

# **Environmental Finance Center Network The University of New Mexico - Region 6 1998 Annual Report**

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## **ANNUAL REPORT 1998**

**Environmental Finance Center  
The University of New Mexico  
U.S. EPA Region 6**

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## [EXECUTIVE OVERVIEW](#)

### **Mission Statement**

*To promote and facilitate effective and efficient environmental infrastructure through innovative financial and engineering techniques.*

Established as the first EFC in 1992 at the New Mexico Engineering Research Institute, the University of New Mexico Environmental Finance Center (EFC) promotes innovative environmental financing techniques by blending the disciplines of environmental engineering and finance. Serving USEPA Region 6, the EFC facilitates efficient environmental infrastructure through innovative and alternative engineering techniques and provides state and local officials with education and training, advisory services, publications, and analyses of financing trends and techniques. The EFC documents and disseminates information about innovative and cost-effective environmental financing alternatives and disseminates information on cost-effective management techniques, such as, public-private partnerships and internal optimization. The EFC initially began with an emphasis on the application of public-private partnerships, particularly public

water and wastewater utility systems. With the anticipation of NAFTA, the EFC expanded its technical assistance to border communities on ways to reduce costs for basic sanitary and public health services. Additionally, the EFC researched financing alternatives for environmental infrastructure along the US-Mexico Border, which later served as a guide to feasible choices for public policy decision making. The EFC field-tested a water and wastewater rate model with several New Mexico communities during 1995. Training in the use of the rate model is a mainstay of the EFC's financial outreach program throughout Region 6 states. Current efforts primarily focus on assistance to state agencies with the capacity development requirements (technical, financial, and managerial) of the Safe Drinking Water Act, specifically as they relate to federal, state, tribal, and local governments and public and private small water systems. New efforts include assisting residents in northern New Mexico in developing a Unified Source Water Protection Plan, a pilot project initiative with EPA and USDA Rural Utilities Service. Identifying affordable and viable financing options and promoting low-cost, alternative, and appropriate technologies for system capacity projects is an ever present goal of the EFC. The EFC is making information available on the World Wide Web at <http://nmeri.unm.edu/efc/efc.htm>

### **EFC Expertise and Organizational Structure**

Located at the University of New Mexico Research and Technology Park, the University of New Mexico Environmental Finance Center is a division of the New Mexico Engineering Research Institute (NMERI) and serves the US Environmental Protection Agency's Region 6 states. The EFC director is a registered Professional Engineer in the states of New Mexico and Pennsylvania and holds a master's degree in environmental engineering. Educational backgrounds of the staff include master degrees in environmental engineering, water resources administration, and community planning / public administration. The EFC also employs five graduate students in the areas of engineering, planning, and business administration and one engineering undergraduate.

Since its inception in the 1960s, NMERI, a multi-disciplinary research and development extension of the UNM School of Engineering has continued its research, development, and education services both locally and abroad. Serving the needs of both the private and public sectors, NMERI focuses strategic research efforts in the areas of sustainable development; global environmental technology; fire science; and non-conventional energy systems. Additional capabilities and expertise are available to the EFC through close working relationships maintained with UNM faculty, staff, and graduate students from the Schools of Architecture and Planning, Engineering, Law, and Public Administration; the Institute for Public Policy, the Latin American Institute; the Bureau of Economic and Business Research; the Earth Data Analysis Center; and the Water Resources Administration Program.

### **COMPLETED INITIATIVES**

#### ***Capacity Development - Increasing Drinking Water Viability August 1996 - December 1998***

The EFC has been involved in several projects in the last four years relating to assessing and increasing the capacity of small drinking water systems. In addition to capacity development projects, the EFC staff continues to serve as technical staff to the New Mexico Drinking Water Advisory Group.

The EFC completed a capacity development project, "Increasing Drinking Water Viability In New Mexico," which expanded from New Mexico to all the states within Region 6 during the its project duration. This Assistance Agreement had three main components:

- Section 1: New Mexico Capacity Development Strategy
- Section 2: Rate Model Workshops and Demonstrations

