



CERTIFICATION PROPOSAL

**WATER DISTRIBUTION SYSTEM IMPROVEMENTS IN
ANTHONY, NEW MEXICO**

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EXECUTIVE SUMMARY

WATER DISTRIBUTION SYSTEM IMPROVEMENTS IN ANTHONY, NEW MEXICO

Project Summary

Project Name:	Water Distribution System Improvements in Anthony, New Mexico
Sector (Project Type):	Water
Objective:	Improve access to sustainable drinking water supplies by replacing failing water distribution infrastructure prone to leaks and line breaks, thus preventing excessive water losses, service interruptions and potential cross-contamination of drinking water and the risk of waterborne diseases.
Expected Outcomes:	<ul style="list-style-type: none">• Improve water distribution infrastructure and services for up to 546 existing residential connections, benefitting approximately 1,795 residents.• Improve water resource management by preventing water losses from the distribution system, with the goal of reducing real water losses to less than 20% of water produced.• Maintain drinking water quality as demonstrated by compliance with regulatory requirements.
Population to Benefit:	1,795.
Sponsor:	Anthony Water and Sanitation District (AWSD).
Project Cost:	US\$4,996,000.

Financial Summary

Program:	Border Environment Infrastructure Fund (BEIF).
Grant Amount:	US\$4,800,000.
Percentage of Project Cost:	96.0%.
Recipient:	AWSD.
Other Funding Sources:	US\$200,000 from AWSD, representing 4.0% of the total project cost.

CERTIFICATION PROPOSAL

WATER DISTRIBUTION SYSTEM IMPROVEMENTS IN ANTHONY, NEW MEXICO

1. PROJECT OVERVIEW AND EXPECTED OUTCOMES

The proposed project will rehabilitate nearly 23,000 linear feet of deteriorated water distribution lines in Anthony, New Mexico (the “Project”). The Project sponsor is the local water utility, Anthony Water and Sanitation District (AWSD). The purpose of the Project is to ensure reliable drinking water services for 546 existing residential connections by reducing the risk of leaks and line breaks, thus preventing excessive water losses, service disruptions and potential cross-contamination problems that increase the risk of waterborne diseases.

An estimated 1,795 residents in Anthony are expected to benefit from this Project.¹

2. ELIGIBILITY

2.1. Project Type

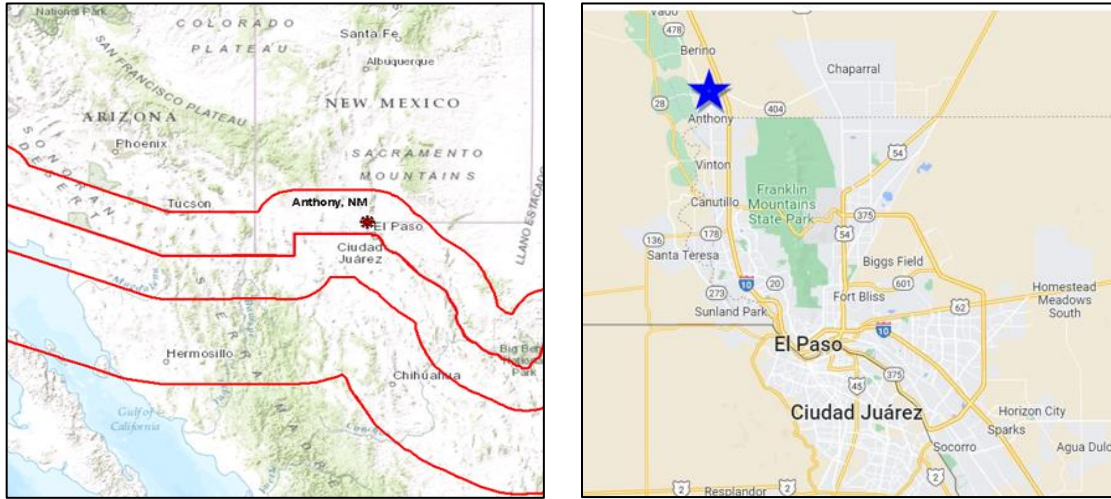
The Project falls within the eligible sector of water.

