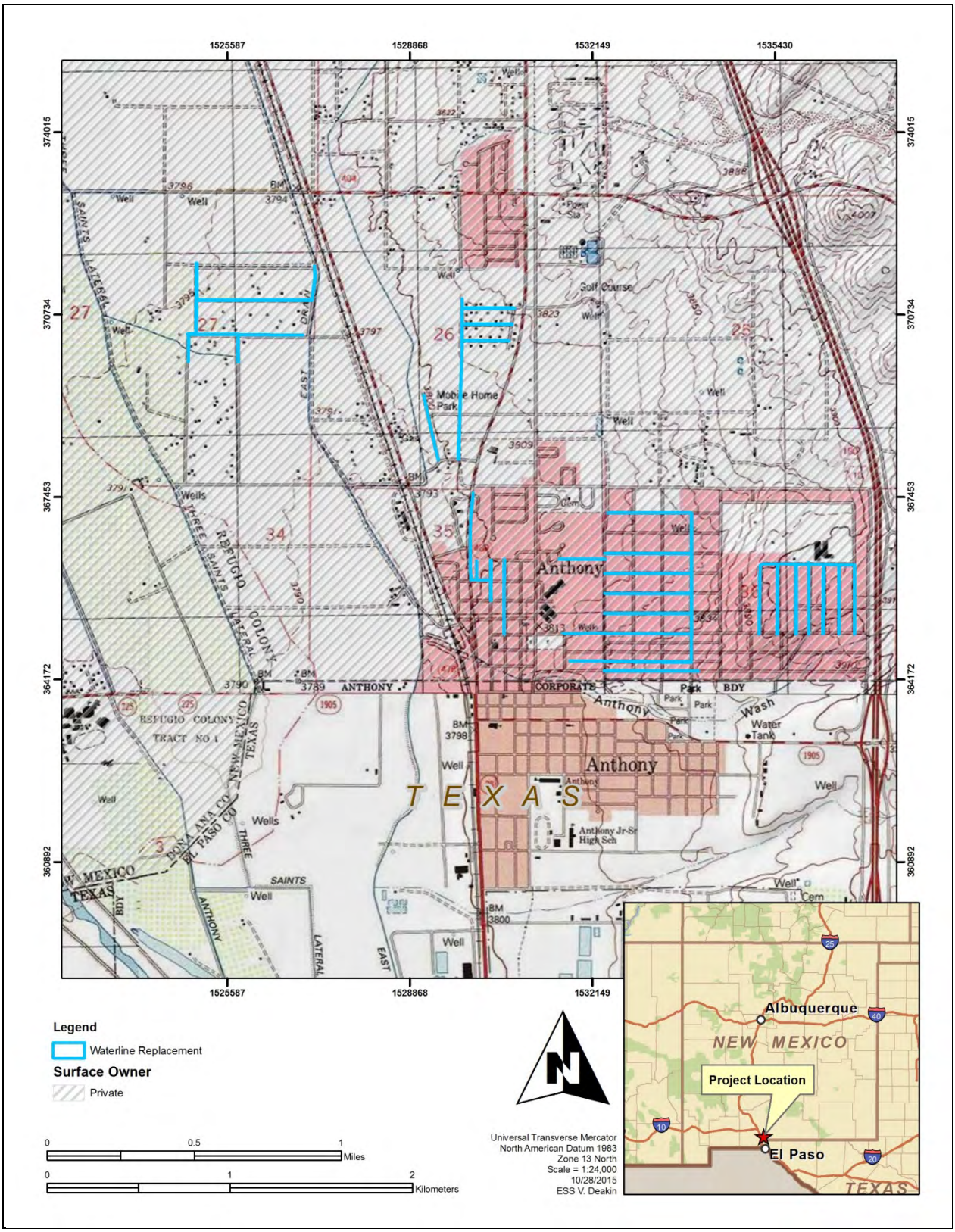

Figure 3 Waterline Replacement Locations

2.1.4 Comparison of Alternatives

2.1.4.1 Waterline Extension Alternatives Comparison

MCA used four criteria for the selection of the preferred waterline extension alternatives: lifecycle costs, required acquisition, permitting requirements, and number of customers served. A summary of the alternative selection process is provided below.

As reflected by the draft PER, the alternative with the longest extension corridor would have the highest costs of installation and lifelong maintenance. Alternative 1 is the longest and most expensive of the three extension corridor alternatives, Alternative 2 would be the second most expensive, and Alternative 3 would be the least expensive. Of the crossing technologies, HDD would be the most expensive followed by trenching across the Rio Grande. Bridge crossing would be the least expensive river crossing technology.

The majority of the waterline extension would be conducted within land owned by the City of Anthony. However, for the waterline corridors along the Rio Grande levee, right-of-way agreements would need to be obtained from the IBWC. Waterline extension Alignment 1 would have the longest right-of-way acquisition from IBWC, Alternative 2 would be the second longest right-of-way acquisition, and Alignment 3 would have the shortest right-of-way acquisition requirement.

The IWBC has permitting authority for the waterline extension adjacent or within an existing levee right-of-way. Permitting associated with the Rio Grande crossing would be the purview of the IBWC, New Mexico Department of Transportation (NMDOT), both dependent upon the crossing technology employed. IBWC permitting requirements for installation of waterlines within the levee right-of-way are very stringent and can lead to higher costs to the AWSD over the lifecycle of the water distribution system. The IBWC also has regulatory oversight of trenching or directional drilling within the vicinity of the Rio Grande. The NMDOT would hold permitting oversight of bridge crossing of the Rio Grande. According to the PER analysis, Waterline Extension Alternative 1 would be the preferred alternative with regards to permitting requirements within the IBWC levee right-of-way. MCA determined that HDD technology would be the preferred river crossing technology with regards to permitting requirements (MCA 2015).

Water Extension Alternative 1 was found to serve six more properties than Alternatives 2 or 3 (MCA 2015).

2.1.4.2 Waterline Replacement Alternatives Comparison

MCA used three criteria for the selection of the preferred waterline extension alternatives: cost, capacity, design life, and fire flow. A summary of the alternative selection process is provided below.

Waterline Replacement Alternative 4 would have the highest associated costs, due to the use of larger diameter pipe over greater length as compared to the other alternatives. Alternative 1 would have the lowest installation costs.

Alternative 4 would have the highest capacity, followed by Alternative 2. Alternatives 1 and 3 would have the lowest water delivery capacity.

The minimum design life of the replacement waterlines is 10 years. Alternatives 2 and 4 have the highest capacity and would be able to meet higher demands as population in the area increases. Therefore, these alternatives were rated higher than the other two alternatives.

In the draft PER, MCA determined that approximately 1,100 gallons per minute was needed for adequate fire flow. The alternatives with higher diameter pipe have higher delivery capacity to meet this requirement. As such, Alternative 4 receives the highest selection rating, followed by Alternative 2. Alternatives 1 and 3 would have the lowest water delivery capacity. (MCA 2015)

2.1.5 Identification of the Preferred Alternative (Proposed Action)

The proposed action includes the following:

- Waterline Extension Alternative 3;
- HDD Crossing of the Rio Grande; and
- Waterline Replacement Alternative 4.

Waterline Extension Alternative 3 would allow for more properties near the river to be put on the AWSD water system as their water wells have gone dry. The extension would form a loop between O'Hara and Webb Roads utilizing existing utility easements for a portion of the extension. Utility easements would need to be obtained from eight property owners. The extension west along Washington Street across the river would provide service to both Gadsden High School and Desert Pride Academy. The proposed extension would involve 21,125 linear feet (LF) of waterline installation, and the replacement would total approximately 36,475 LF. HDD crossing of the Rio Grande was selected as the preferred alternative for the waterline extension, as this would minimize impacts to the river habitat and would have fewer right-of-way and permitting requirements.

2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

This section provides the description of alternatives considered but determined not to be carried forward. Rationale for no further analysis is also provided.

2.2.1 Bridge Crossing over the Rio Grande

This alternative was eliminated from further consideration given the current physical limitations of the NM 225 bridge crossing the Rio Grande. At this time, many utility lines (e.g., water, electricity, and communications) are attached to the underside of the bridge. There is limited space for the addition of the encasement needed to carry the proposed waterline extension.

2.2.2 Pipe Trenching

This alternative was eliminated from further consideration due to the potential impacts to the biological and cultural resources environment of the Rio Grande area. This alternative would require trenching across the river, which could potentially affect sensitive resources. Furthermore, any needed repairs to the waterline crossing would be restricted the Rio Grande low-flow season.

CHAPTER 3 AFFECTED ENVIRONMENT

This chapter includes a description of the existing environmental conditions within the area potentially affected by the proposed action. Resources areas considered in this chapter include: land use, air quality, water resources, biological resources, cultural resources, socioeconomics, municipal services, and public health.

3.1 LAND USE

The affected environment evaluated for potential impacts to land use includes the entire action planning area. The action planning area consists of the AWSD limits and immediate surroundings. Land use in the AWSD planning area varies greatly within the limits of the district, including areas of older residential neighborhoods, undeveloped desert scrub, a golf course, and the old Anthony business district. Proposed action construction sites exist within residential and agricultural areas. None of the agricultural areas are considered Prime or Unique Farmland, but these lands are considered Farmland of Statewide Importance and are protected pursuant to the Farmland Protection Policy Act. Anthony has grown and is currently seeing an influx of new residential housing. The business district is also expanding as the local population increases.

The incorporated limit of Anthony covers approximately 3.95 square miles, with a resident population of about 9,320 citizens. Land use is predominantly residential, with some commercial areas and occasional vacant lots. Anthony has a long history of agriculture and has an abundance of dairies and farms. This Chihuahuan Desert community receives sparse rainfall annually; however, the Rio Grande passes through the valley nearby providing a shallow water table that the community utilizes for a variety of purposes. The Rio Grande is an integral part of farmers' livelihood up and down the river valley in south central New Mexico.

3.2 AIR QUALITY

3.2.1 Definition of Resource

Estimated emissions from a proposed federal action are typically compared with the relevant national and state standards to assess the potential for increases in pollutant concentrations. Impacts would occur if the action alternatives would directly or indirectly produce emissions that would be the primary cause of, or would significantly contribute to, a violation of state or federal ambient air quality standards.

Air quality in a given location is defined by pollutant concentrations in the atmosphere and is generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). One aspect of significance is a pollutant's concentration in comparison to a national and/or state ambient air quality standard. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare with a reasonable margin of safety. The national standards, established by the EPA, are termed the National Ambient Air Quality Standards (NAAQS). In addition to the NAAQS, the EPA allows the individual states to establish ambient air quality standards that are more stringent than the NAAQS. NMED has adopted the EPA's NAAQS, without any exceptions. Table 2 provides a summary of the NAAQS.

Areas that violate ambient air quality standards are designated as nonattainment areas. Nonattainment designations for ozone (O_3) and carbon monoxide (CO) include subcategories indicating the severity of the air quality problem (e.g., the classifications range from *basic* to *severe* for O_3). Areas that comply with federal air quality standards are designated as attainment areas. Areas that have been re-designated from nonattainment to attainment are designated as maintenance areas. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified and are considered to be in attainment for regulatory purposes.

Table 2 National Ambient Air Quality Standards

POLLUTANT	AVERAGING TIME	NAAQS[1]	
		Primary	Secondary
Ozone (O_3)	8 hour	0.075 ppm (147 µg/m^3)	Same as primary standard
Carbon Monoxide (CO)	8 hour	9 ppm (10 mg/m^3)	†
	1 hour	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual arithmetic mean	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.100 ppm (188 µg/m^3)	†
Sulfur Dioxide (SO_2)	3 hour	†	0.5 ppm (1,300 µg/m^3)
	1 hour	0.075 ppm (196 µg/m^3)	†
PM_{10}	24 hour	150 µg/m^3	Same as primary standard
$PM_{2.5}$	Annual arithmetic mean	12 µg/m^3	15 µg/m^3
	24 hour	35 µg/m^3	Same as primary standard
Lead (Pb)	30 day average	†	†
	Calendar quarter	0.15 µg/m^3	Same as primary standard

Notes: [1] NAAQS are not to be exceeded more than once per year except for annual standards.
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligram per cubic meter;
† = no standard established

Sources: EPA 2015a

3.2.2 Existing Conditions

The Anthony, New Mexico area is in moderate nonattainment for PM_{10} (EPA 2015b). In most instances, states with nonattainment areas are required to develop and implement plans to achieve attainment of the NAAQS. However, the desert portion of the area affecting Anthony is in an undisturbed state, and PM_{10} emissions from the desert are considered to be of non-anthropogenic origin. The surrounding rangelands are managed for livestock grazing as required by federal regulation, a method which decreases soil erosion and PM_{10} production. However, the soil compositions in Doña Ana County are inherently and naturally susceptible to wind erosion and PM_{10} emissions from the rangelands cannot be fully controlled. The EPA considers PM_{10} emissions from the managed rangelands to also be of non-anthropogenic origin. The EPA concluded that emissions from the desert and managed rangelands are the overwhelming source of PM_{10} in Anthony and that anthropogenic sources are insignificant emission sources and do not require control measures (EPA 2003).

Anthony is not required to control most of its PM_{10} sources because they are either insignificant or non-anthropogenic and not feasibly controllable. However, the state and county have adopted regulations and

ordinances to decrease PM_{10} emissions from the area sources in the county. These control measures meet the CAA "moderate" area requirements for area sources of PM_{10} emissions. Further, the State submitted an enforceable commitment that it remains committed to the dust control measures implemented by the county, the moderate area control strategies as agreed to in the SIP, and to the established monitoring schedule (EPA 2003).

3.3 WASTE MANAGEMENT

During the construction activities, waste generation would be minimal including predominantly rags used during the pipe installation and excavation and the pipe removed during the waterline replacement. Given the age of the current water delivery system, many of the pipes likely have asbestos insulation. Asbestos is a material with high fiber strength and heat resistance that was used in building construction materials as insulation and as a fire retardant. Exposure to asbestos increases the risk of developing lung disease, including lung cancer, mesothelioma, and asbestosis (a serious progressive, long-term non-cancer disease of the lungs). As such, use of asbestos in building materials has been outlawed with the full prohibition reached by 2000.

Air toxics regulations under the CAA specify work practices for asbestos to be followed during demolitions and renovations of all facilities, including, but not limited to, structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). The regulations require a thorough inspection where the demolition or renovation operation will occur. The regulations require the owner or the operator of the renovation or demolition operation to notify the appropriate delegated entity (often a state agency) before any demolition, or before any renovations of buildings that contain a certain threshold amount of regulated asbestos-containing material. The rule requires work practice standards that control asbestos emissions. Work practices often involve removing all asbestos-containing materials (ACM), adequately wetting all regulated ACM, sealing the material in leak tight containers and disposing of the ACM waste expediently as practicable, as the regulation explains in greater detail.

These work practice standards are designed to minimize the release of asbestos fibers during construction or renovation, waste packaging, transportation and disposal. Performing the work in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos helps to ensure that areas in use during the renovation are not contaminated and that the area under renovation, when it is complete, is free of contamination.

The asbestos NESHAP applies to projects with total amount of ACM to be removed greater or equal to 260 LF, 160 square feet, or 325 cubic feet. ACM is generally defined as any material containing more than one percent asbestos. The asbestos NESHAP requires specific work practices to control the release of asbestos fibers. To help ensure that the work practice standards of the asbestos NESHAP are followed during a demolition or renovation operation, the asbestos NESHAP requires at least one onsite representative trained in the regulatory provisions and the means of compliance. This trained individual needs to receive refresher training every two years, including: applicability of the rule; notifications; material identification; control procedures for removal; adequate wetting; local exhaust ventilation; negative pressure enclosures; glove-bag procedures; High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and recordkeeping; and, asbestos hazards and worker protection.