### Section 3: Meetings with Region 6 States (Clearinghouse and Outreach).

#### Section 1: New Mexico Capacity Development Strategy

The EFC worked closely with the New Mexico Environment Department (NMED) in support of the changes that resulted from the 1996 Amendments to the Safe Drinking Water Act (SDWA). The EFC supported the NMED through discussions, meetings, and informal outreach concerning the impact of the SDWA amendments. Throughout 1997 and 1998, the EFC director and staff served as technical staff to the New Mexico Safe Drinking Water Advisory Group (and continues to serve under the new capacity development contract). The EFC hosted a public meeting for NMED on the New Mexico Safe Drinking Water Program and State Revolving Loan fund. The agenda included presentations on the Overview of the Safe Drinking Water Program in New Mexico, the Intended Use Plan, funding for Set-Asides, and the Priority List. Information was also presented on the State Revolving Loan Fund, how the New Mexico Finance Authority and the Environment Department will work together, the leveraging plan, application process, and the affordability criteria for Disadvantaged Communities. The EFC Director presented the process used to complete the Texas Natural Resource Conservation Commission (TNRCC) Capacity Development Strategy and the specifics of the strategy.

#### Section 2: Rate Model Workshops and Demonstrations

The EFC demonstrated the utility of RateMod Pro<sup>®</sup> 1/2, a water/wastewater utility rate setting software program, through several day-long training sessions. Strategic planning and an in-depth discussion regarding how the model can be used to meet the needs of the state regulatory and funding agencies was also part of the day

The EFC presented ways in which the EFC could assist agencies with RateMod Pro<sup>®</sup> 1/2. The use of the model was demonstrated on two levels: for water and wastewater utility operators, managers, and owners; and, for regulatory funding. For a more detailed description of rate setting using RateMod Pro, please refer to *Water Utility Rate Model Presentations and Training Demonstrations*

In conjunction with the Colorado and New Mexico Rural Water Associations, EFC staff presented information on utility rate setting and the use of RateMod Pro to set rates. New Mexico participants received training credits toward New Mexico Utility Operator Certification requirements. Training workshops included the following agencies:

- Colorado Rural Water Association (CRWA) in Colorado Springs, CO
- New Mexico Rural Water Association in Tucumcari, NM
- New Mexico Rural Water Association in Socorro, NM
- Mesa Antero Water Association (CO) at NMERI
- Eldorado Water System (NM) at NMERI

#### Section 3: Capacity Development Clearinghouse and Outreach

One of the initial activities of this award was a review of existing and on-going capacity development efforts in other states. Contact with other states was maintained throughout the duration of the award regarding capacity development efforts throughout the nation. This allowed the EFC to share information regarding those programs with Region 6 states and to present information regarding other successes and failures. The EFC still maintains this capacity development information to serve as a Clearinghouse for Region 6 states. In addition, the EFC attended meetings and conferences related to capacity development efforts in New Mexico, other states within EPA Region 6, other states outside of EPA Region 6, and national initiatives. This attendance has enhanced the EFC's ability to act as a resource for EPA Region 6 states and to EPA Region 6 itself.

The EFC director worked with EPA Region 6 representatives to develop a Capacity Development Assistance Program for Arkansas, Louisiana, and Oklahoma. The EFC met with agency representatives from these states to present the capacity development efforts of New Mexico and Texas. They discussed EPA requirements, requirements for EPA Region 6 approval of the strategy, and state flexibility in the strategy. Meetings were held for two days in each of the states. Discussions with individual states focused on their determinations and perceptions of the greatest need in the formulation of a Capacity Development Strategy.

### ***Water Utility Rate Model Presentations and Training Demonstrations Ongoing***

#### **Background**

The model was developed in cooperation with the U.S. Environmental Protection Agency and the Environmental Finance Center Network to enhance the financial and managerial capacity of small to medium-size water and wastewater systems. The model incorporates EPA user fee guidelines and methods recommended by the American Water Works Association and the Water Environment Federation. The model is designed to be flexible and easy to use while applying accepted rate setting guidelines and methodologies. It is capable of being customized for each utility system's unique design, customer, and financial characteristics, and accommodates a broad range of common accounting and budgeting practices. Small users may enter very limited data, select the model's defaults and obtain results with minimum effort. Alternatively, larger systems, and those requiring more advanced rate setting techniques, may input very detailed information in order to take advantage of all the model's features.

#### **Model Use**

The model is both a rate setting and a financial planning tool that has the ability to:

- perform a cost-of-service analysis;
- develop demand-based user rates; and
- prepare a six-year budget, rate, and financial forecast on a desktop personal computer.

The model is useful on two levels. The EFC demonstrated the utility of the model for both of the following levels:

- water and wastewater utility operators, managers, and owners; and
- regulatory and funding agencies to:
  - improve project underwriting;
  - determine necessary and appropriate amount of financial assistance;
  - assess repayment capacity of individual systems;
  - schedule capital improvements; and
  - evaluate financing alternatives.