2.2. Project Location

The city of Anthony, New Mexico, is located on the New Mexico-Texas state line across from Anthony, Texas, approximately 20 miles north of downtown El Paso, Texas, and 15 miles from the U.S.-Mexico border. The Project area is centered around the following coordinates: latitude 32°00'17"N and longitude 106°35'27"W. Figure 1 shows the location of Anthony, NM.

¹ The estimated population benefitted is calculated based on 546 improved connections in the Project area and 3.17 persons per household as reported by the U.S. Census Bureau, QuickFacts July 2021, accessed on July 18, 2022. <https://www.census.gov/quickfacts/anthonycitynewmexico>.

Figure 1
PROJECT LOCATION MAP



2.3. Project Sponsor and Legal Authority

The Project sponsor is AWSD, a public utility that provides water and wastewater services to the city of Anthony, as well as some nearby unincorporated areas. AWSD has the right to provide these services as granted under Chapter 3, Article 23 Public Utilities, § 3-23-1 through § 3-23-10, of the New Mexico Statutes.

3. CERTIFICATION CRITERIA

3.1. Technical Criteria

3.1.1. General Community Profile

The Project is expected to benefit residents in Anthony, New Mexico. As reported by the U.S. Census Bureau, in July 2021, Anthony had a population of just over 8,660, which represented approximately 4.1% of the state population. The 2020 census data indicate that Anthony's population has declined since 2010, when its population was 9,360 residents.

Anthony is an economically distressed community, with approximately 46.8% of its population living below the poverty level compared to a statewide average of 18.2%. According to census data, the median household income (MHI) in Anthony is US\$23,948, while the state MHI is estimated at US\$51,945.

The Project will rehabilitate the waterlines in the Kaylar and Timbers subdivisions, two of the oldest sections of the distribution system. These areas serve 546 residential connections, representing a population of 1,795 people.

The following table summarizes the status of public services and infrastructure in the AWSD service area.

Table 1
BASIC PUBLIC SERVICES AND INFRASTRUCTURE IN AWSD

Water System			
Coverage	80%		
Supply source	Four active wells in the Mesilla Bolson Aquifer		
Number of connections	2,865		
Wastewater Collection			
Coverage	71%		
Number of connections	2,559		
Wastewater Treatment			
Coverage	100% of collected wastewater		
Treatment facilities	Plant	Type	Capacity
	Anthony	Concentric sequencing reactor	0.8 mgd

Source: AWSD, 2022.
 mgd = millions of gallons a day

Local Water and Wastewater System

AWSD operates the water and wastewater systems in the city of Anthony and surrounding areas in Doña Ana County. The number of customers receiving services from AWSD has been increasing steadily for several years, but the growth is primarily driven by extending its service boundaries outside of the city limits rather than population growth within the city. AWSD currently provides water and wastewater services to 2,865 and 2,559 residential customers, respectively.

The main components of the AWSD water system include four active wells, several miles of distribution lines, a reverse osmosis arsenic removal system and two one-million-gallon water storage tanks. Its wastewater system consists of several miles of gravity lines and force mains, nine lift stations and a wastewater treatment plant. In 2022, the utility treated 0.8 million gallons a day (mgd) of wastewater.

Some of AWSD’s infrastructure dates to the 1950’s, and many components, including portions of the water distribution system, have reached the end of their service life, are unreliable and need to be replaced. A water audit completed in December 2019 determined that the AWSD system was losing close to 30% of its water production due to leakage, primarily because of line breaks. Using service records to map the frequency of line breaks, the water audit determined that two of the oldest areas in the distribution system had the highest concentration of breaks. In those areas most of the lines were constructed with 2-inch diameter pipes, which are undersized by current standards. Moreover, many of the lines are located in alleyways and are not easily accessible due to vegetation, sheds and other obstacles that have accumulated over time.

In addition to excessive water losses and service disruptions, line breaks can lead to cross-contamination issues that increase the risk of waterborne diseases. The proposed Project will address the deficiencies in the water distribution system. For these reasons, the Project was prioritized for funding through the U.S.-Mexico Border Water Infrastructure Program of the U.S. Environmental Protection Agency (EPA).