The rule generally requires that ACM waste be sealed in a leak-tight container while wet, labeled, and disposed of properly in a landfill qualified to receive asbestos waste. Landfills have special requirements for handling and securing the asbestos containing waste to prevent releases of asbestos into the air. Transportation vehicles that move the waste from the point of generation to the asbestos landfill have special labeling requirements and waste shipment recordkeeping requirements.

3.4 WATER RESOURCES

This section provides a summary of the major aquifers, surface water resources, and groundwater resources in the vicinity of the AWSD.

3.4.1 Surface Water

Surface water includes any permanent or temporary body of water or drainage that collects and holds or transports water. Surface water sources can originate from ground water, such as springs, aquifers, and seeps, or can be generated after a rain or storm water event typically in the form of runoff. Intermittent and ephemeral arroyos in particular contain water only for limited periods of time following storms. Perennial surface-water bodies contain water year-round.

The Rio Grande is the primary river of south-central New Mexico, south Texas, and northern Mexico region. The project would involve installation of waterlines adjacent to levees bordering the river and would involve HDD installation of waterlines under the river. The waterline replacement would be conducted within three miles of the river. There are no other natural perennial or ephemeral bodies of water in the immediate vicinity of the project area.

There are six drainage ditches in the vicinity of the project area: the Three Saints Lateral, Anthony Drain, East Lateral, Jimenez Lateral, Nemexas Drain, and East Drain. The proposed waterline extension would cross the Anthony Drain and the East Lateral and would parallel a stretch of the Nemexas Drain. The proposed waterline replacement would parallel a stretch of the East Drain.

Review of FEMA Flood Insurance Rate Maps (FIRM Nos. 35013C0925E and 35013C0800E) indicated that areas near the Rio Grande are designated as being within Special Flood Hazard Areas including 100-year flood zones without Base Flood Elevation (Zone A). The majority of the project area is designated either as areas within a 500-year flood zone (Zone X) or as areas outside a 500-year flood zone (Zone X unshaded), which are not considered to be Special Flood Hazard Areas.

3.4.2 Groundwater

South-central New Mexico is underlain by portions of four groundwater basins: Jornada del Muerto (Jornada), Mesilla, Hueco Bolson, and Rincon Valley. The shapes and sizes of these basins are controlled by the underlying geologic structure, which consists of a series of faulted blocks created by north-south trending normal faults as part of the Rio Grande Rift. The main groundwater bearing formations in these areas consist of thick sequences of basin-fill deposits of the Santa Fe Group and deposits of the current Rio Grande (LRGWUO 2004).

The area surrounding Anthony is underlain by the Mesilla Basin and the Hueco Bolson. The Mesilla Basin is bounded to the southwest by the East and West Potrillo Mountains, to the northwest by the Robledo Mountains, to the northeast and east by the Doña Ana and Organ Mountains, and to the southeast

by the Franklin Mountains and the Hueco Bolson. The Rio Grande flows through the Mesilla Basin, forming a floodplain 60 miles long and several hundred feet to 5 miles wide (LRGWUO 2004).

The Hueco Bolson covers about 255 square miles and is primarily in the far southeastern corner of Doña Ana County, and extends a short distance eastward into Otero County. Only about 2 to 5 percent of the Hueco Bolson lies within New Mexico; the Hueco Bolson extends many miles into Texas and Mexico where it forms the El Paso Valley. Like the other basins in the Planning Region, the Hueco Bolson is a graben that was created by the Rio Grande rifting process. The basin consists of a down-dropped fault block nestled between a set of north-south trending normal faults. The Hueco Bolson is bounded to the west by the Franklin Mountains, to the north partly by the Organ Mountains, and to the east by the Jarilla and Hueco Mountains (LRGWUO 2004).

Groundwater supplies in the Jornada and Hueco aquifers are essentially a fixed amount; annual recharge is very low and any withdrawal above this recharge amount would basically mine the groundwater supply. The Rincon Valley and Mesilla groundwater basins are interconnected to the Rio Grande, which has historically been able to recharge these aquifers during years with above-normal flows. However, as groundwater development expands, increasing amounts of water from the Rio Grande will enter these aquifers as recharge, effectively robbing the river, and those with surface water rights, of water. Extensive withdrawals by Texas and Mexico from the Hueco aquifer have mined the aquifer significantly. The long-term viability of the Hueco aquifer is poor; declining water levels and declining water quality are already presenting problems (City of Las Cruces 2011).

In the Lower Rio Grande, groundwater pumping for irrigation has been increasing steadily since the 1950s. Demand from municipal and industrial users has also been increasing since this time, with greater increases over the last two to three decades. Groundwater pumping dries up drains because it reduces groundwater levels below the level at which the drains can intercept the groundwater; drain flows are part of the Rio Grande Project Water equation and have historically added about 20 percent to Project Water resources. In good years, drain flows recycle water, returning excess irrigation water to the Rio Grande. In dry years, drains dry up and surface water is lost to the groundwater system. When drains are dry, the Project Water supply is reduced (City of Las Cruces 2011).

In recognition of the threats to the supply/inventory of groundwater in the region and the anticipated increase in demand for drinking water, the New Mexico-Texas Water Commission has proposed the El Paso-Las Cruces Regional Sustainable Water Project. The purpose of the project is to secure future drinking water supplies from surface water sources for the El Paso-Las Cruces region and, thereby, protecting and maintaining the sustainability of the Mesilla Basin and extending the longevity of the Hueco Bolson (City of Las Cruces 2011).

3.5 BIOLOGICAL RESOURCES

3.5.1 Vegetative Communities

According to information obtained from The Southwest Regional Gap Analysis Project (SWReGAP), which provides regional assessments of the conservation status of native vertebrate species and natural land cover types in the southwestern U.S., the vegetative habitat in the action area is typically considered non-developed Chihuahuan Desert. Because of residential, commercial, and agricultural development in the community of Anthony, the proposed action area now falls within the N21 (Developed Open Space-

Low Intensity), N22 (Developed Medium-High Intensity), and N80 (Agriculture) categories as defined by the SWReGAP Final Report (USGS 2007). Descriptions of these two land cover types are provided in the following paragraphs.

- N21 Developed, Low Intensity: includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.
- N22 Developed, Medium Intensity: includes areas with a mixture of constructed materials and vegetation. Impervious surface accounts for 50-79 percent of the total cover. These areas most commonly include single-family housing units.
- N22 Developed, High Intensity: Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to 100 percent of the total cover.
- N80 Agriculture: includes both Pasture/Hay (N81): areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle, where pasture/hay accounts for greater than 20 percent of total vegetation, and Cultivated Crops (N82): areas used for the production of annual crops, such as, corn, soybeans, vegetables, tobacco, and cotton, and also woody crops such as orchards and vineyards, where crop vegetation accounts for more than 20 percent of the total vegetation. N82 also includes lands being actively tilled.

Although most of the land adjacent to the proposed action is developed, there are areas of land that consist of Chihuahuan sandy plains semi-desert grassland, mixed desert, thorn scrub and Chihuahuan mixed salt desert scrub. During the field survey, vegetation observed within the action area limits consisted of creosote bush (*Larrea tridentata*), honey mesquite (*Prosopis glandulosa*), tree cholla (*Cylindropuntia imbricata*) and fourwing saltbush (*Atriplex canescens*). Two state listed Class C noxious weeds (Siberian elm [*Ulmus pumila*] and saltcedar [*Tamarix* spp.]) and one Class B noxious weed (tree of heaven [*Ailanthus altissima*]) were documented in the project area.

3.5.2 Wildlife Communities

A variety of species are known to occur within the semi-desert grassland biotic community that is typically found in the proposed action area. According to Brown (1994), some of these species may include: black-tailed jackrabbit (*Lepus californicus*), spotted ground squirrel (*Spermophilus spilosoma*), kangaroo rats (*Dipodomys* spp.), white-footed mouse (*Peromyscus leucopus*), southern plains woodrat (*Neotoma micropus*), coyote (*Canis latrans*), burrowing owl (*Athene cunicularia*), scaled quail (*Callipepla squamata*), prairie falcon (*Falco mexicanus*), eastern meadowlark (*Sturnell magna*), loggerhead shrike (*Lanius ludovicianus*), barn swallow (*Hirundo rustica*), western green toad (*Bufo debilis insidior*), desert grassland whiptail (*Cnemidophorus uniparens*), western hooknose snake (*Ficimia cana*), southwestern earless lizard (*Holbrookia texana scitula*), and desert box turtle (*Terrapene ornata luteola*).

Three agencies have primary responsibility for protecting and conserving plant and animal species within the proposed project area. The United States Fish and Wildlife Services (USFWS), under authority of the Endangered Species Act of 1973 (16 U.S.C. 1531), as amended, has the responsibility for federally listed species. The New Mexico Department of Game and Fish (NMDGF) has the responsibility for state-listed

wildlife species. The New Mexico Rare Plants Technical Council (NMRPTC) has responsibility for state-listed endangered plant species. Each agency maintains a continually updated list of species that are classified, or are candidates for classification, as protected based on their present status and potential threats to future survival and recruitment into viable breeding populations. These types of status rankings represent an expression of threat level to a given species' survival as a whole and/or within local or discrete populations.

USFWS lists one endangered wildlife species and one threatened wildlife species occurring in Doña Ana County. NMDGF lists seven endangered species and 15 threatened species occurring in Doña Ana County. None of the listed animal species are expected within the project area due to existing development, lack of habitat, and human activities. Correspondence with NMDGF indicates that the agency "does not anticipate significant impacts to wildlife or sensitive habitats" within the project area. Special status species that that potentially occur in Doña Ana County and may occur near the proposed project area are listed in "New Mexico Wildlife of Concern." Correspondence with the USFWS, NMDGF, and NMRPTC is provided in Appendix B. The New Mexico Rare Plant List identifies 21 plant species that potentially occur in Doña Ana County and may occur near the project area. The USFWS lists one endangered plant species occurring in Doña Ana County. No special status plant and animal species listed with these agencies were identified by Epsilon Systems during environmental investigations performed for this EID, and no suitable habitat for state- or federal-listed plant and wildlife species were found during the surveys (Grosso and Beacham 2015).

3.6 CULTURAL RESOURCES

Potential impacts on cultural resources are assessed through the Section 106 process of the National Historic Preservation Act of 1966. Cultural resources are evaluated in consultation with the State Historic Preservation Officer (SHPO) at the New Mexico Historic Preservation Division. The consultation process identifies historic properties that could be potentially affected by the project, and determines approaches to avoid, minimize, or mitigate any adverse effects.

Potential impacts on cultural resources are assessed through the Section 106 process of the National Historic Preservation Act of 1966. Cultural resources are evaluated in consultation with the State Historic Preservation Officer (SHPO) at the New Mexico Historic Preservation Division. The consultation process identifies historic properties that could be potentially affected by the project, and determines approaches to avoid, minimize, or mitigate any adverse effects.

Inventories of previously-recorded cultural properties located within the area of potential effects (APE) were reviewed prior to the field survey. Database searches were conducted for files of the Archeological Records Management Section (ARMS) of the Museum of New Mexico Laboratory of Anthropology, the National Register of Historic Places (NRHP), and the New Mexico State Register of Cultural Properties (NMSRCP).

An intensive pedestrian survey and inventory effort of the project APE was conducted by Epsilon Systems staff between September 29 and October 2, 2015. The APE identified for the survey covered approximately 98 acres, inclusive of the recommended alternatives for the waterline replacement and extension alignments in addition to a survey buffer (see Figures 4 and 5).