### ***New Mexico Finance Authority Request for Proposal Preparation November 1997 - February 1998***

The New Mexico Finance Authority (NMFA) contracted with the EFC to prepare a Request for Proposal (RFP) for environmental reviews, engineering services, and construction services for the SDWA SRF loan program. Prior to the SRF program, the NMFA had not had a need for RFPs since it did not typically need these types of services.

The EFC provided the following services:

- developed text for RFP for contractual services;
- combined RFP text (above) with standard language required for all NMFA RFPs to produce final RFP;
- prepared list of newspaper advertising locations;
- located and provided mailing list(s) to NMFA for mailing RFPs to targeted groups
- assisted NMFA in developing a matrix to rank/rate responses to RFP;
- reviewed responses to RFP and assisted NMFA in evaluating responses;
- assisted in interviewing potential candidates; and
- assisted in final selection of candidates.

***Survey of Water System Operating Permits throughout United States  
October 1998 - December 1998***

In the fall of 1998, the EFC staff conducted a telephone survey of all 50 states to find out which states issue operating permits for public drinking water systems. Specific states were questioned in depth to understand how the operating permit system works in an effort to link permits to requirements under the Safe Drinking Water Act Amendments. States that have a permitting process were asked the following questions:

- What is your legislative authority to issue permits?
- What are the pre-requisites for new systems receiving a permit? Is a business plan required?
- How are new systems covered?
- How are fees assessed and collected?
- Is there an annual review, and if so, is it part of the sanitary survey?
- What is the renewal rate?
- If a system fails the annual review, what are the consequences?
- How does the notice of violation of drinking water standards affect permit status?

***Survey and Database of GIS Usage in New Mexico  
February 1998 - September 1998***

Under the cooperative program between the University of New Mexico and the State of New Mexico General Services Department - Information Systems Division (GSD-ISD), the EFC staff conducted a telephone survey and mailing list compilation of geographic information system (GIS) specialists and administrators from New Mexico municipalities, counties, and regional economic development organizations. The same survey was conducted on state agencies, tribal chapters, and federal governments with local offices in New Mexico. The database will be used for the distribution of RGIS newsletters, information, and announcements about future RGIS-produced CD-ROMs.

General survey questions included:

- What type of geographic information system is being used?
- How much GIS experience do users have?
- Have you used the RGIS CD-ROMs in the past?
- What recommendations do you have for future roles of RGIS?

Because most existing geographic information systems in New Mexico are either in the beginning stages, or planned to be installed in the near future, communication and training in this area are paramount. On-going dialogue about available data, technological applications, and training will be of great importance for all levels of government throughout New Mexico. The RGIS Program will continue to be a focal point and clearinghouse for spatial geographic information and related technologies in New Mexico. The RGIS program will use the survey results to better target the needs of local and state government and promote statewide use of GIS for planning and spatial analysis of current and historical trends throughout New

Mexico.

### ***Texas Capacity Development Strategy Implementation 1997 - 1998***

As a follow-up to the Texas Capacity Development Strategy completed in August of 1997, the EFC assisted the Texas Natural Resource Conservation Commission with the implementation of the strategy. There are numerous steps and phases of the implementation process and full implementation may take up to three years due to the need for a revised computer database program and a revised sanitary survey deficiency score process.

The EFC was involved in initial implementation activities by assisting with the following :

- "Invitation-to-Bid" for on-site contractor assistance;
- management process for the on-site assistance contract;
- Business Plans for the new system strategy;
- SRF capacity assessment review process;
- capacity assessment questionnaire screening tool for existing systems;
- capacity assessment tool for use with the on-site contractor assistance program; and
- initial prioritization process for on-site assistance.

## **CURRENT INITIATIVES**

### **Small Water System Capacity Development**

The EPA defines capacity as "*the ability of a water system to consistently provide quality service at an affordable cost.*" This encompasses the technical, financial, and managerial capability of a system to consistently comply with all state and federal regulations. Capacity can also be seen in a much broader context than merely regulating compliance; it can involve economic development, population growth, and the role of the government and private sector in providing public infrastructure.

Increasing system capacity is a two-step process. The first step is the assessment of overall system capacity, and the second step is the enhancement of system capacity through direct technical assistance. System capacity exists along a continuum and information about present and future needs of water systems must be incorporated in the process in order to encompass the long term requirements of a sustainable system.