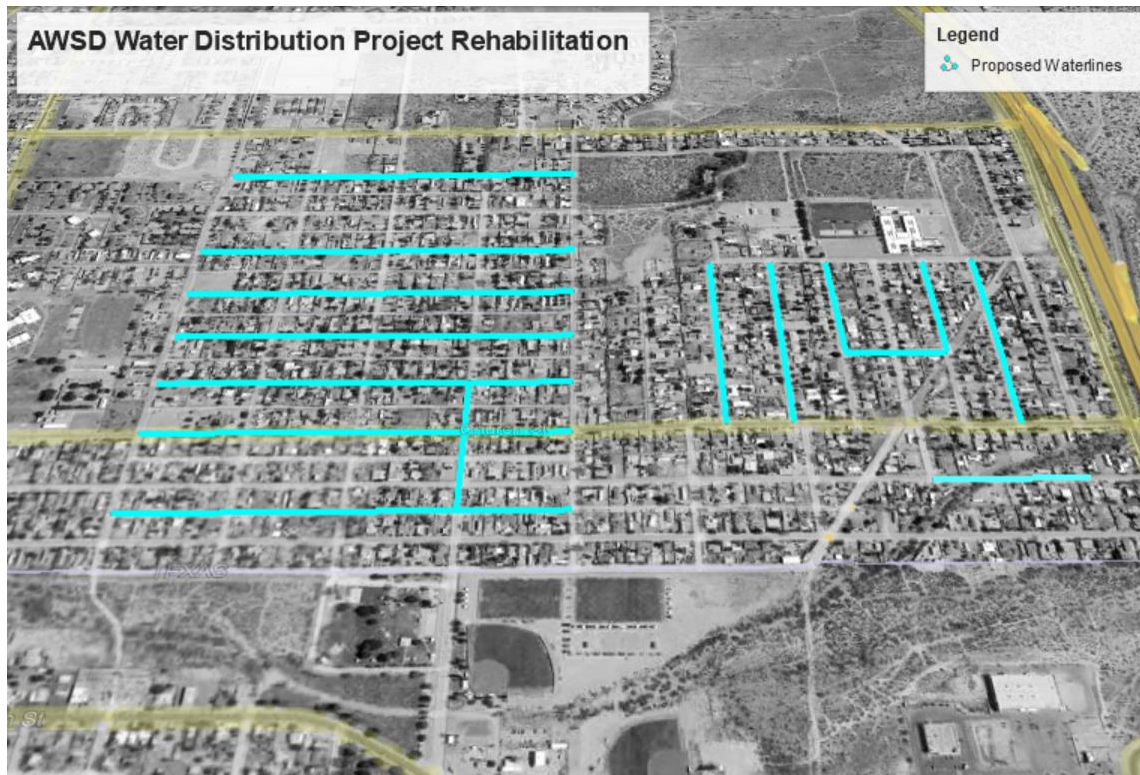
3.1.2. Project Scope

The Project consists of rehabilitating about 23,000 linear feet (LF) of deteriorated pipeline in the water distribution system, as follows:

- *Kaylar Subdivision*: Install 16,200 LF of 6-inch polyvinyl chloride (PVC) pipe and 394 connections
- *Timbers Subdivision*: Install 6,800 LF of 6-inch PVC pipe and 152 connections

The rehabilitation project will replace 2-, 3-, and 4-inch waterlines, including asbestos concrete pipe. Existing lines in alleyways will be abandoned, and new lines will be constructed in the street right-of-way. The turquoise lines in Figure 2 show the streets where the water distribution system will be rehabilitated.

Figure 2
LOCATION OF WATER DISTRIBUTION REHABILITATION OF THE PROJECT



3.1.3. Technical Feasibility

The final design for the rehabilitation of the waterlines meets or exceeds the design criteria established by the Ten State Standards for water systems, which are followed in the state of New Mexico.² The design criteria provide specifications for the construction of water systems, including materials to be used, pipe diameters, placement of fire hydrants and gate valves, operational pressures and flow velocities. The final design documents were reviewed by EPA and NADBank.