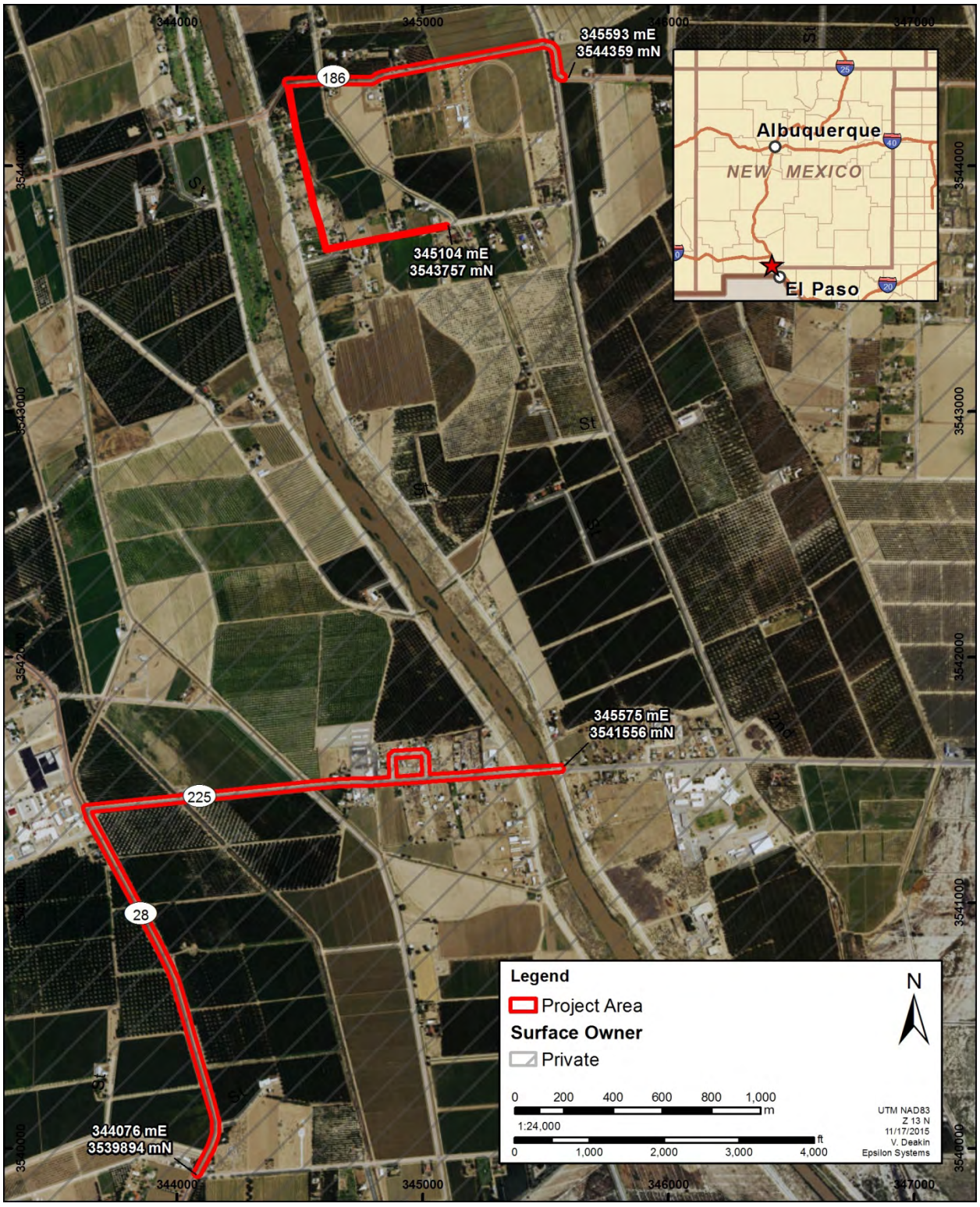

Figure 4 Project Area of Potential Effect

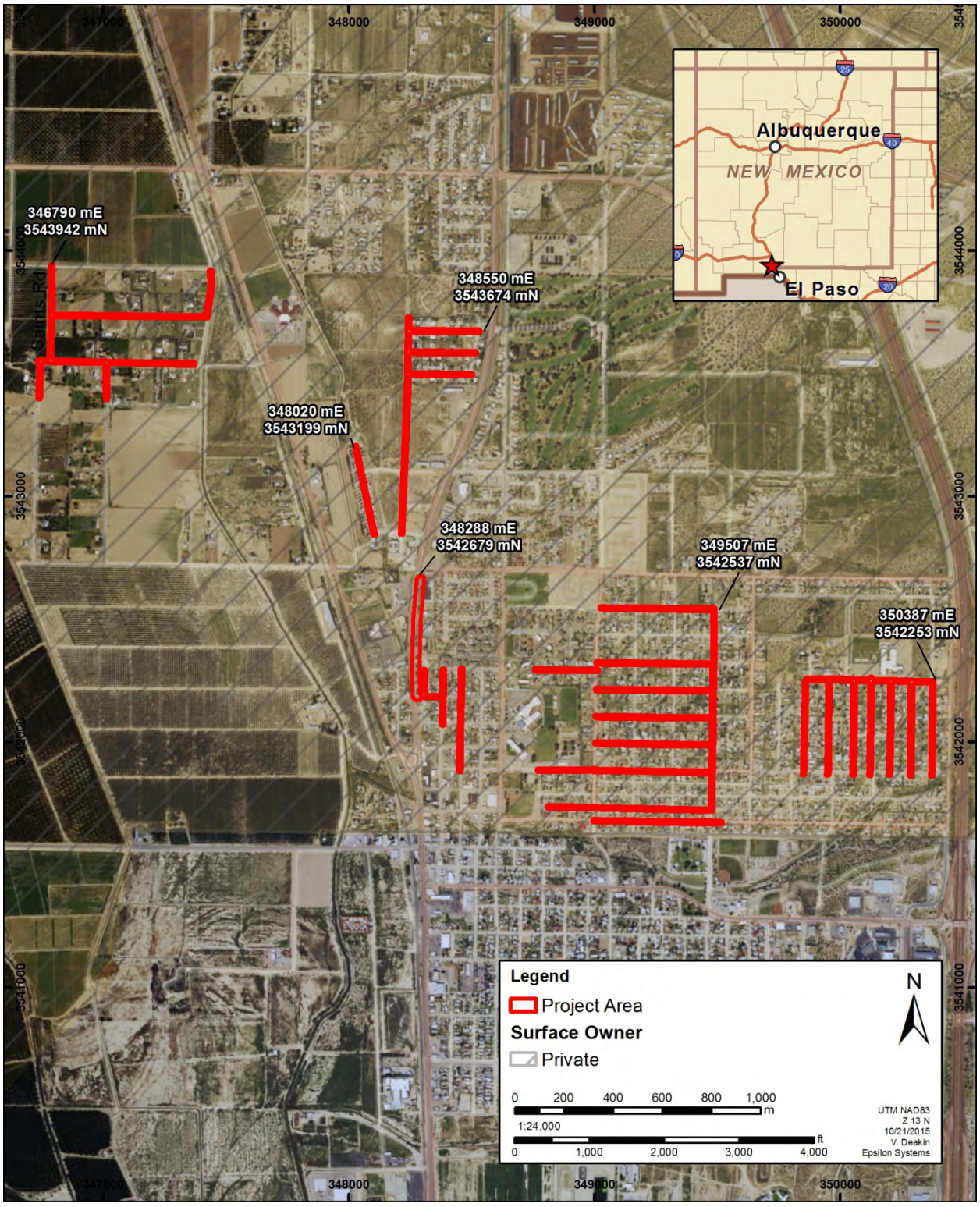

Figure 5 Project Area of Potential Effect

The detailed results of the survey and inventory are presented in *Cultural Resource Inventory for Proposed Water Distribution System Improvements in Anthony, Doña Ana County, New Mexico* (Beacham and Myers 2015). ARMS designated the survey as New Mexico Cultural Resources Information System (NMCRIS) Activity Number 134487.

The current inventory documented a total of 74 cultural resources within the APE, inclusive of two Isolated Occurrences (IOs), one historic road segment, two archaeological sites, 15 historic acequias, and 54 historic buildings. The two IOs are recommended as ineligible for inclusion in the NRHP under any criteria due to the fact that they have not, and likely will not, contribute important information relevant to the historic or prehistoric use of the region. The remaining historic resources within the project APE are as follows:

- **Historic Road Segment:** Per guidance in NMDOT Technical Series 2004-1 (Wallace 2004), the current utility installation is considered to be a minor project as it consists of a utility installation in disturbed road rights-of-way and a bore crossing that will not alter the alignment of New Mexico Highway 28 (NM 28) or any of their primary characteristics. Therefore, in-depth historic research was not conducted regarding this historic road. As a result, it is recommended that the eligibility of this historic highway for inclusion in the NRHP is undetermined. Because the waterline installation is not considered a major project it is further recommended that no additional research or treatment for NM 28 is necessary at this time.
- **Archaeological Sites:** LA 183520 and LA 183521 represent segments of an abandoned acequia system that constructed between 1946 and 1955. Examples of these irrigation systems, most still functional, are common across the Mesilla and Rincon Valleys and offer limited and largely redundant data potential. Both sites are unlikely to contain any significant buried deposits or information relevant to local or regional history. The sites are also unlikely to be associated with any persons or events significant to history of the area. Furthermore, the integrity of these sites has been adversely impacted by disturbances, inclusive of extensive mechanical blading, utility installation, erosion and vehicle traffic. As such, LA Numbers 183520 and 183521 are recommended as not eligible to the NRHP under any of the potentially applicable criteria. Therefore, subject to consultation and comment, no further management consideration is warranted for these resources.
- **Historic Acequias:** Of the 15 documented historic acequia segments, eight are recognized as contributing elements to the historic Elephant Butte Irrigation District, a property listed on the NMSRCP (State Register No. 1658) and the NRHP (NR No. 97000822). The remaining documented acequias are recommended eligible for the NMSRCP and the NRHP under Criterion A due to their association with the historic Elephant Butte Irrigation District. Despite the fact that the EBID does not consider these private ditches to be part of the EBID system, the ditches each feed from recognized contributing elements to the historic Elephant Butte Irrigation District, thus they are functionally connected to the EBID system.
- **Historic Buildings:** Of the 54 historic buildings documented, one is listed on the NMSRCP (Gadsden High School, State Register No. 1546). Of those remaining 53 buildings, 35 are recommended as not eligible for listing to the NRHP under any criteria. The remaining 18 are recommended as individually not eligible for listing to the NRHP; however, these buildings should be considered as possibly contributing to an as yet undefined historic district representing the dynamic processes of residential development of the Anthony area between 1900 and the

1970s. An investigation of a much larger area beyond the current project APE would be necessary to inventory and assess the significance of this potential district, and as such it is beyond the scope of the current project. These 18 buildings fall within the APE considered for direct and indirect effects related to the proposed construction activities, although it is located outside of, but immediately adjacent to the proposed construction footprint.

Michelle Ensey of the New Mexico Historic Preservation Division issued a formal response to the recommendations summarized above, dated 20 January, 2016 (HPD Log 102815). SHPO did not concur with all of the eligibility recommendations offered in the inventory report. However, SHPO did agree with the report's mitigation recommendations, stating, "In order to avoid effects to the 18 historic buildings that could be part of a historic district, the report recommends use of low vibratory equipment within 15 meters (50 feet) of historic buildings 10-13, 15, 16, 20, 21, 25, 27, 28, 30, 37, 40, 43, 46, 52 and 54. It is the SHPO's opinion that the effects should be considered **No Adverse**, provided that low vibratory equipment is used" (HPD Log 102815). The following list includes the street addresses for the 18 referenced historic buildings:

- 467 Gorman Street
- 461 Gorman Street
- 457 Gorman Street
- 453 Gorman Street
- 425 Davis Street
- 425 Timbers Street
- 905 Livesay Street
- 900 Livesay Street
- 1008 Grant Street
- 908 Grant Street
- 900 Grant Street
- 816 Grant Street
- 520 Second Street
- 621 Second Street
- 713 Second Street
- 620 Second Street
- 119 Madero Street
- 800 Anthony Drive

3.7 SOCIOECONOMICS

For the purposes of this EID, socioeconomics refers to the social and economic environment of Doña Ana County and Anthony; including growth rate, labor force, employment, income, and other economic indicators. The region of potential impact for socioeconomics is the area where the direct and indirect effects of activities associated with the proposed action would occur. Analysis of social impacts includes factors such as disproportionate impacts on particular population groups, loss of community cohesion, changes in accessibility of facilities and services, and displacement of people. Economic impacts include effects on business and employment, the local tax base, and other factors such as residential development in relation to local economic conditions.

In 2013, the average per-capita income of Anthony was $9,899, and Doña Ana County had an average per-capita income of $19,565. Both of these were lower than the statewide average of $23,763. The estimated median household income for Anthony in 2013 was $20,379 and $37,933 for Doña Ana County. Both were also lower than the median household income state average of $44,927. In addition, approximately 45 percent of Anthony's population lives below the poverty threshold. Table 3 below provides summarized data on population groups and economic status at state, county, and Anthony levels from the 2010 Census and 2014 projections (U.S. Census Bureau 2015a & 2015b).

Funding for the proposed water distribution system improvements will be in form of grants from the Local Government Planning Fund and the Colonias Infrastructure Program, both administered by the New Mexico Finance Authority.

Table 3 Demographic Characteristics

	New Mexico	Doña Ana County	Anthony
Total Population [1]	2,085,572	213,676	9,318
Racial and Age Characteristics	**New Mexico [1]**	**Doña Ana County [1]**	**Anthony [2]**
White	82.8%	92.1%	91.0%
Black	2.5%	2.2%	0.8%
American Indian/Alaska Native	10.4%	2.3%	0.1%
Asian	1.7%	1.3%	0.0%
Native Hawaiian/Other Pacific Islander	0.2%	0.1%	0.0%
Hispanic or Latino Origin	47.7%	66.8%	97.6%
Other/Two or More Races	2.3%	1.8%	0.3%
White Persons not Hispanic	38.9%	28.8%	2.4%
Persons under 5 Years	6.6%	7.2%	11.2%
Persons under 18 Years	25.4%	25.4%	35.7%
Persons 65 Years and Over	15.3%	14.2%	9.0%
Income Statistics [1]	**New Mexico**	**Doña Ana County**	**Anthony**
Per capita Money Income	$23,763	$19,565	$9,899
Persons per Household	2.66	2.79	3.44
Median Household Income	$44,927	$37,933	$20,379
Persons Below Poverty Level	21.3%	27.0%	45.2%

Sources: U.S. Census Bureau 2015a & 2015b.

Notes:

1. Based upon projections for 2014.
2. Based upon projections for 2013.

3.8 MUNICIPAL SERVICES

The City of Anthony, New Mexico Public Works Department provides street lighting for the City and coordinates curbside trash pickup for residential and business clients. Mesilla Valley Disposal, a private firm based in Mesilla Park, New Mexico, provides the curbside trash removal services. The City of Anthony also serves the community through the following departments:

- **Code Enforcement Department** provides Anthony land use and transportation planning as well as construction code permitting and inspection.
- **Administration Department** maintains the city's public records and provides its citizens accurate information to promote public interaction while providing high quality customer service.
- **Anthony Police Department** works in partnership with the community by upholding each citizen's constitutional rights, enforcing the law, preserving the peace, and providing a safe environment.
- **Public Works Department** provides the city crews for road maintenance support and graffiti removal (City of Anthony 2015).

Natural gas and electric utilities are provided by the New Mexico Gas Company and El Paso Electric Company, respectively.

AWSD provides water and wastewater services to the community. The water distribution system relies solely on groundwater for its water supply, provided by a system of seven wells, two water tanks, and several miles of waterlines. The groundwater pumped for the AWSD system has high levels of arsenic and total dissolved solids. To meet NMED and EPA drinking water standards, a central reverse osmosis

system is used to treat the AWSD water supply. The draft PER provides an overview of the AWSD water system (MCA 2015).

3.9 PUBLIC HEALTH

Arsenic is a semi-metal element in the periodic table that is odorless and tasteless. It enters the drinking water supply from natural deposits in the earth or from agricultural and industrial sources. In New Mexico arsenic levels in ground and surface water is elevated due to the high levels of volcanic activity in the state, especially along the Rio Grande Valley.

Non-cancer effects due to exposure to arsenic can include thickening and discoloration of the skin, stomach pain, nausea, vomiting, diarrhea, numbness in the hands and feet, partial paralysis, and blindness. Arsenic has also been linked to cancer of the bladder, lungs, skin, kidneys, nasal passages, liver, and prostate (EPA 2015).

In 2006, the EPA set the arsenic standard for drinking water at 10 parts per billion ([ppb] or 10 µg/l) to protect consumers served by public water systems from the effects of long-term, chronic exposure to arsenic. Naturally occurring arsenic in Doña Ana County and the Anthony area is generally around 20 ppb in groundwater (Chapin and Dunbar 1994, Aragon, et. al 2007). As provided in the MCA PER, 30 percent of AWSD water samples in a 2014-2015 survey conducted by Hall Environmental Analysis Laboratory (three out of ten) were found to be over the EPA arsenic standard, with a high sample result of 13 ppb. However, the average arsenic concentration in the drinking water was 7.9 ppb, which is in compliance with the EPA standard (MCA 2015).

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter provides the reasonably foreseeable impacts due to implementation of the No-Action Alternative and the three action alternatives.

4.1 ALTERNATIVE 1 – THE NO-ACTION ALTERNATIVE

4.1.1 Land Use

The No-Action Alternative would not impact land use in the project area. Current land use within the AWSD would remain the same. Ownership in the action area would remain in its current status, as would infrastructure such as waterline corridors, utilities, and transportation rights-of-way. There would be no direct or indirect impacts in the short- or long-term to land use.

4.1.2 Air Quality

Under the No-Action Alternative, there would be no change in construction emissions or operational emissions. Airborne particulate matter resulting from earth moving activities would not take place, with no change to air resources in the region.

4.1.3 Waste Management

The No-Action Alternative would not result in any removal and replacement of existing waterline. As such, no ACM waste will be generated or disposed. Therefore, there would be no impact under the No-Action Alternative associated with waste management.

4.1.4 Water Resources

Under the No-Action Alternative, there would be no expansion of the current water distribution system or replacement of aging infrastructure. As such, there would be no ground disturbance, and therefore, no impacts to surface water via storm water runoff. However, community residents on private wells would continue to draw from underground aquifers, and more wells will run dry if drought conditions continue or demand is greater than the recharge.

4.1.5 Biological Resources

Biological resources such as plant and wildlife species would not be affected under the No-Action Alternative, since no new ground disturbance would occur, and no construction activities would be conducted. No disturbance or harm to vegetative communities, wildlife habitat, or special status plant and wildlife species would occur. No additional spread of noxious weeds would take place. As a result, no short- or long-term impacts to biological resources would occur within the project area.

4.1.6 Cultural Resources

Under the No Action Alternative, there would be no expansion of the current water distribution system or replacement of aging infrastructure. Therefore, cultural resources would not be affected.

4.1.7 Socioeconomics

For the No-Action Alternative, AWSD would expand the current water distribution system or replace aging infrastructure. Local residents would still experience current water rates and wastewater system efficiency in the action area.