The EFC devotes a majority of its time to capacity development endeavors. At present, capacity development work is performed under three separate USEPA contracts:

- Capacity Development for Native American Tribes and Pueblos
- Capacity Development: Assistance to States and Native American Tribes  
Subcontract Agreement with EFC-10
- Capacity Development Assistance to Region 6 States

### **Native American Capacity Development: EPA Region 6 Tribes and Pueblos**

Sponsor: EPA Region 6

The Reauthorization of the Safe Drinking Water Act in August of 1996 included the establishment of the Native American Revolving Fund for Native American Tribes, Pueblos, and Alaskan Native Villages. The fund is administered by EPA Regional Offices and is similar to the state-administered revolving loan funds in

that it was established to provide resources in the form of monetary and technical assistance to small and medium community drinking water systems. But in the case of the Native American Revolving Fund, the funds are in the form of grants rather than loans. The EFC is focusing its initial Native American efforts on adapting the concept of capacity development to fit within the institutional framework of the Tribes and Pueblos in New Mexico.

One of the first goals of the EFC effort was to define and document problems that are unique to the different Tribes and Pueblos because of attitudes towards natural resources, varying governmental structures, or the current state in the development of their environmental programs. The EFC will visit as many of the New Mexico Tribes and Pueblos that operate water systems as possible. The four-fold purpose of these meetings is to:

1. Understand the problems inherent in increasing water system capacity;
2. Introduce the concept of capacity development and interact with the Tribal Environment Departments in defining what capacity development means to the Tribe in terms of the grant monies;
3. Develop an assessment tool for determining current water system capacity and exploring potential methods of increasing capacity in a Tribal setting; and
4. Discuss and design the types of outreach and educational programs most beneficial to each particular Tribe in their efforts to build capacity.

As part of the above effort, the EFC staff met with USEPA Region 6 Staff and with the individual Environment Department managers of Nambe Pueblo, Sandia Pueblo, Zia Pueblo, and San Felipe Pueblo to:

- define capacity in a Tribal setting with the input of Tribal water system personnel;
- discuss methods of measuring and developing capacity for Tribal water systems;
- review the capacity assessment tool; and
- determine the individual requirements of each Tribe that may require variations on the definition of capacity.

In addition, the EFC has established the Tribal Set-Aside Task Force. Because of the importance of stakeholder involvement in the process of developing and implementing a drinking water system capacity program, the Task Force includes people who represent a broad range of Tribal and Pueblo interests. Task Force meetings are held quarterly.

Because of the Tribal community structure and because Tribal governments generally have a rapid turnover, the most effective method of reaching a large segment of the population is through an educational and outreach program developed by the Tribal Environment (or Natural Resources) Department. This is necessary for the capacity development effort to be effective because it allows a "buy-in" from several members of the Tribal community. The EFC will develop a program strategy that provides guidance to tribal environmental program staff who can then go out into the community and train the Tribal administration and other Tribal members. This type of approach is particularly valuable for those traditional Tribes who conduct policy-setting meetings in their native language.

In summary, the above strategies in working with the Native American Tribes will both define program needs and develop programs to:

- assess the existing capacity of each water supply system;
- build awareness in the community of the importance of capacity;
- develop and present solutions to enhance system capacity; and



- implement changes that will allow the system to sustain itself in a viable condition.

### **Capacity Development Strategies: Assistance to States and Native American Tribes**

Sponsor: EPA Headquarters

This collaborative project with the Environmental Finance Center at Boise State University (EFC-10) is funded through a grant from the USEPA Office of Ground Water and Drinking Water. Although both Centers are doing equally proportionate work, the EFC-10 is the designated grantee while the EFC-6 is a subcontractor for the grant.

The EFC-6 is currently providing direct assistance to two states in Region 6 and one in Region 2, in addition to the Native American Tribes located in Region 6 to assist these entities in meeting capacity development strategy requirements of the 1996 SDWA Amendments. The states involved include New Mexico and Texas in Region 6 and New York in Region 2. Four additional states will be selected based on interest and need.

#### New Mexico: Expanding the Effectiveness of a Capacity Development Strategy

The EFC is completing a study of past recipients of water system funding to determine if there is significant difference between the capability of a system prior to and after funding based on the type of funding. This project is designed to assist the State in expanding the role and effectiveness of the overall capacity development strategy described in further detail later in this section.

The project study includes the following areas of examination:

- grant recipients (legislative, Community Development Block Grants (CDBG)), grant/loan recipients (Rural Development), and loan recipients (NMED's Rural Infrastructure Program);
- different types of systems throughout the state; and
- projects that are essentially comparable types of activities.