The rehabilitated water system will be constructed using 6-inch diameter PVC pipe and will be completely looped. PVC pipe is commonly used in water systems in the U.S. due to its proven reliability and durability. Modeling of the proposed water system has shown that the anticipated water pressure will be between 60 and 90 psi, which is within the operational range recommended under the Ten State Standards. In cases where the existing waterlines are in an alleyway, the new lines will be relocated to the street for improved accessibility. The area being rehabilitated is completely built out, and it is unlikely to see a significant increase in demand in the future.

3.1.4. Land Acquisition and Right-of-Way Requirements

This Project will be constructed within public rights of way, which are owned and maintained by the City of Anthony. AWSD will not require a permit to work within the City's rights of way. No additional land or right of way is required.

3.1.5. Project Milestones

Once the notice to proceed is issued for construction, the work is expected to take approximately nine months to complete. Potential factors that could affect the Project completion timeline include weather-related delays; unanticipated subsurface issues, such as consolidated rock or utility conflicts; and the availability of construction materials. Recent projects have had significant delays related to supply chain issues and the availability of constructions materials.

Table 2 provides a summary of the critical Project milestones and their respective status.

² The "Ten States Standards" is a common reference for the following: *Recommended Standards for Water Works, 2012 Edition, Policies for the Review and Approval of Plans and Specifications for Public Water Supplies*, a report of the Water Supply Committee of the Great Lakes--Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

Table 2
PROJECT MILESTONES

Key Milestones	Status
Environmental clearance – U.S.	Completed December 16, 2020
Final designs	Completed June 20, 2022
Procurement	Anticipated in the 1st quarter of 2023
Construction start-up	Anticipated in the 2nd quarter of 2023
Construction period (BEIF portion)	Estimated period of 9 months

Construction permits will be the responsibility of the contractor and are considered a construction task.

3.1.6. Management and Operations

Management and operation of the proposed Project will be the responsibility of AWSD, which currently serves 2,865 water hookups and 2,559 wastewater connections. AWSD employs eight operators and two apprentices, who are cross-trained to work on both water and wastewater systems.

In accordance with New Mexico regulations, the water distribution system to be rehabilitated under this Project requires Level I certification for its operation. AWSD has six operators with certifications exceeding this requirement, including three operators with Level IV certification, the highest level of operator certification.

Six AWSD operators also have certifications for the wastewater system, including one Level IV operator. The remaining operators are Level I and II. Additionally, AWSD has an active training program and pays bonuses to its operators to advance their training. The utility has operations and maintenance procedures in place to ensure system reliability and sustainability.

AWSD has developed a capital improvements plan that includes both water and wastewater projects. The utility has an excellent track record of guiding projects through development and construction, securing funds from multiple sources, and maintaining its infrastructure and systems. The utility has worked with NADBank previously to develop water and wastewater infrastructure projects. The current Project is necessary because the water distribution infrastructure was built more than 50 years ago. No notices of non-compliance related to the water system have been issued.

Additionally, AWSD runs the Desert Aire Mutual Domestic Water and Sewer Works Association in Chaparral, New Mexico, and provides other small utilities in the region with technical expertise and certified operator support as needed.

3.2. Environmental Criteria

3.2.1. Environmental and Health Effects/Impacts

A. Existing Conditions

A water audit verified that real water losses are a significant issue for the AWSD distribution system. AWSD loses nearly a third of the water it produces, and a significant portion of those losses have been attributed to line breaks. In addition to disrupting service and being an operations and maintenance issue, line breaks create pathways for potential contaminants to enter the water system, such as pathogenic protozoan found in unsafe water supplies. AWSD has been able to respond to issues quickly to avoid violations or boil alerts; however, these efforts have been a temporary and costly fix.

An individual may become ill after drinking water that has been contaminated with pathogenic microorganisms, eating uncooked foods that have been in contact with contaminated water, or through poor hygiene habits that contribute to the dissemination of diseases by direct or indirect human contact. Table 3 shows waterborne disease statistics for the state of New Mexico.