Area residents on well water would continue to utilize their private wells, which could lead to additional wells failing due to lack of groundwater. Also, some of these well users could elect to install arsenic removal systems. Treatment options include point-of-use systems that treat water in batches at a single tap and point-of-entry systems that treat water before entering the residence, allowing treated water to flow from all taps within a house. The most common treatment methods for household removal of arsenic include reverse osmosis, adsorptive media filtration, and distillation. Table 4 provides a summary of these methods and the costs associated with each.

Table 4 Treatment Options for Arsenic Removal

Treatment Type		Installation Cost	Annual Operation/ Maintenance Cost	Notes
Reverse Osmosis	Single Tap	$170-$1,100	$130	Softener may be needed. Adequate water pressure is needed. Significant volume of waste water generated.
	Whole House	$15,000-$20,000	$500	
Adsorptive Media Filter	Single Tap	$90-$100	$50-$120	Pretreatment may be required. Spent tap cartridges or house tanks must be recycled or disposed appropriately.
	Whole House	$2,750	$245-$365	
Distillation	Single Tap	$500	Undetermined	Softener may be needed. Loss of one gallon of water for each eight gallons produced.

Source: NMDOH 2015.

As reflected in Table 4, the costs associated with arsenic removal are not insignificant and could lead to long-term impacts to low-income households. However, these are not new impacts that can be directly attributed to the No-Action Alternative and must be considered indirect. There would be no short- or long-term direct impacts to socioeconomics.

4.1.8 Municipal Services

The No-Action Alternative would not affect electrical or gas services and distribution in the action area, no construction requiring electricity or gas service would be conducted. There would not be a change to the current availability of electricity or gas, and no loss or modification of electrical service or natural gas distribution. The water distribution infrastructure in the Enchanted Hills, Mesa Addition, and Las Familias subdivisions would continue to degrade and leaks could increase in those areas. Other than this loss in water distribution efficiency, no direct or indirect short- or long-term impacts to municipal services would occur under this alternative.

4.1.9 Public Health

The general level of public health and safety in Anthony would not change under the No-Action Alternative. However, the residents on private wells could still be exposed to arsenic levels higher than the EPA maximum contaminant level for public water systems.

4.1.10 Cumulative Impacts

Cumulative impacts anticipated as a result of the No-Action Alternative are summarized below:

- Community residents on private wells would continue to draw from underground aquifers, and more wells will run dry if drought conditions continue or demand is greater than the recharge;
- The costs associated with arsenic removal from private well water could impact low-income populations in the area;
- The water distribution infrastructure in the Enchanted Hills, Mesa Addition, and Las Familias subdivisions would continue to degrade and leaks could increase in those areas; and
- The residents on private wells could be exposed to arsenic levels higher than the EPA maximum contaminant level for public water systems.

4.2 ALTERNATIVE 2 – THE PROPOSED ACTION

4.2.1 Land Use

The waterline extension is proposed to be extended along existing roadway alignments through areas zoned for residential, vacant, tillable land, and commercial acreage. Land considered to be commercial acreage is property owned by the Gadsden Independent School District.

The waterline extension and waterline replacement is planned to be constructed within City, and NMDOT rights-of-way depending on where the road is located. A waterline extension to serve properties near the river would require utility easements to be obtained for several properties, while existing utility easements would be utilized for the other properties. Impacts to land use would occur during the installation and maintenance of the waterline extension. These impacts would be minor and temporary.

4.2.2 Air Quality

The proposed action would result in a temporary increase in fugitive dust from construction activities and vehicle emissions from both heavy equipment used for installation and passenger cars used for worker transport to the project sites. Water would be sprayed over excavation and construction areas to minimize dust. The air quality impacts would be direct and temporary, ceasing once construction is completed. There are no long-term impacts to air resources associated with the proposed action.

4.2.3 Waste Management

The proposed action is expected to generate ACM waste due to the removal of existing waterline pipe in the Enchanted Hills, Mesa Addition, and Las Familias subdivisions. ACM waste may also be generated as new waterline is connected to the existing water distribution system. Suspect pipes, fragments, or soils contaminated with related fragments or fines will be sampled and analyzed via polarized light microscopy to determine if the material contains greater than one percent asbestos. Any materials determined to be ACM will be handled as asbestos waste, in accordance with the asbestos NESHAP and New Mexico Solid Waste Rules 20.9.2 – 20.9.10 NMAC. If any single area requiring excavation of more than 120 cubic yards is discovered, excavation will cease and a Waste Excavation Plan will be prepared and submitted to the New Mexico Solid Waste Bureau, in accordance with 20.9.2.10(A)(15) NMAC.

Any ACM wastes generated will be handled and managed in accordance with the asbestos NESHAP. ACM waste will be sealed in a leak-tight container while wet, and labeled. The waste will be transported

to and disposed in a waste disposal facility licensed to accept special wastes containing asbestos. Through implementation of the asbestos NESHAP and New Mexico Solid Waste Rules, there would be no significant impacts due to waste management.

4.2.4 Water Resources

The proposed extension would involve 21,125 LF of waterline installation, and the replacement would cover approximately 36,475 LF. The average trench would be five feet in width, resulting in an approximate 6.6 acres of ground disturbance, requiring the development and implementation of a SWPPP. The construction contractor will also acquire a NPDES CGP providing coverage for storm water discharges from construction activities as clearing, grading, excavating, and stockpiling. Through the implementation of the prescribed BMPs of the SWPPP and CGP requirements, sediment runoff would be minimal.

The proposed action would eliminate many local private wells and would; therefore, have positive impacts on area groundwater resources.

4.2.5 Biological Resources

Direct, temporary effects to vegetation are expected as a result of the project. These impacts would be limited to the trenching corridors. Two state listed Class C noxious weeds (Siberian elm and saltcedar) and one Class B noxious weed (tree of heaven) were documented in the project area. Management decisions for these species should be determined in consultation with the New Mexico Department of Agriculture guidelines (NMDA 2009). The contractor shall implement BMPs including thoroughly washing all construction equipment prior to use at the project area and prior to leaving the project area. Following the completion of construction, revegetation of temporarily disturbed areas with native plant species shall be conducted using weed-free plant seed.

Potential effects to wildlife from the proposed project are expected to be minimal because of the previously disturbed nature of the project area. No direct losses of large mammals or birds are expected as a result of this project. No bird nests or animal burrows were present in the project areas, with the exception of barn swallow nests at the NM 225 Rio Grande bridge crossing. The nests were strictly confined to the bridge structure.

It is recommended that construction activities be conducted outside of the migratory bird nesting season, if possible. The scheduling of construction activities for the proposed project should consider the spring/summer breeding/nesting season for migratory birds. Due to the lack of observed nesting habitat the discovery of nests during construction is not expected; however, if active nests are found, then all construction activities in the immediate area should cease and a NMDGF-qualified biologist should be consulted on the best way to proceed. If construction activities do occur during spring/summer breeding/nesting season a NMDGF-qualified biologist should be consulted on the best way to proceed.

It is recommended that all project related trenching activities follow NMDGF trenching guidelines. These guidelines stipulate mitigation procedures for projects with open trenches and ditches that can trap small animals and injure larger mammals. Periods of highest activity for many of these species include night time, summer months and wet weather. Loss of wildlife can be minimized by these trenching guidelines (NMDGF 2003).

Through implementation of the conservation measures provided above, the proposed action would not adversely impact plant or wildlife species or communities as a whole. Furthermore, no impacts to state- or federally-listed plant or animal species are expected.

4.2.6 Cultural Resources

As documented in Section 3.5, there are 15 documented historic acequia segments within the project APE, eight of which are recognized as contributing to a historic district. There are also 19 buildings within the APE, one of which is a NMSRCP listed historic property (State Register No. 1546) and 18 that are recommended as individually not eligible for listing on the NRHP; however, these 18 buildings should be considered as possibly contributing to an as yet undefined historic district.

The proposed undertaking will include jack-and-bore crossings beneath each of the identified acequias. As such, the acequias will be avoided, as well as the elements that contribute to their eligibility to the NMSRCP or the NRHP. Therefore, the proposed undertaking will have *no adverse effect* on any of the documented acequias. No further management consideration is warranted for these resources.

The one NMSRCP listed and 18 buildings considered to be possibly contributing elements to a potential historic district fall within the APE considered for direct and indirect effects related to the proposed construction activities, although it is located outside of, but immediately adjacent to, the proposed construction footprint. It is recommended that low-vibration equipment and practices be used within 50 feet to avoid the possibility of damage due to vibration. If these recommendations are followed, the proposed undertaking should have *no adverse effect* on these historic buildings.

If these recommendations are followed, the proposed undertaking should have *no adverse effect* to any resources listed, or eligible for listing, in the NMSRCP or NRHP. However, should cultural materials be exposed during construction, all work should cease immediately and the NMDOT and the SHPO should be contacted.

4.2.7 Socioeconomics

Funding for the proposed water distribution system improvements will be in form of grants from the Local Government Planning Fund and the Colonias Infrastructure Program, both administered by the New Mexico Finance Authority. There are no anticipated water utility rate increases associated with the proposed action. Water delivery would be improved to the community and would; therefore, represent positive socioeconomic impacts to the City of Anthony.

4.2.8 Municipal Services

The proposed action would not affect electrical or gas services and distribution in the action area, no construction requiring electricity or gas service would be conducted. There would not be a change to the current availability of electricity or gas, and no loss or modification of electrical service or natural gas distribution. The water distribution infrastructure in the Enchanted Hills, Mesa Addition, and Las Familias subdivisions would be improved and would meet potential increases in demand.

4.2.9 Public Health

The purpose of the proposed water delivery improvements is to provide a consistent, efficient drinking water source to residents whose wells may have dried out and to replace leaking and aging infrastructure.

In addition to improved water delivery, the water in the AWSD system is treated to remove arsenic to acceptable EPA concentration levels.

The construction associated with the proposed action would temporarily increase area air pollution, but this temporary public impact would be negligible. The operations of the improved water delivery system would lead to long-term positive impacts on the area public health.

4.2.10 Cumulative Impacts

Cumulative impacts anticipated as a result of the proposed action are summarized below:

- Air quality impacts would be temporary. During construction, fugitive dust and vehicle emissions would be raised due to construction activity but would cease once construction is completed.
- The proposed action would likely generate special wastes containing asbestos. Through implementation of the asbestos NESHAP and New Mexico Solid Waste Bureau Rules, the impacts would be minor.
- Construction activities associated with the proposed action have the potential to impact water quality in the form of storm water run-off. If appropriate BMPs for construction are followed, these impacts are expected to be minimal.
- Minimal impacts to vegetation would take place due to soil that would be disturbed temporarily and permanently disturbed as a result of implementation of the proposed action. These impacts are not expected to be significant since most of the project area has previously been developed.
- It is recommended that construction activities take place outside the normal breeding season in order to avoid impacts to nesting birds. Minor, localized impacts to vegetation in the action area are anticipated. Area plant or wildlife species or communities as a whole are not anticipated to be impacted.

4.3 ACTION ALTERNATIVES OUTSIDE THE PROPOSED ACTION

This section provides a comparison of the action alternatives other than the proposed action. There are two waterline extension alternatives outside the proposed action:

- Alternative 1 would involve an approximate 8,400 LF of additional waterline as compared to the preferred alternative, extending the waterline from the corner of Webb Road and the Rio Grande levee south down to NM 225; and
- Alternative 2 would involve an additional 780 LF of waterline by extending the preferred alternative loop in the vicinity of O'Hara and Webb Roads.

The waterline replacement alternatives outside the proposed action all involve the installation of different size waterlines. However, there would be no difference in the amount of ground disturbance nor would there be any difference in the length of time involved in the installation of the various sizes. As such, the waterline replacement alternatives would have identical environmental impacts as the proposed action waterline replacement and will not be discussed further in this EID.

4.3.1 Land Use

The waterline extension alternatives would have land use impacts similar to the proposed action in that the construction would occur along existing roadway alignments through areas zoned for residential, vacant, tillable land, and commercial acreage. Land considered to be commercial acreage is property owned by the Gadsden Independent School District. Additional utility easements would be required under Waterline Extension Alternative 1 from properties along the Rio Grande levee. Impacts to land use would occur during the installation and maintenance of the waterline extension. These impacts would be minor and temporary

4.3.2 Air Quality

Both waterline extension alternatives outside the proposed action would require longer construction periods than the proposed action. However, the resulting air quality impacts would be direct and temporary, ceasing once construction is completed. There are no long-term impacts to air resources associated with these waterline extension alternatives.

4.3.3 Waste Management

The alternatives outside the proposed action would involve identical removal and renovation of aging waterline pipes. As such, the waste generation volumes would be the same. Suspect pipes, fragments, or soils contaminated with related fragments or fines will be sampled and analyzed via polarized light microscopy to determine if the material contains greater than one percent asbestos. Any materials determined to be ACM will be handled as asbestos waste, in accordance with the asbestos NESHAP and New Mexico Solid Waste Rules 20.9.2 – 20.9.10 NMAC.

Any ACM wastes generated will be handled and managed in accordance with the asbestos NESHAP. ACM waste will be sealed in a leak-tight container while wet, and labeled. The waste will be transported to and disposed in a waste disposal facility licensed to accept special wastes containing asbestos. Through implementation of the asbestos NESHAP and New Mexico Solid Waste Rules, there would be no significant impacts due to waste management.

4.3.4 Water Resources

The potential run-off impacts under the waterline extension alternatives would be greater than the proposed action. However, through implementation of BMPs, sediment runoff would be minimal.

Both extension alternatives would eliminate many local private wells and would; therefore, have positive impacts on area groundwater resources.

4.3.5 Biological Resources

Potential impacts to sensitive plant and wildlife due to implementation of the waterline extension alternatives would be minor given the previously disturbed condition of the project areas. However, greater potential for spreading invasive plant species would result as the alternatives would involve more trenching than the proposed action. Best management practices described in Section 4.2.4 would be implemented to minimize the potential for spreading noxious weeds over the project areas. Therefore impacts to biological resources would not be significant under the waterline extension alternatives.

4.3.6 Cultural Resources

The waterline extension alternatives would involve the same eight acequia and 18 buildings considered contributing factors to two historic districts. The actions taken under these alternatives will include jack-and-bore crossings beneath each of the identified acequias. As such, the acequias will be avoided, as well as the elements that contribute to their eligibility to the NMSRCP or the NRHP. Therefore, the proposed undertaking will have *no adverse effect* on any of the documented acequias. No further management consideration is warranted for these resources.

The 18 buildings considered to be contributing factors to a historic district fall within the APE considered for direct and indirect effects related to the waterline extension alternatives' construction activities, although it is located outside of, but immediately adjacent to the proposed construction footprint. It is recommended that low-vibration equipment and practices be used within 50 feet to avoid the possibility of damage due to vibration. If these recommendations are followed, these alternatives should have *no adverse effect* on these historic buildings.

If these recommendations are followed, the waterline extension alternatives should have *no adverse effect* to any resources listed, or eligible for listing, in the NMSRCP or NRHP. However, should cultural materials be exposed during construction, all work should cease immediately and the NMDOT and the SHPO should be contacted.

4.3.7 Socioeconomics

Funding for the proposed water distribution system improvements and its alternatives will be in form of grants from the Local Government Planning Fund and the Colonias Infrastructure Program, both administered by the New Mexico Finance Authority. There are no anticipated water utility rate increases associated with the proposed action. Water delivery would be improved to the community and would; therefore, represent positive socioeconomic impacts to the City of Anthony.

4.3.8 Municipal Services

The waterline extension alternatives would not affect electrical or gas services and distribution in the action area, no construction requiring electricity or gas service would be conducted. There would not be a change to the current availability of electricity or gas, and no loss or modification of electrical service or natural gas distribution. The water distribution infrastructure in the Enchanted Hills, Mesa Addition, and Las Familias subdivisions would be improved and would meet potential increases in demand.

4.3.9 Public Health

The purpose of the water delivery improvements associated with the waterline extension alternatives is to provide a consistent, efficient drinking water source to residents whose wells may have dried out and to replace leaking and aging infrastructure. In addition to improved water delivery, the water in the AWSD system is treated to remove arsenic to acceptable EPA concentration levels.

The construction associated with these alternatives would temporarily increase area air pollution, but this temporary public impact would be negligible. The operations of the improved water delivery system would lead to long-term positive impacts on the area public health.

4.3.10 Cumulative Impacts

Cumulative impacts anticipated as a result of the waterline extension alternatives are summarized below:

- Air quality impacts would be temporary. During construction, fugitive dust and vehicle emissions would be raised due to construction activity but would cease once construction is completed.
- The proposed construction activities would likely generate special wastes containing asbestos. Through implementation of the asbestos NESHAP and New Mexico Solid Waste Bureau Rules, the impacts would be minor.
- Construction activities associated with the proposed action have the potential to impact water quality in the form of storm water run-off. If appropriate BMPs for construction are followed, these impacts are expected to be minimal.
- Minimal impacts to vegetation would take place due to soil that would be disturbed temporarily and permanently disturbed as a result of implementation of the proposed action. These impacts are not expected to be significant since most of the project area has previously been developed.
- It is recommended that construction activities take place outside the normal breeding season in order to avoid impacts to nesting birds. Minor, localized impacts to vegetation in the action area are anticipated. Area plant or wildlife species or communities as a whole are not anticipated to be impacted.

4.4 Relationship of Short-Term Uses and Long-Term Productivity

Under the action alternatives there would be short-term impacts to vegetation, soil, air quality, and noise. Vegetation would be restored once construction is complete. There are no anticipated long-term effects with respect to vegetation, soil, air quality, or noise.

4.5 Irreversible and Irretrievable Commitments of Resources

Irreversible commitment of resources is defined as the loss of production or use of resources as a result of the alternative chosen for construction. Under each of the action alternatives, any groundwater that is

extracted that exceeds recharge rates would be an irretrievable impact on water resources. Permanent loss of vegetation during ground disturbance would occur, resulting in an irretrievable commitment of this biological resource. There would be no other irreversible and irretrievable commitments of resources under any alternative.

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CHAPTER 6 LIST OF PREPARERS

Brad Beacham, cultural resources

Mark Dimsha, NEPA specialist

Chris Grosso, biological resources

Nate Myers, cultural resources

Epsilon Systems Solutions, Inc.
3010 Mesilla Verde Terrace
Las Cruces, New Mexico 88005

CHAPTER 7 ACRONYMS AND ABBREVIATIONS

µg/m^3	microgram per cubic meter
ACM	asbestos containing material
APE	area of potential effect
AQB	Air Quality Bureau
ARMS	Archaeological Records Management Section
AWSD	Anthony Water & Sanitation District
BECC	Border Environment Cooperation Commission
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CGP	Construction General Permit
CO	carbon monoxide
CWA	Clean Water Act
EA	Environmental Assessment
EBID	Elephant Butte Irrigation District
EID	Environmental Information Document
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESS	Epsilon Systems Solutions, Inc.
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HB	Historic Building
HDD	horizontal directional drilling
HEPA	high efficiency particulate air
IBWC	International Boundary and Water Commission
IO	Isolated Occurrences
LF	linear feet
MCA	Molzen-Corbin & Associates
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Protection Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMAC	New Mexico Administrative Code
NMCRIS	New Mexico Cultural Resources Information System
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NMRPTC	New Mexico Rare Plants Technical Council
NMSRCP	New Mexico State Register of Cultural Places
NRCS	Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
O_3	ozone
PER	Preliminary Engineering Report
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PM_{10}	particulate matter 10 microns or less in diameter
ppb	parts per billion
ppm	parts per million
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
SWReGAP	Southwest Region Gap Analysis Project
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

CHAPTER 8 LIST OF AGENCIES AND PERSONS CONSULTED

Persons and entities on the local, state, and federal level with possible interest in the proposed project were contacted for their comments on potential environmental and cultural impacts resulting from the proposed project. Native American consultation was conducted as well. Table 5 below summarizes the contacted agencies and their responses. A copy of the original project consultation letter, along with the full mailing list and the responses received are included in Appendix C.

Table 5 Summary of Correspondence

Agency Contacted	Date		Agency Comment
	Sent	Reply	
Federal Agencies			
Mr. Richard Gatewood US Army Corps of Engineers Regulatory Manager for Southern NM/West Texas 505 South Main Street, Suite 142 Las Cruces, NM 88001 richard.h.gatewood@usace.army.mil	21 Sep 2015	21 Sep 2015	No significant impact anticipated
Mr. Wally Murphy, Field Supervisor US Fish and Wildlife Service NM Ecological Services Field Office 2105 Osuna Road NE Albuquerque, NM 87113	21 Sep 2015	21 Sep 2015	No significant impact anticipated.
US Dept. of the Interior National Park Service Intermountain Regional External Review Team imrextrev@nps.gov	21 Sep 2015	10 Oct 2015	No comments at this time.
Ms. Cathy Gilmore US Environmental Protection Agency Region 6 Mail Code 6EN-XP 1445 Ross Avenue Dallas, TX 75202	21 Sep 2015		Follow up with Salvador Gandara, 11 Nov 2015
Mr. Frank Pagano, Director Mitigation Division Federal Emergency Management Agency Region VI FRC 800 North Loop 288 Denton, TX 76209-3698	21 Sep 2015	05 Oct 2015	Request that the local communities' floodplain administrators be contacted for review and possible permit requirements. If federally funded, ensure project is compliant with EO 11988 and EO 11990.

Agency Contacted	Date		Agency Comment
	Sent	Reply	
Mr. J. Xavier Montoya State Conservationist US Department of Agriculture NRCS State Office 6200 Jefferson NE, Room 305 Albuquerque, NM 87109	21 Sep 2015	02 Oct 2015	The entire project is located in an urban or developed area in an existing easement. The proposed project will not cause Prime or Unique Farmlands or hydric soils to be converted to non-agricultural or non-hydric uses.
Mr. Adrian Tafoya District Conservationist NRCS-Las Cruces Service Center 2507 North Telshor Blvd. #1 Las Cruces, NM 8801	21 Sep 2015		Follow up attempt made via email 7 Oct 2015.
Mr. Luis Ramos International Boundary & Water Commission 504 S Miranda Las Cruces, NM 88001	21 Sep 2015		Follow up call and email to Albert Flores, Tony Solo and Julie Sokolowski, 30 Nov 2015.
Tribal Consultation			
Chairman Wallace Coffey Comanche Nation of Oklahoma PO Box 908 Lawton, OK 73502	28 Oct 2015		
Governor Carlos Hisa Ysleta del Sur Pueblo 117 S. Old Pueblo Road PO Box 17579-Ysleta Station El Paso, TX 79907	28 Oct 2015	03 Nov 2015	The proposed project will not affect any objects, sites, or locations of traditional religious importance to the Ysleta del Sur Pueblo.
Chairman Ronnie Lupe White Mountain Apache Tribe PO Box 700 Whiteriver, AZ 85941	28 Oct 2015		
President Ben Shelly Navajo Nation PO Box 7440 Window Rock, AZ 86515	28 Oct 2015		
President Danny Breuninger, Sr. Mescalero Apache Tribe PO Box 227 Mescalero, NM 88340	28 Oct 2015		
Governor Robert Mora, Sr. Pueblo of Tesuque Route 42, Box 360-T Santa Fe, NM 87506	28 Oct 2015		
Chairman Amber Toppah Kiowa Tribe of Oklahoma PO Box 369 Carnegie, OK 73015	28 Oct 2015		

Agency Contacted	Date		Agency Comment
	Sent	Reply	
Chairman Jeff Haozous Fort Sill Apache Tribe Rt. 2, Box 121 Apache, OK 73006	28 Oct 2015		
Governor E. Paul Torres Pueblo of Isleta P.O. Box 1270 Isleta Pueblo, NM 87022	28 Oct 2015		
State of New Mexico Agencies			
Mr. Jeff Pappas, PhD NM Office of Cultural Affairs Historic Preservation Officer 407 Galisteo Street, Suite 236 Santa Fe, NM 87501	11 Sep 2015	20 Jan 2016	It is SHPO's opinion that the effects should be considered **No Adverse**, provided that low vibratory equipment is used. (Signed by Michelle Ensey, HPD Log 102815)
Mr. Kenneth K. Cunningham Assistant Chief NM Department of Game and Fish Environmental Services Division PO Box 25112 Santa Fe, NM 87504	21 Sep 2015	21 Oct 2015	Recommend river crossing method minimizing footprint in river bed and floodplain. If bridge crossing is chosen, suggest using bat-friendly design elements.
Mr. Scott Verhines, PE State Engineer NM Office of the State Engineer PO Box 25102 Santa Fe, NM 87504	21 Sep 2015		
Mr. Gary Funkhouser Utilities and Right of Way Access Coordinator Environmental Development Section New Mexico Department of Transportation P.O. Box 1149 Santa Fe, NM 87504-1149	21 Sep 2015	15 Feb 2015	The NMDOT Environmental Bureau has no concerns with this project and this document constitutes environmental clearance for the project to proceed within NMDOT highway rights- of-way.
Ms. Daniela Roth, Coordinator EMNRD, Endangered Plants Program 1220 S. St. Francis Road Santa Fe, NM 87505	21 Sep 2015	13 Oct 2015	There is potential for two state listed species within the project area: sand pricklypear, and night-blooming cereus. Clearance surveys for any areas that may provide suitable habitat are recommended. If either species is located within project site, recommend avoidance or minimizing impacts.

Agency Contacted	Date		Agency Comment
	Sent	Reply	
Mr. Morgan Nelson NM Environment Department Env. Impact Review Coordinator PO Box 5469 Santa Fe, NM 87502	21 Sep 2015	29 Feb 2016 (Response provided by Thomas Skibitski)	With appropriate BMPs, this project is not expected to negatively impact air quality on a long-term basis. AWSD must ensure that there will be no physical connection between existing private wells and the municipal system. The lines from private wells to the houses must be cut and capped. Construction should be completed in accordance with NMED Recommended Standards for Water Facilities. The project is not expected to have any adverse impacts on ground-water quality. All parties involved in the construction should be aware of notification requirements for accidental discharges (from heavy equipment). Some older pipes may have asbestos insulation. Excavation of such pipes would lead to generation of asbestos containing wastes. Suspect pipes, segments, or soils shall be sampled and analyzed to determine if the material contains more than 1% asbestos. Management and disposal of such materials must be conducted in accordance with NM Solid Waste Bureau Rules. The EPA requires NPDES CGP coverage for construction activities that disturb one or more acres. Prior to construction, construction operators must obtain an NPDES permit, which requires a SWPPP be developed for the project. The SWPPP shall include BMPs that will be implemented and maintained.

Agency Contacted	Date		Agency Comment
	Sent	Reply	
Municipal and County Agencies			
Mr. Gary Esslinger Elephant Butte Irrigation District 530 S. Melendres Las Cruces, NM 88005	21 Sep 2015		
Mr. Daniel Hortert Community Development Director Doña Ana County 845 N. Motel Blvd Las Cruces, NM 88007	21 Sep 2015		
Ms. Julia T. Brown County Manager Doña Ana County 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015		
Mr. Kurt Moffat Utilities Director Doña Ana County 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015	08 Oct 2015	No significant impact anticipated.
Dr. David Garcia District 2 Commissioner Doña Ana County 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015		
Mr. Enrique Vigil Sherriff Doña Ana County 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015		
Mr. Robert Armijo County Engineer Doña Ana County 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015		
Mr. Paul Dugie, Director Doña Ana County Flood Commission 845 N. Motel Blvd. Las Cruces, NM 88007	21 Sep 2015	29 Sep 2015	No significant impact anticipated. (Signed by E. David Gaugham)
Mr. Jay Armijo South Central Council of Governments 600 Highway 195, Ste D PO Box 1072 Elephant Butte, NM 87935	21 Sep 2015	29 Sep 2015	No significant impact anticipated.
Mayor Arnulfo Castañeda City of Anthony, NM 820 Highway 478 PO Box 2663 Anthony, NM 88021	21 Sep 2015		

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Appendix A

Supporting Documentation


LEGEND
NOTES
FIRM
FLOOD INSURANCE RATE MAP
DONA ANA COUNTY, NEW MEXICO AND INCORPORATED AREAS
MAP NUMBER
35013C0925 E
EFFECTIVE DATE:
SEPTEMBER 27, 1991
Federal Emergency Management Agency


LEGEND
NOTES
FIRM
FLOOD INSURANCE RATE MAP
DONA ANA COUNTY, NEW MEXICO AND INCORPORATED AREAS
MAP NUMBER
EFFECTIVE DATE:
SEPTEMBER 27, 1991

People QuickFacts	Anthony CDP	New Mexico	
Population, 2011 estimate	X	2,078,674	
Population, 2010 (April 1) estimates base	X	2,059,180	
Population, percent change, April 1, 2010 to July 1, 2011	X	0.9%	
Population, 2010	9,360	2,059,179	
Persons under 5 years, percent, 2010	9.9%	7.0%	
Persons under 18 years, percent, 2010	35.9%	25.2%	
Persons 65 years and over, percent, 2010	8.7%	13.2%	
Female persons, percent, 2010	52.6%	50.6%	
White persons, percent, 2010 (a)	61.5%	68.4%	
Black persons, percent, 2010 (a)	0.8%	2.1%	
American Indian and Alaska Native persons, percent, 2010 (a)	0.5%	9.4%	
Asian persons, percent, 2010 (a)	0.1%	1.4%	
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.1%	0.1%	
Persons reporting two or more races, percent, 2010	2.5%	3.7%	
Persons of Hispanic or Latino origin, percent, 2010 (b)	97.4%	46.3%	
White persons not Hispanic, percent, 2010	2.2%	40.5%	
Living in same house 1 year & over, percent, 2007-2011	87.7%	84.6%	
Foreign born persons, percent, 2007-2011	38.3%	9.8%	
Language other than English spoken at home, percent age 5+, 2007-2011	92.0%	36.2%	
High school graduate or higher, percent of persons age 25+, 2007-2011	47.4%	83.1%	
Bachelor's degree or higher, percent of persons age 25+, 2007-2011	1.4%	25.4%	
Veterans, 2007-2011	207	176,805	
Mean travel time to work (minutes), workers age 16+, 2007-2011	21.5		21.8
Housing units, 2010	2,809	901,388	
Homeownership rate, 2007-2011	67.7%	69.6%	
Housing units in multi-unit structures, percent, 2007-2011	13.5%	15.0%	
Median value of owner-occupied housing units, 2007-2011	$65,300	$161,800	
Households, 2007-2011	2,520	762,002	
Persons per household, 2007-2011	3.36		2.62
Per capita money income in the past 12 months (2011 dollars), 2007-2011	$9,431	$23,537	
Median household income, 2007-2011	$21,364	$44,631	
Persons below poverty level, percent, 2007-2011	44.6%	19.0%	

Business QuickFacts	Anthony CDP	New Mexico
Total number of firms, 2007	780	157,231
Black-owned firms, percent, 2007	F	1.2%
American Indian- and Alaska Native-owned firms, percent, 2007	F	5.3%
Asian-owned firms, percent, 2007	F	2.1%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.1%
Hispanic-owned firms, percent, 2007	S	23.6%
Women-owned firms, percent, 2007	S	31.7%