Table 3
WATERBORNE DISEASE STATISTICS FOR NEW MEXICO

Disease	No. of Cases				
	2017	2018	2019	2020	2021
Intestinal amoebiasis	0	0	0	1	0
Campylobacteriosis	764	594	675	621	646
Cryptosporidiosis	120	84	79	84	66
Shigellosis	127	63	125	53	122
Giardiasis	80	59	67	77	38

Source: New Mexico Department of Health, Electronic Disease Surveillance System, infectious disease reports, accessed 2022 (<https://www.nmhealth.org/data/all/>).

Waterborne disease statistics specific to Doña Ana County or Anthony are not available in the New Mexico health reporting system.

B. Project Impacts

The Project will improve the reliability and sustainability of AWSD's drinking water service, as well as reduce the human health risks associated with waterborne diseases. Specifically, the project will:

- Improve water distribution infrastructure and services for 546 existing residential hookups, benefiting approximately 1,795 residents.
- Improve water resource management by preventing water losses from the distribution system, with the goal of reducing real water losses to less than 20% of water produced.

- Maintain drinking water quality as demonstrated by compliance with regulatory requirements.

Additionally, the new pipelines will improve system capacity to maintain and balance pressure and provide adequate flows for fire suppression.

C. Transboundary Impacts

No negative transboundary impacts are anticipated from the Project. Eliminating water losses will reduce demand on the aquifer, which is a shared water source for the tri-regional area including El Paso County, Texas; Dona Ana County, New Mexico; and the municipality of Juarez, Chihuahua, Mexico.

3.2.2. Compliance with Applicable Environmental Laws and Regulations

The Project will comply with the Safe Drinking Water Act (SDWA), which regulates public water systems in the United States. In accordance with the SDWA, EPA establishes standards for allowable limits of contaminants in drinking water, as well as for pressure and fire flow standards. The requirements established by EPA are monitored and enforced by the New Mexico Environment Department, Drinking Water Bureau.

A. Environmental Clearance

During the project planning phase, an Environment Information Document (EID) was completed in March 2016. The EID addresses potential environmental impacts resulting from the implementation of the Project. Since the Project will be providing essential services within an already disturbed area, EPA determined that it is eligible for a Categorical Exclusion (CatEx). After a 14-day public comment period, EPA issued a CatEx resolution on December 16, 2020, establishing that the Project will not result in any significant negative impacts to the environment. Project construction must be initiated within five years of issuance.

B. Mitigation Measures

Although Project implementation will not have significant adverse impacts on the environment, mitigation measures have been established to address temporary and minor adverse impacts during construction and operation of the Project. Potential transitory impacts, as described in the EID, include:

- The local air basin may be temporarily impacted by carbon monoxide, nitrogen oxides and sulfur dioxide emissions due to vehicles and equipment used during construction.
- A temporary increase in soil erosion and particulate matter emissions may be experienced due to construction.
- Surface water resources could be temporarily impacted by stormwater runoff during the construction phase.
- Hazardous waste—such as construction debris, used oil, etc.— may be generated during the construction and operation phases.

- Noise levels may be elevated during construction activities.
- Temporary roadway blockages, as well as the presence of workers in the area.

The mitigation measures to be implemented include typical best management practices for construction works, such as applying water to reduce dust and soil erosion; routine vehicle tune-ups to reduce emissions and noise; and placement of warning signs.

The EID also notes that asbestos concrete pipe is likely to be encountered during Project construction. Hazards related to the asbestos pipe are also temporary. Construction documents will require the contractor to follow the rules set by the New Mexico Solid Waste Bureau and the National Emissions Standards for Hazardous Air Pollutants.

By following the best management practices described in the EID, the temporary impacts due to construction will be minimized. Moreover, the long-term results from the implementation of the proposed Project will be positive overall.

C. Pending Environmental Tasks and Authorizations

There are no environmental authorizations pending.

3.3 Financial Criteria

The total estimated cost of the Project is \$5.0 million which includes construction costs, supervision, taxes, and contingencies. The final cost estimate was provided by the design engineer in September 2022 and was compared to recently bid projects to verify its consistency with market conditions.

The Sponsor requested a BEIF grant to support the implementation of the Project and improve the affordability of the investment. Based on a thorough analysis of both the Project and the Sponsor, NADBank is recommending that EPA approve a BEIF grant for up to \$4,800,000 for its construction. Table 4 presents a breakdown of total Project costs and the proposed sources of funding.