Manufacturers shipments, 2007 ($1000)	NA	17,122,725
Merchant wholesaler sales, 2007 ($1000)	D	10,589,286
Retail sales, 2007 ($1000)	D	24,469,997
Retail sales per capita, 2007	D	$12,429
Accommodation and food services sales, 2007 ($1000)	D	3,734,300

People QuickFacts	Dona Ana County	New Mexico
Population, 2012 estimate	214,445	2,085,538
Population, 2010 (April 1) estimates base	209,234	2,059,180
Population, percent change, April 1, 2010 to July 1, 2012	2.5%	1.3%
Population, 2010	209,233	2,059,179
Persons under 5 years, percent, 2011	7.5%	7.0%
Persons under 18 years, percent, 2011	26.5%	24.9%
Persons 65 years and over, percent, 2011	12.6%	13.6%
Female persons, percent, 2011	50.9%	50.5%
White persons, percent, 2011 (a)	92.5%	83.4%
Black persons, percent, 2011 (a)	2.1%	2.5%
American Indian and Alaska Native persons, percent, 2011 (a)	2.2%	10.1%
Asian persons, percent, 2011 (a)	1.3%	1.6%
Native Hawaiian and Other Pacific Islander persons, percent, 2011 (a)	0.1%	0.2%
Persons reporting two or more races, percent, 2011	1.7%	2.3%
Persons of Hispanic or Latino Origin, percent, 2011 (b)	65.9%	46.7%
White persons not Hispanic, percent, 2011	29.9%	40.2%
Living in same house 1 year & over, percent, 2007-2011	81.1%	84.6%
Foreign born persons, percent, 2007-2011	18.1%	9.8%
Language other than English spoken at home, percent age 5+, 2007-2011	51.4%	36.2%
High school graduate or higher, percent of persons age 25+, 2007-2011	76.1%	83.1%
Bachelor's degree or higher, percent of persons age 25+, 2007-2011	25.5%	25.4%
Veterans, 2007-2011	16,640	176,805
Mean travel time to work (minutes), workers age 16+, 2007-2011	19.3	21.8
Housing units, 2011	82,980	908,132
Homeownership rate, 2007-2011	66.1%	69.6%
Housing units in multi-unit structures, percent, 2007-2011	17.9%	15.0%
Median value of owner-occupied housing units, 2007-2011	$141,900	$161,800
Households, 2007-2011	72,748	762,002
Persons per household, 2007-2011	2.75	2.62
Per capita money income in the past 12 months (2011 dollars), 2007-2011	$19,077	$23,537
Median household income, 2007-2011	$37,223	$44,631
Persons below poverty level, percent, 2007-2011	25.6%	19.0%

Business QuickFacts	Dona Ana County	New Mexico
Private nonfarm establishments, 2010	3,610	44,221
Private nonfarm employment, 2010	50,117	600,165
Private nonfarm employment, percent change, 2000-2010	35.3	9.2

Nonemployer establishments, 2010	12,302	120,470
Total number of firms, 2007	15,497	157,231
Black-owned firms, percent, 2007	0.8%	1.2%
American Indian- and Alaska Native-owned firms, percent, 2007	2.2%	5.3%
Asian-owned firms, percent, 2007	S	2.1%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.1%
Hispanic-owned firms, percent, 2007	42.1%	23.6%
Women-owned firms, percent, 2007	29.0%	31.7%
Manufacturers shipments, 2007 ($1000)	931,885	17,122,725
Merchant wholesaler sales, 2007 ($1000)	448,203	10,589,286
Retail sales, 2007 ($1000)	1,925,550	24,469,997
Retail sales per capita, 2007	$9,715	$12,429
Accommodation and food services sales, 2007 ($1000)	238,748	3,734,300
Building permits, 2011	644	4,067
Geography QuickFacts	Dona Ana County	New Mexico
Land area in square miles, 2010	3,807.51	121,298.15
Persons per square mile, 2010	55	1
FIPS Code	13	3
Metropolitan or Micropolitan Statistical Area	Las Cruces, NM Metro Area	

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Results of County Search

DOÑA ANA	
Scientific name	County-NM
Agastache cana	Doña Ana, Grant, Luna, Sierra
Agastache pringlei var. verticillata	Doña Ana
Astragalus castetteri	Doña Ana, Sierra
Castilleja organorum	Doña Ana
Draba standleyi	Doña Ana, Otero, Sierra, Socorro
Escobaria organensis	Doña Ana
Escobaria sandbergii	Doña Ana, Sierra
Escobaria sneedii var. sneedii	Doña Ana
Escobaria villardii	Doña Ana, Otero
Hexalectris arizonica	Doña Ana, Hidalgo, Otero, Sierra
Hymenoxys vaseyi	Doña Ana, Sierra
Oenothera organensis	Doña Ana
Opuntia arenaria	Doña Ana, Luna, Socorro
Peniocereus greggii var. greggii	Doña Ana, Grant, Hidalgo, Luna
Penstemon alamosensis	Doña Ana, Lincoln, Otero
Perityle cernua	Doña Ana
Perityle staurophylla var. staurophylla	Doña Ana, Otero, Sierra
Polygala rimulicola var. mescalerorum	Doña Ana
Salvia summa	Chaves, Doña Ana, Eddy
Scrophularia laevis	Doña Ana
Silene plankii	Bernalillo, Doña Ana, Sandoval, Sierra, Socorro, Torrance

Photo credits in header *Peniocereus greggii var. greggii* © T. Todsen, *Lepidospartum burgessii* © M. Howard, *Argemone pleiacantha ssp. pinnatisecta* © R. Sivinski
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Report County TES Table for

Dona Ana

NEW MEXICO WILDLIFE OF CONCERN

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service website at http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to http://nmrareplants.unm.edu/. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

Export to Excel

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat
Spotted Bat	Euderma maculatum	T		
Organ Mountains Colorado Chipmunk	Tamias quadrivittatus australis	T		
Brown Pelican	Pelecanus occidentalis	E		
Common Black Hawk	Buteogallus anthracinus	T		
Bald Eagle	Haliaeetus leucocephalus	T		
Aplomado Falcon	Falco femoralis	E	E	
Peregrine Falcon	Falco peregrinus	T		
Arctic Peregrine Falcon	Falco peregrinus tundrius	T		
Least Tern	Sternula antillarum	E	E	
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Common Ground-dove	Columbina passerina	E		
Yellow-billed Cuckoo (western pop)	Coccyzus americanus occidentalis		T	
Mexican Spotted Owl	Strix occidentalis lucida		T	Y
Buff-collared Nightjar	Antrostomus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Costa's Hummingbird	Calypte costae	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Bell's Vireo	Vireo bellii	T		

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Appendix B

Federal Cross-Cutting Regulations

Congress has passed a number of environmental laws which address the federal responsibility for protecting and conserving special resources. Examples of such laws are the Endangered Species Act, the National Historic Preservation Act, and the Wild and Scenic Rivers Act. The U.S. Environmental Protection Agency (EPA) refers to these laws generally as “cross-cutting regulations” because the requirement to comply with them cuts across all federal programs. Additionally, the President of the United States has implemented Executive Orders (EO) that can be considered cross-cutting regulations. A list of cross-cutting environmental laws and regulations is provided in this appendix.

The cross-cutting regulations require federal agencies to consider the impact that their programs and individual actions might have n particular resources and such consideration must be documented as part of the agency’s decision-making process. Federal undertakings that could have an effect include agency activities which would physically disrupt the environment, such as construction projects, and the issuance of grants and permits for projects that could also have an impact. All federal agencies must comply with these laws in carrying out activities unless a statute provides for an exemption or deferral because of an emergency or some other situation. In some cases, states administering federal programs have the lead in cross-cutting compliance.

The Clean Air Act [42 U.S.C. §7401 et. seq. (CAA)] is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The standards are expressed in micrograms per cubic meter (mg/m^3) or parts per million (ppm), over a specified time period. The six categories of pollutants include sulfur dioxide, nitrogen dioxide, ozone, carbon monoxide, lead, and particulate matter, including less than ten microns and less than 2.5 microns in diameter (PM_{10} and $PM_{2.5}$).

The Clean Water Act [33 U.S.C. §1251 et. seq. (CWA)] establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972.

The Endangered Species Act [16 U.S.C. § 1531 et seq. (ESA)] ensures that federal agencies and departments use their authorities to protect and conserve endangered and threatened species. Section 7 of the Act requires that federal agencies prevent or modify any projects authorized, funded, or carried out by the agencies that are "likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of critical habitat of such species."

The Fish and Wildlife Coordination Act [16 U.S.C. 661 et seq. (FWCA)], as amended in 1964, was enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. The statute requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; take action to prevent loss or damage to these resources; and provide for the development and improvement of these resources.

The purpose of the **Wild and Scenic Rivers Act** [16 U.S.C. 470 (WSRA)] is to preserve the free-flowing state of rivers that are listed in the National Wild and Scenic Rivers System (System) or under study for inclusion in the System because of their outstanding scenic, recreational, geologic, fish and wildlife,

historic, cultural, or other similar values. Rivers in the System are classified as wild river areas, scenic river areas, or recreational river areas. The WSRA establishes requirements applicable to water resource projects and protects both the river, or river segments, and the land immediately surrounding them.

The purpose of **Executive Order 11990 – Protection of Wetlands** (May 24, 1977, 42 FR 26961) is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands". To meet these objectives, the Order requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. The Order applies to:

- acquisition, management, and disposition of federal lands and facilities construction and improvement projects which are undertaken, financed or assisted by federal agencies;
- federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

Executive Order 11988 – Floodplain Management (May 24, 1977, 42 FR 26961) requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities" for the following actions:

- acquiring, managing, and disposing of federal lands and facilities;
- providing federally-undertaken, financed, or assisted construction and improvements;
- conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

The Wilderness Act (16 U.S.C. 1131 et seq.) establishes a system of National Wilderness area and a policy for protecting and managing this system. With certain exceptions, the Act prohibits motorized equipment, structures, installations, roads, commercial enterprises, aircraft landings, and mechanical transport. The Act permits mining on valid claims, access to private lands, fire control, insect and disease control, grazing, water-resource structures upon the approval of the President), and visitor use.

The National Historic Preservation Act [16 U.S. C. 470 (NHPA)], as amended, directs federal agencies to integrate historic preservation into all activities which either directly or indirectly involve land use decisions. This is to ensure federal leadership in the preservation of prehistoric and historic resources in the United States.

The NHPA is administered by the U.S. Department of Interior, National Park Service (NPS) and the Advisory Council on Historic Preservation (ACHP). The NHPA is also implemented through State Historic Preservation Officers (SHPOs) in each state and territory and through Federal Preservation Officers (FPOs) in each federal agency.

The Archeological and Historic Preservation Act [16 U.S.C. 470 (AHPA)], as amended, furthers the policies of the Historic Sites Act of 1935 by providing for the preservation of cultural resources that may

be damaged by federal or federally authorized construction activities. The statute contains the Reservoir Salvage Act of 1960 and amendments made to it in 1974 (P.L. 93-291, known as the Moss-Bennett Act) and 1978 (P.L. 95-625). The portions of AHPA that may apply to federal agency projects are Section 4 (a) and Section 7 (a). Section 4 (a) requires that the Secretary of the interior be notified when unanticipated archeological materials are discovered during construction of a federal undertaking. Section 7 (a) limits the amount of funds expended for archeological data recovery as part of a federal undertaking to one percent of project expenses. However, Section 208 of the 1980 amendments to the National Historic Preservation Act (P.L. 96- 515) establish a procedure for agencies to request the Secretary of the Interior to waive the one percent limitation.

The purpose of **the Farmland Protection Policy Act** [7 U.S.C. 4201 et seq. (FPPA)] is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, local, and private programs and policies to protect farmland. Additionally, EPA's policy is to protect that Nation's significant / important agricultural lands from conversions that are irreversible and result in the loss of an essential food or environmental resource.

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994, 59 FR 7629) directed federal agencies to develop environmental justice strategies to aid federal agencies identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment. The Presidential Memorandum accompanying the Order underscores certain provisions of existing law that can help ensure that all communities and persons across this nation live in a safe and healthful environment.

Appendix C

Correspondence

Epsilon Systems Solutions, Inc.
3010 Mesilla Verde Ter
Las Cruces, NM 88005
Tel 575-528-8197
www.epsilonsystems.com

September 21, 2015

RECEIVED
SEP 2 8 2015
BY:

Mr. Jay Armijo
South Central Council of Governments
600 Highway 195, Ste D
PO Box 1072
Elephant Butte, NM 87935

RE: Water Distribution System Improvements, Anthony Water and Sanitation District, Anthony, Doña Ana County, New Mexico

The Anthony Water and Sanitation District (AWSD) proposes to install improvements to their current water distribution system. The improvements include two elements:

1. Waterline extension to areas currently not served. These areas include locations where property owners are on privately owned water wells which have gone dry due to the drought conditions. This expansion would also include an infrastructure crossing of the Rio Grande with the long term goal of interconnecting the La Union system to allow for redundancy if an outage occurs in either system.
2. Replacement of existing polyethylene waterlines located in the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions in Anthony, New Mexico. These older area of Anthony have many leaks and the aging infrastructure needs to be replaced to continue to provide reliable service.

Waterline Extension:

The proposed waterline extension would extend west across the Rio Grande to accept more people into the service area. These areas include locations where property owners are on privately owned water wells which have gone dry due to the drought conditions; this also includes the Gadsden Independent School District. This expansion would continue along (New Mexico Highway 225) NM 225/Washington Street and provide water service to residents and to Gadsden High School before continuing south along New Mexico Highway 28 (NM 28) to provide service to Desert Pride Academy. This expansion would also help with the long term goal of interconnecting with the La Union System to allow for redundancy if an outage occurs in either system.

To accommodate the waterline expansion, the AWSD is considering three waterline alternative alignments for the expansion as well as three alternative river crossing methods.

The three waterline extension alignment alternatives (Figures 1 & 2) include:

1. **Extension Alternative 1** comprised of the following:
    a. A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend to a Rio Grande river levee, where it would turn south joining a waterline at NM 225.
    b. An extension of the Webb Road line, joining the water loop at the Rio Grande river levee.
    c. An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle.

d. A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

2. **Extension Alternative 2** comprised of the following:
   a. A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend to a Rio Grande river levee, where it would turn south to Webb Road. At Web Road, this loop would extend eastward, connecting to an existing 10-inch waterline.
   b. An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle.
   c. A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

3. **Extension Alternative 3 (Preferred Alternative)** comprised of the following:
   a. A waterline loop extending westward from the intersection of O'Hara and Dairy Farm Roads. This loop would extend westward to the eastern side of the EBID Three Saints West Lateral, where it would turn south to Webb Road. At Web Road, this loop would extend eastward, connecting to an existing 10-inch waterline.
   b. An extension of the NM 225 waterline west, crossing the Rio Grande and ending at Westside Road. This line includes a loop following Boone Circle.
   c. A waterline extension from the NM 225 and Westside Road intersection, extending west along NM 225 to NM28, where it turns south terminating at Desert Pride Academy. This waterline will provide service to Gadsden High School and Desert Pride Academy.

All three alignment alternatives include extension of the existing waterlines westward crossing the Rio Grande. The three river crossing technologies considered include:

1. **Horizontal directional drilling** (HDD) serves as the preferred alternative and would allow trenchless installation of the proposed waterline extension under the Rio Grande without disrupting the river flow. With this method, the drilling contractor is capable of drilling under the river along a planned path, connecting the sites on the east and west sides of the river outside of the ordinary high water mark.

2. **A bridge crossing** would consist of the waterline crossing over the Rio Grande with the aid of either hangars or a cantilever support along the side or beneath the bridge. Most likely the waterline would need to be ductile iron or of similar material with a stronger collapse pressure when compared to C900 PVC pipe or C900 PVC pipe encased in steel. The encasement would be approximately six to 10 inches larger in diameter than the carrier pipe. Permitting for construction utilizing this method would consist of New Mexico Department of Transportation (NMDOT) as well as International Boundary & Water Commission (IBWC) approval.

3. **Pipe trenching** would consist of laying the new pipe in an open trench across the Rio Grande. Ideally, this method could be used in the winter when flows within the river are low to nonexistent. Permitting for this type of river crossing would be limited to the US Army Corps of Engineers, IBWC as well as the EBID.

Waterline Replacement:

Currently, the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions are experiencing many leaks and unreliable water service due to aging water infrastructure. The existing polyethylene waterlines are in need of replacement to provide reliable water service. Table 1 provides the existing lengths and sizes of waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions.

Table 1 Existing Waterlines to be Replaced

Street	Waterline Diameter (in)	Length (ft)
Timbers	4	1,250
Davis	3	1,250
Gorman (south)	6	500
Ramsey	6	1,250
Archer (south)	2	500
San Andres	8	1,250
Donaldson	6	1,850
Donaldson	2	525
Donaldson (west)	4	350
Church	6	950
Church (east)	8	750
Alleyway Distribution Lines Between Through Streets		
Davis and Gorman	2	1,250
Gorman and Ramsey	2	650
Ramsey and Archer	2	750
Archer and Marquez	2	1,250
Marquez and San Andres	2	1,050

There are four action alternatives being considered for the waterline replacement (Figures 1 & 3). The alternatives vary in terms of pipe sizing. These alternatives include:

1. **Replacement Alternative 1** – This alternative includes the replacement of all waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions with new 4-inch C-900 PVC waterline. This would be an increase in pipe diameter for all of the 2 and 3-inch waterlines, but would be a decrease in capacity for any of the 6 and 8-inch waterlines.

2. **Replacement Alternative 2** – This alternative includes the replacement of all waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions with new 6-inch C-900 PVC waterline. This would be an upgrade to all waterlines by adding capacity except for 6-inch waterlines where the capacity would not change, but quality would. The 8-inch waterline along San Andres Street would be decreased in size to a 6-inch waterline.

3. **Replacement Alternative 3** – This alternative includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions with existing 3 or 4-inch waterlines upgraded to 6-inch lines. The existing 6 and 8-inch waterline would be replaced in kind. C-900 waterline would be used for each replacement.

4. **Replacement Alternative 4** – This alternative serves as the preferred alternative and includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions without any decrease in pipe size. Six-inch waterline would be utilized for all areas with 6-inch or smaller diameter waterlines. The waterline along San Andres Street would be replaced with an 8-inch waterline in order to keep capacity the same. C-900 waterline would be used for each replacement.

The waterline extension and waterline replacement components of the proposed action would be gravity-fed with no requirements for additional support from lift stations or booster pump stations. PVC pipe is proposed to be the pipe material for the waterline replacement. PVC is sustainable with a long design life.

The project area is located within Township 26 South, Range 3 East, Sections 26, 27, 35 and 36, as well as unplatted land within the Refugio Colony Land Grant, in Doña Ana County, New Mexico, as shown on the *Anthony, NM*, *La Mesa, NM*, and *La Union, NM* 7.5-minute United States Geological Survey quadrangles. Adjacent land ownership is a combination of municipal, state, and private land owners. All appropriate land owners will be notified as part of the environmental process. The environmental investigations and documentation will be prepared in following with the requirements of the U.S. Environmental Protection Agency.

In accordance with environmental requirements of 24 CFR part 58 and the National Environmental Policy Act of 1969 (NEPA), the appropriate agencies must be consulted for their comments/review. Your comments can be as simple as checking off the appropriate box below, signing your name or placing your stamp, and mailing/faxing/emailing it back to me: **3010 Mesilla Verde Terrace, Las Cruces, New Mexico 88005, FAX: 505-766-9885, Email: ebeacham@epsilonsystems.com.** Thank you for your time and consideration.
Sincerely,

Brad Beacham

Brad Beacham, Project Manager
Epsilon Systems Solutions, Inc.

☒ No significant impact anticipated

☐ Significant impact anticipated due to the following reasons:

Signature

Exec. Director
Title

9/29/2015
Date

4. **Replacement Alternative 4** – This alternative serves as the preferred alternative and includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions without any decrease in pipe size. Six-inch waterline would be utilized for all areas with 6-inch or smaller diameter waterlines. The waterline along San Andres Street would be replaced with an 8-inch waterline in order to keep capacity the same. C-900 waterline would be used for each replacement.

The waterline extension and waterline replacement components of the proposed action would be gravity-fed with no requirements for additional support from lift stations or booster pump stations. PVC pipe is proposed to be the pipe material for the waterline replacement. PVC is sustainable with a long design life.

The project area is located within Township 26 South, Range 3 East, Sections 26, 27, 35 and 36, as well as unplatted land within the Refugio Colony Land Grant, in Doña Ana County, New Mexico, as shown on the *Anthony, NM*, *La Mesa, NM*, and *La Union, NM* 7.5-minute United States Geological Survey quadrangles. Adjacent land ownership is a combination of municipal, state, and private land owners. All appropriate land owners will be notified as part of the environmental process. The environmental investigations and documentation will be prepared in following with the requirements of the U.S. Environmental Protection Agency.

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Sincerely,

Brad Beacham

Brad Beacham, Project Manager
Epsilon Systems Solutions, Inc.

☑ No significant impact anticipated

☐ Significant impact anticipated due to the following reasons:

E. David Gaughan
Signature

Engineering Aide / CFM
Title

29 September 2015
Date

+U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VI
MITIGATION DIVISION

NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COMMUNITIES' FLOODPLAIN ADMINISTRATORS BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. IF FEDERALLY FUNDED, WE WOULD REQUEST PROJECT TO BE IN COMPLIANCE WITH EO11988 & EO 11990.

REVIEWER:

Mayra G. Diaz
Floodplain Management and Insurance Branch
Mitigation Division
(940) 898-5541

DATE: October 5, 2015

Susana Martinez
Governor

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

September 16, 2015

Brad Beacham
Epsilon Systems Solutions, Inc.
Cultural Resources Manager
ebeacham@epsilonsystems.com

RE: Anthony Water & Sanitation District Waterline and Replacement Project

Dear Mr. Beacham:

Thank you for providing information on the proposed waterline project and an overview map of the project area. I also appreciate the time you spent answering the questions I had concerning the project.

In your emails, you stated that you plan to conduct a historic building inventory for the built environment (approximately 87 buildings) and an archaeological survey for the undeveloped (non-residential) sections of waterline extension and replacement. It is our opinion that the potential for the waterline to cause adverse effects to historic buildings is limited to vibratory effects and it may not be necessary to document all 87 buildings that you plan to document.

To keep costs low, and to focus on buildings that have the most potential to be affected by vibration, we recommend confining the area of potential effects (APE) to 25 feet from the edge of the waterline trench for any parts of the project on private, city or county rights of way. This restricted APE will ensure that historic buildings closest to the waterline trench, and in most danger of vibratory effects, will be documented. You must follow New Mexico Department of Transportation (NMDOT) guidance for any buildings located along NMDOT right of way. The archaeological survey for this project should follow the standards in 4.10.15 NMAC.

Please do not hesitate to contact me if you have any questions. I can be reached by telephone at (505) 827-4064 or by email at michelle.ensey@state.nm.us.

Sincerely,

Michelle M. Ensey
Archaeologist

Log: 102142

USDA

United States Department of Agriculture

October 2, 2015

Mr. Brad Beacham, Project Manager
Epsilon System Solutions, Inc
3010 Mesilla Verde Terrace
Las Cruces, New Mexico 88005

Dear Mr. Beacham:

Thank you for providing the Natural Resources Conservation Service (NRCS) the opportunity to review the proposed AWSD Proposed Waterline Extension Project in Anthony, New Mexico.

The Farmland Protection Policy Act (FPPA) authorizes the NRCS to provide review of proposed projects that have the potential to irreversibly convert farmlands to non-farmland or irreversibly converting hydric areas to non-hydric uses as the result of programs funded by the federal government. In review of the information provided on the project, it is determined that the entire project is located in an urban or development area in an existing easement. The FPPA rules define farmland conversion to be "to the extent that it irreversibly converts farmland to other purposes", this project is not expected to have that effect. With this acknowledged, the proposed project will not cause Prime or Unique Farmlands or hydric soils to be converted to non-agricultural or non-hydric uses, and is not subject to the Act.

If you have any questions concerning soils information, please contact Richard Strait, State Soil Scientist, at (505) 761-4433 or emailat Richard.Strait@nm.usda.gov.

Sincerely,

J. XAVIER MONTOYA
State Conservationist

cc:
Richard Strait, State Soil Scientist, NRCS, Albuquerque, NM

Natural Resources Conservation Service
6200 Jefferson NE, Suite 305, Albuquerque, New Mexico 87109
Voice: (505) 761-4400 Fax: (855) 538-6003
An Equal Opportunity Provider and Employer

ANTHONY WATER & SANITATION DISTRICT
P.O. BOX 1751 • ANTHONY, NEW MEXICO 88021 • (575) 882-3922

RECEIVED NOV 19

RECEIVED
OCT 30 2015
BY:

October 22, 2015

Original: THPO
cc: Gov., Lt. Gov.

Governor Carlos Hisa
Ysleta del Sur Pueblo
117 S. Old Pueblo Road
P.O. Box 17579-Ysleta Station
El Paso, TX 79907

Dear Governor Hisa:

The Anthony Water & Sanitation District (AWSD) is proposing improvements to the water distribution system in the City of Anthony, Doña Ana County, New Mexico. The proposed changes will include the extension and replacement of waterline located on private and municipal lands to be funded through the NMFA Colonias Infrastructure and the NMFA Local Planning Programs. The proposed waterline extension would extend west across the Rio Grande to accept more people into the service area. These areas include locations where property owners are on privately owned water wells which have gone dry due to the drought conditions; this also includes the Gadsden Independent School District. This expansion would continue along New Mexico Highway 225/Washington Street and provide water service to residents and to Gadsden High School before continuing south along New Mexico Highway 28 to provide service to Desert Pride Academy. This expansion would also help with the long term goal of interconnecting with the La Union System to allow for redundancy if an outage occurs in either system. Currently, the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions are experiencing many leaks and unreliable water service due to aging water infrastructure. The existing polyethylene waterlines are in need of replacement to provide reliable water service. The proposed waterline replacements would address these issues within the aforementioned subdivisions. The project area is located within Township 26 South, Range 3 East, Sections 26, 27, 35 and 36, as well as unplatted land within the Refugio Colony Land Grant, in Doña Ana County, New Mexico, as shown on the *Anthony, NM*, *La Mesa, NM*, and *La Union, NM* 7.5-minute United States Geological Survey quadrangles (see attached figure).

To satisfy state and federal regulations, Epsilon Systems Solutions, Inc., was contracted to complete an intensive pedestrian cultural resource survey for the project's area of potential effects (APE). No prehistoric resources were encountered; however, 54 historic buildings, 15 acequias and two historic archaeological sites were documented. Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), AWSD is required to consult with the Ysleta del Sur Pueblo in order to aid in identifying any areas of traditional religious or cultural importance that may fall within the APE. As such, AWSD would like to initiate government-to-government consultation with the Ysleta del Sur Pueblo for this project. Given the cultural

sensitivity of religious locations, they may not be subjected to the same documentation and evaluation as historic or archaeological sites. If religious locations are identified within the proposed project area, the involved parties will work with the Ysleta del Sur Pueblo to avoid and protect the identified location(s) without disclosing any specific information as to the site locations or the nature of the religious activities.

Please indicate by checking one of the boxes below whether the Ysleta del Sur Pueblo has concerns regarding any traditional religious or cultural areas within the proposed project area. Your response will help us determine if further consultation is needed. If we do not hear from you within 30 days of the receipt of this letter, we will assume that the Ysleta del Sur Pueblo has no concerns or comments and we will proceed with the process. Please mail your response to me at the following address: **1155 N 4th St, Anthony, NM 88021.** Thank you for your time and consideration.

Respectfully,

Jose Terrones
Anthony Water & Sanitation District

Enclosure: *Project Area Map*

✓ The Ysleta del Sur Pueblo has determined that the proposed project (described above) in Doña Ana County, New Mexico ***will not*** affect any objects, sites, or locations of traditional religious importance to the Ysleta del Sur Pueblo.

___ The Ysleta del Sur Pueblo has determined that the proposed project (described above) in Doña Ana County, New Mexico ***will*** affect objects, sites, or locations of traditional religious importance to the Ysleta del Sur Pueblo. AWSD should undertake further consultations with the Ysleta del Sur Pueblo in order to evaluate, consider, or avoid such locations.

JAVIER LOERA
Javier Loera (THPO) for — NOV. 3, 2015

Carlos Hisa
Governor

Date

4. **Replacement Alternative 4** – This alternative serves as the preferred alternative and includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions without any decrease in pipe size. Six-inch waterline would be utilized for all areas with 6-inch or smaller diameter waterlines. The waterline along San Andres Street would be replaced with an 8-inch waterline in order to keep capacity the same. C-900 waterline would be used for each replacement.

The waterline extension and waterline replacement components of the proposed action would be gravity-fed with no requirements for additional support from lift stations or booster pump stations. PVC pipe is proposed to be the pipe material for the waterline replacement. PVC is sustainable with a long design life.

The project area is located within Township 26 South, Range 3 East, Sections 26, 27, 35 and 36, as well as unplatted land within the Refugio Colony Land Grant, in Doña Ana County, New Mexico, as shown on the *Anthony, NM, La Mesa, NM,* and *La Union, NM* 7.5-minute United States Geological Survey quadrangles. Adjacent land ownership is a combination of municipal, state, and private land owners. All appropriate land owners will be notified as part of the environmental process. The environmental investigations and documentation will be prepared in following with the requirements of the U.S. Environmental Protection Agency.

In accordance with environmental requirements of 24 CFR part 58 and the National Environmental Policy Act of 1969 (NEPA), the appropriate agencies must be consulted for their comments/review. Your comments can be as simple as checking off the appropriate box below, signing your name or placing your stamp, and mailing/faxing/emailing it back to me: **3010 Mesilla Verde Terrace, Las Cruces, New Mexico 88005, FAX: 505-766-9885, Email: ebeacham@epsilonsystems.com.** Thank you for your time and consideration.
Sincerely,

Brad Beacham

Brad Beacham, Project Manager
Epsilon Systems Solutions, Inc.

☑ No significant impact anticipated

☐ Significant impact anticipated due to the following reasons:

Signature Richard Stewart

Title Regulatory Manager

Sept 21, 2015

Date

4. **Replacement Alternative 4** – This alternative serves as the preferred alternative and includes removal and replacement of all of the waterlines within the Enchanted Hills, Mesa Addition, and Las Familias Subdivisions without any decrease in pipe size. Six-inch waterline would be utilized for all areas with 6-inch or smaller diameter waterlines. The waterline along San Andres Street would be replaced with an 8-inch waterline in order to keep capacity the same. C-900 waterline would be used for each replacement.

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Sincerely,

Brad Beacham

Brad Beacham, Project Manager
Epsilon Systems Solutions, Inc.