Table 4
PROJECT INVESTMENT & FINANCING PLAN
 (USD)

Uses		Amount	%
Construction		\$ 4,400,000	88.0
Supervision and contingencies		600,000	12.0
TOTAL		\$ 5,000,000	100.0
Sources	Instrument	Amount	%
NADBank-BEIF	EPA grant	\$ 4,800,000	96.0
AWSD	Equity	200,000	4.0
TOTAL		\$ 5,000,000	100.0

When determining BEIF assistance for projects, BEIF program guidelines require a loan component, when feasible, to finance part of the project. The loan component amount is subject to the sponsor's ability to support the project through user fees, other specific project revenue and/or funds available from state or local sources. In addition, the analysis considers the overall capital investment plan for the utility and the demand it will place on the financial capacity of the project sponsor. Based on the financial analysis performed by NADBank, EPA agreed to waive the loan requirement for this Project.

4. PUBLIC ACCESS TO INFORMATION

4.1. Public Consultation

NADBank published the draft certification proposal for a 30-day public comment period beginning December 14, 2022. The following Project documentation is available upon request:

- Preliminary Engineering Report, AWSD Water Distribution System, March 2016.
- Environmental Information Document, Water Distribution System Improvements, Anthony Water and Sanitation District, Anthony, Doña Ana County, NM, March 2016.
- Categorical Exclusion for the Anthony Water and Sanitation District Drinking Water System Project, December 16, 2020.

The 30-day public comment period ended on January 13, 2023, with no comments received.

4.2. Outreach Activities

Extensive outreach efforts were made by AWSD to publicize the Project to gain and measure the support of residents in the Project area. In accordance with the requirements of the BEIF program, outreach activities included the establishment of a local steering committee, public meetings and access to appropriate project information, as described in the Public Participation Plan.

The Local Steering Committee was established on November 15, 2019 and included members of the community and utility staff. The steering committee developed the Public Participation Plan and met periodically with the Project team to help AWSD disseminate information regarding the Project through public meetings and information posted at AWSD's offices. Project information included the Project scope, benefits, anticipated construction costs and the anticipated financial structure.

Prior to Project selection for BEIF funding, AWSD held a public meeting on November 18, 2015, to support the March 2016 EID for funding from the U.S. Department of Agriculture (USDA). At the meeting, AWSD presented the comprehensive water needs for the community

identified in the 2015 planning effort. USDA funded a portion of the capital investment needs but was not able to address all the deficiencies in the water system.

NADBank selected the Project in June 2018 and further defined the remaining infrastructure needs with a water audit. Because of social-distancing restrictions during the COVID-19 pandemic, the previous meeting conducted for the EID was accepted in support of the BEIF application. Additionally, the Project has been discussed frequently in AWSD's Board meetings. A second public meeting was held on January 17, 2023.

A media search conducted to gauge public awareness of the Project, as well as to detect any possible opposition from the community concerning the proposed investment, did not identify any articles regarding the Project or sponsor.

The Project Sponsor also informed NADBank that no comments expressing concern about the Project have been received during the public outreach process, to date. The results of the second public meeting and public comment period will be included in the final Project proposal.

5. RECOMMENDATION

Certification Criteria Compliance

The Project falls within the eligible sector of water and is located in the border region, as required under NADBank Charter. The 30-day public comment period ended on January 13, 2023, with no comments received. The Project review performed by the NADBank Chief Environmental Officer confirms that the Project complies with all the certification requirements, and there are no pending activities required for compliance.

Funding Criteria Compliance

The Project Sponsor applied for funding through the U.S.-Mexico Border Program prioritization process and was selected for technical assistance through the Project Development Assistance Program (PDAP) and construction assistance through the Border Environment Infrastructure Fund (BEIF). The Project meets all BEIF program criteria and is expected to be approved by EPA to receive a BEIF grant for up to US\$4,800,000 for its construction.

Accordingly, based on the foregoing conclusions as supported and presented in detail in this certification proposal, NADBank hereby recommends the certification of the Project.