□ No significant impact anticipated

□ Significant impact anticipated due to the following reasons:

CULTURAL RESOURCE INVENTORY
REQUIRED
NMDOT, ENVIRONMENTAL SECTION

REVIEWED
By Gary Funkhouser at 11:46 am, Dec 01, 2015

Signature

Title

Date

ENVIRONMENTAL SURVEY
REQUIRED
NMDOT, ENVIRONMENTAL SECTION

Susana Martinez
Governor

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

January 20, 2016

Brad Beacham
Cultural Resources Manager
Epsilon Systems Solutions, Inc.
3010 Mesilla Verde Terrace
Las Cruces, NM 88005

Re: Proposed Water Distribution System Improvements in Anthony, New Mexico

Dear Mr. Beacham:

I am writing in response to your letter regarding the above proposed project and the cultural resource survey report. Thank you for providing the report and the associated recording forms for the archaeological sites, buildings, and acequias that were documented during the survey. I have reviewed the report and the forms and summarize our determinations of eligibility for the cultural resources that were documented and discuss project effects for the resources that were documented.

The report recommends two archaeological sites, LA 183520 and LA 183521, as not eligible for listing in the National Register of Historic Places. Both sites are acequias that were probably constructed in the period from 1946-1955 and were in use until they were abandoned in the period from 1967-1991. The State Historic Preservation Office (SHPO) does not concur with the not eligible recommendation. These two sites should be considered undetermined pending additional consultation and information on agricultural use of the area during the period from 1946-1967.

Fifteen acequias are recommended as being eligible for listing in the National Register. The acequias are either contributing resources to the Elephant Butte Irrigation District or are associated with the District. The SHPO concurs with the recommendation that all 15 acequias are eligible.

During the survey, 54 buildings were documented. Of the 54, one is the Gadsen High School, which is listed on the State Register of Cultural Properties. This building is already considered eligible for listing in the National Register. All of the other buildings are recommended not eligible for listing in the National Register as individual properties; however, 18 could be considered part of a potential historic district that has not been fully documented or evaluated. The SHPO does not concur with the not eligible recommendations. All 53 buildings should be considered undetermined pending additional documentation.

The report recommends that the project will have No Effect on Historic Properties given that the water line will be constructed using jack-and-bore crossings beneath each of the identified eligible acequias. In order to avoid effects to the 18 historic buildings that could be part of a historic district, the report recommends use of low vibratory equipment within 15 meters (50 feet) of historic buildings 10-13, 15, 16, 20, 21, 25, 27, 28, 30, 37, 40, 43, 46, 52, and 54. It is the SHPO's opinion that the effects should be

considered **No Adverse**, provided that the low vibratory equipment is used. Since the two abandoned acequias (LA 183520 and LA 183521) were recommended not eligible, the report did not provide a management recommendation; however, from looking at the report, it appears that they will be avoided. If this is not the case, please contact me and we can determine if there will be effects to the abandoned acequias.

If you have any questions concerning these comments, please do not hesitate to contact me. I can be reached by telephone at (505) 827-4064 or by email at michelle.ensey@state.nm.us.

Sincerely,

Michelle M. Ensey
Archaeologist

Log: 102815

New Mexico
Department of Transportation

INTRA-DEPARTMENTAL CORRESPONDENCE

TO: Maria Hinojos
NMDOT District 1

Date: February 15, 2016

SUBJECT: Anthony, New Mexico Water Distribution System Improvements;
New Mexico Highway 186 (NM 186)/O'Hara Road;
New Mexico Highway 225 (NM 225)/Washington Street;
New Mexico Highway 28 (NM 28);
Township 26 South, Range 3 East, Sections 26, 27, 35 and 36,
and unplatted land within the Refugio Colony Land Grant;
Doña Ana County, New Mexico

Molzen-Corbin & Associates
1155 Commercial Drive, Suite F
Las Cruces, NM 88011

FROM: Gary Funkhouser
NMDOT Environmental Bureau

The NMDOT Environmental Bureau has completed a review of the cultural resource report titled *A Cultural Resource Inventory for Proposed Water Distribution System Improvements in Anthony, Doña Ana County, New Mexico* (NMCRIS 134487) and the biological document titled *A Biological Assessment for Proposed Water Distribution System Improvements in Anthony, Doña County, New Mexico*, both prepared by Epsilon Systems Solutions, Inc. These reports constitute the required environmental documentation for a buried water distribution system be installed, in part, within the rights-of-way of the above referenced New Mexico highways in Anthony, Doña Ana County, NM. The work is being proposed by Molzen-Corbin & Associates.

The NMDOT Environmental Bureau has no concerns with this project and this document constitutes environmental clearance for the project to proceed within NMDOT highway rights- of-way.

Cc: Brad Beacham, Epsilon Systems Solutions, Inc.

State of New Mexico
ENVIRONMENT DEPARTMENT

Office of the Secretary

121 Tijeras Avenue, NE
Albuquerque, NM 87102-3400
Telephone (505) 222-9500 Fax (505) 222-9510
www.env.nm.gov

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

February 29, 2016

Mr. Brad Beacham
Project Manager
Epsilon Systems Solutions, Inc.
3010 Mesilla Verde Terrace
Las Cruces, NM 88005

e-mail: ebeacham@epsilonsystems.com

RE: Water Distribution System Improvements Project EID, Anthony Water & Sanitation District, Doña Ana County, New Mexico
NMED EIR #5316

Mr. Beacham:

The Environmental Information Document (EID) for the Water Distribution System Improvements project for the Anthony Water and Sanitation District, Anthony, Doña Ana County, New Mexico was reviewed and approved by the New Mexico Environment Department (NMED) with the following comments provided by the Air Quality, Drinking Water, Ground Water Quality, Solid Waste, and Surface Water Quality Bureaus.

Air Quality Bureau
The Air Quality Bureau (AQB) comments that this area of Doña Ana County is currently in nonattainment for the particulate matter (PM_{10}) 24-hour National Ambient Air Quality Standard. The nonattainment boundary includes Sections 35 and 36, in Township 26 south, Range 3 east. The AQB has recorded exceedances of the PM_{10} standard every year since 1988 at the Anthony monitoring site.

A Natural Events Action Plan (NEAP) for Doña Ana County has been prepared and approved by the U.S. Environmental Protection Agency. As part of the NEAP, dust control ordinance #194-2000 was adopted by Doña Ana County. In accordance with this ordinance, appropriate dust control measures need to be outlined and approved by the county for any soil disturbing activities and should also be addressed in the environmental documentation.

All asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on

air quality permitting and modeling requirements, please refer to 20.2.72 NMAC. Potential emissions from the diesel generator sets should be calculated assuming continuous operation to determine whether a construction permit is required in accordance with 20.2.72.200.A (1) NMAC.

Although not anticipated, if asbestos containing materials are found, all activities must conform to the Bureau's Asbestos Management Rule, 20.2.78 NMAC. Notice must be submitted to the Bureau before any removal activities may commence. For more information about the Asbestos Management Program call 1-800-224-7009 or (505) 476-4330. Questions may also be submitted by e-mail to nmenv-asbestos@state.nm.us.

This project will temporarily impact air quality as a result of fugitive dust and equipment exhaust emissions generated during construction and will impact air quality in the area. However, with the appropriate dust control measures in place, the increased levels should be minimal. Areas disturbed by the street improvement activities, within and adjacent to the project area should be reclaimed to avoid long-term problems with erosion and fugitive dust.

As a courtesy to the AQB, we request to be notified when the project is anticipated to take place. With the appropriate control measures in place, this project is not anticipated to contribute to nonattainment of the New Mexico or National Ambient Air Quality Standards or contribute negatively to air quality on a long-term basis.

Drinking Water Bureau
The Drinking Water Bureau provides comment that the project includes service to residents previously served by private wells. The water system must ensure that there is no physical connection between private wells and the municipal drinking water supply. Closed valves or backflow prevention devices are not adequate separation between the water system and the private wells. The line from the private well to the house must be cut and capped.

There is an underground storage tank, Boone Transportation, at NM 225 just west of Boone Circle. Also, Gadsden Independent School District has an NPDES Permit near NM 225 and the Rio Grande.

Construction should be completed in accordance with the New Mexico Environment Department Recommended Standards for Water Facilities,
https://www.env.nm.gov/cpb/documents/RecommendedStandardsforWaterFacilities.pdf
incorporated into the drinking water regulations,
http://164.64.110.239/nmac/parts/title20/20.007.0010.pdf

Surface crossings are to be made in accordance with Item 8.8; separation between utilities should conform to Item 8.7; disinfection and other aspects of the installation are to conform to Item 8.6.

Groundwater Quality Control Bureau
Ground Water Quality Bureau (GWQB) staff reviewed the above-referenced project focusing specifically on the potential effect to ground water resources in the area.

The project is not expected to have any adverse impacts on ground water quality in the area of construction. However, implementation of the project may involve the use of heavy equipment thereby leading to a possibility of contaminant releases (e.g., fuel, hydraulic fluid, etc.) associated with equipment malfunctions. The GWQB advises all parties involved in the project to be aware of notification requirements for accidental discharges contained in 20.6.2.1203 NMAC. Compliance with the notification and response requirements will further ensure the protection of ground water quality in the vicinity of the project.

A copy of the Water Quality Control Commission Regulations, 20.6.2 NMAC, is available at http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm

Solid Waste Bureau
The Solid Waste Bureau provides comment that excavation or maintenance sometimes results in the knowing or inadvertent generation of regulated asbestos waste as there is the potential to excavate or otherwise impact asbestos cement pipes (sewer, water, or conduit). Suspect pipes, fragments or soils contaminated with related fragments or fines shall be sampled and analyzed by Polarized Light Microscopy ("PLM") to determine if the material contains greater than one percent (1%) asbestos. If so, the pipes, fragments, and/or contaminated soils require management as regulated asbestos waste, in accordance with the New Mexico Solid Waste Rules, 20.9.2-10 NMAC, including proper containerization, labeling, manifesting, transport by an approved commercial hauler, and disposal at a permitted solid waste facility.

The Solid Waste Bureau (SWB) provides comment to responsible parties that any excavated solid waste, including any special waste such as regulated asbestos waste, must be properly managed, containerized, transported and disposed in accordance with the New Mexico Solid Waste Rules 20.9.2 – 20.9.10 NMAC. Upon discovery of any single area requiring excavation of more than 120 cubic yards of solid waste, excavation shall cease and a Waste Excavation Plan in accordance with 20.9.2.10(A)(15) NMAC shall be prepared and submitted to the SWB for review and approval prior to continuing with excavation operations.

Surface Water Quality Bureau
The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of development. The total area of disturbed soil for the roadway and the area where the material removed is placed are included in total disturbed soil footprint.

Prior to discharging storm water, construction operators must obtain coverage under an NPDES permit. Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This

permit also requires that permanent stabilization measures (re-vegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

Part 9 of the 2012 CGP includes permit conditions applicable to specific states, Indian country lands, or territories. In the State of New Mexico, except on tribal land, permittees must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1.1 of the 2012 CGP).

USEPA requires that all "operators" (see Appendix A of the 2012 CGP) obtain NPDES permit coverage by submitting a Notice of Intent (NOI) for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the SWPPP and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective February 16, 2012. The CGP, NOI, deadlines for submitting an NOI, Fact Sheet, and Federal Register notice is available at:
http://cfpub.epa.gov/npdes/stormwater/cgp.cfm

If you have any questions please contact me at (505) 222-9552 or by email at thomas.skibitski@state.nm.us

Sincerely,

Thomas Skibitski

Environmental Impact Review Coordinator
NMED File Number: EIR #5316

e-mail: ebeacham@epsilonsystems.com

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Appendix D

Public Involvement

AGENDA

for the

PUBLIC MEETING

MOLZENCORBIN
ENGINEERS | ARCHITECTS | PLANNERS

Anthony Water & Sanitation District Water Distribution System Improvements Project

Anthony, Doña Ana County, New Mexico

Wednesday, Novemeber 18, 2015

Open House

6:00 p.m.

Presentation

6:30 pm

Introduction – Jose Terrones, AWSD Superintendent

Project Overview – Wyatt Kartchner, Molzen Corbin

- **Purpose and Need**
- **Alternatives**
- **Project Schedule**

Environmental Process – Brad Beacham, Epsilon Systems Solutions, Inc.

Public Comments

Comments, Questions and Answers

For further information or assistance please contact Brad Beacham at (575) 528-8197

Public Meeting Minutes

Anthony Water & Sanitation District

Water Distribution System Improvements Project

Date: November 18, 2015

Time: 6:00 pm to 7:00 pm

Location: Anthony Water & Sanitation District Office

Presenters: Wyatt Kartchner - Molzen Corbin
Jonah Ruybalid – Molzen Corbin

Brad Beacham - Epsilon Systems

Magdalena Giron – Interpreter

Attendees: Charles Trujillo

Victor Montoya

Loren Schoonover

Veronica Rodriquez

Meeting Summary

Open House (6:00 pm to 6:30 pm):

Members of the public browsed placards of the project design plans, signed in, and were provided with the meeting agenda, comment sheets, and a meeting survey.

Presentation (6:30 pm to 7:00 pm)

Introduction & Project Overview

Wyatt Kartchner of Molzen Corbin provided a project introduction identifying the project's sponsor, funding sources, engineer and environmental consultant. He continued the presentation with a project overview beginning with the existing conditions of the wastewater system and the current project purpose and need. Jonah Ruybalid of Molzen Corbin provided a detailed explanation of the design alternatives as well as a summary of the selection and scoring matrix relative to each alternative and the recommended design alternatives. The project overview continued with a summary of the project costs, concluding with a review of the project schedule presented by Mr. Kartchner.

Environmental Review Process

Brad Beacham of Epsilon Systems Solutions presented a brief explanation of the environmental review process as prescribed by the National Environmental Policy Act. Mr. Beacham continued with a summary of compliance efforts completed to date, concluding with a request for public input.

Comments & Questions

- **Question:** How many proposed tanks would be built?
  Answer: Only one tank would be built, based on the preferred alternative.

- **Q:** Would trenching of the Rio Grande occur in the off season (winter)?
  A: The recommended alternative for the river crossing includes directional boring as opposed to trenching. This alternative avoids certain issues and should help to expedite the project.

- **Q:** What permits are necessary?
  A: The project will require permits form EBID, NMDOT in addition to easements with private land owners.

- **Q:** People want to know what is planned for future sewer development [in Anthony]?

A: While the current project does not include wastewater, Molzen Corbin is working on a different PER addressing the wastewater system in Anthony. The design will allow the system to work more efficiently and cost effectively by eliminating four to five lift stations. Some efforts are already underway, such as the Sonic Lift Station that is should be constructed in the summer of 2016.

- **Q:** What is the proposed cost of the wastewater project?
  A: Not sure of the exact cost at this time.

- **Q:** How did you come up with your 2035 growth projections for Anthony?
  A: Molzen Corbin made use of a variety of sources in order to model population growth. We made use of census data, but also employed other data sources in acknowledgement of the fact that the census data is subject to under reporting in Anthony.

- **Comment:** We are aware that the census data is skewed due to under reporting. The community reported this following the 2010 census and is working to get better community participation.

Comment Sheet

(***Please submit your comments by December 2, 2015***)

Public Information Meeting

Wednesday, November 18, 2015

Anthony Water & Sanitation District Water

Distribution System Improvements Project

Anthony, Doña Ana County, New Mexico

_____

_____

_____

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_____

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_____

_____

_____

Mail To:

Epsilon Systems Solutions, Inc.
Attn: Brad Beacham
3010 Mesilla Verde Ter
Las Cruces, NM 88005

(575) 528-8197
E-mail To:ebeacham@epsilonsystems.com

(Please Print)

Your Name: _____
Address: _____
_____
_____
Phone: _____

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