The systems are being compared to themselves before and after funding to note any differences or improvements, to the extent feasible given the limited information that is currently kept for systems. In addition, similar size and type systems that completed similar projects are being compared based on funding type (grant, grant/loan, loan) to examine whether any of the systems requested additional funding during the selected time period.

The study of past grant and loan recipients ties into Section 1420(c)(2)(B) of the Safe Drinking Water Act. A major impairment to capacity development in New Mexico is the wide availability of "free" money, i.e., grants, and other sources of loan funds. If the capacity development strategy ties only to the DWSRF and not to these other funding sources, it will be very difficult for the State to improve overall viability of drinking water systems throughout the state. In fact, systems may intentionally avoid the DWSRF if they know they have to follow viability criteria verses other moneys that do not require a capacity review. Therefore, this study will be a component in the State's efforts to link all of the funding sources under the umbrella of the capacity development program. This linkage would be a tremendous enhancement to overall capacity development efforts within New Mexico.

#### Texas Capacity Development Strategy Implementation

The EFC assisted the Texas Natural Resource Conservation Commission (TNRCC) with the implementation of the capacity development strategy it developed for them during the summer of 1997. Implementation activities are listed under the Completed Initiatives section of this report.

### Native American Tribes in Region 6: Capacity Development Assessment Tool

The EFC developed a capacity development assessment tool for Native American Tribes within Region 6 for use in evaluating the capacity of tribal water systems. Customized for tribal water systems, the tool was developed with input from tribal representatives based on ongoing dialogue the EFC maintains with Tribal officials and task force members. The draft assessment tool is in revision stages and will be sent to EPA Region 6 and tribal task force members for comment early in 1999.

This assessment tool is directly related to Section 1420(c)(2)(A) of the Safe Drinking Water Act Amendments of 1996 that requires capacity development strategies to include a method of determining those systems that need to improve technical, financial, or managerial capacity. The assessment tool will be used, possibly as a self-assessment tool, to assess the existing technical, financial, and managerial capacity of water systems and to determine those systems in need of improvement and the possible technical assistance that may be provided.

### ***Capacity Development Strategy Assistance to Region 6 States***

*Sponsor: USEPA Region 6*

*1998 - Present*

The overall goal of this assistance agreement is to assist the Region 6 states of Arkansas, Louisiana, New Mexico, and Oklahoma in the development of a capacity development strategy as required by the Safe Drinking Water Act Amendments of 1996. This project is intended to help states meet SDWA deadlines and to prevent them from having funds withheld from the SRF for a failure to do so.

The EFC is assisting Arkansas, Louisiana, Oklahoma, and New Mexico in preparing a Capacity Development Strategy as required under the 1996 Safe Drinking Water Act. The EFC does not propose to complete the entire capacity development strategy for each of the four states, but intends to assist each state in several tasks that will lead the state to the completion of a strategy.

Task 1 includes:

- assistance to state agencies in developing Capacity Development Strategies:
- review existing state programs that relate to capacity development
- meet with state agencies to discuss capacity development elements that relate to new systems.
- meet with state agencies to discuss capacity development elements that relate to existing systems.
- meet with state agencies to discuss capacity development elements that relate to SRF applicants.
- facilitate initial stakeholder meeting.
- review copies of the states' draft strategies as they are produced.

Task 2 includes:

- develop a SRF capacity assessment tool.
- assist in the development of new system Capacity Development Strategy
- participate in the New Mexico Drinking Water Advisory Group and the Capacity Development subgroup.
- a assist in the development of the Capacity Development Strategy for existing systems.

### ***Services Related to the Establishment of Reasonable Water Rates for Regulated Utilities***

*Sponsor: Texas Natural Resources Conservation Commission*

*1998 - Present*

This project is divided into three sections: 1) Establishment of Reasonable Water Rates for Regulated Utilities, 2) Development of Characteristics of Well Run Water Systems, and 3) Affordability of Water

Treatment Alternatives.

## Section 1: Establishment of Reasonable Water Rates for Regulated Utilities

### **Background**

The Texas Natural Resource Conservation Commission (TNRCC) regulates approximately 900 private water utilities. The scope of this regulation includes approving utility rates and rate increases for these systems. Recent legislation and associated rule changes (Senate Bill 1 from the 1997 legislative session) now permits rate flexibility for the regulated systems. One ramification of this change is that utilities may now be able to anticipate costs and request that such costs be included in the rate prior to expending the funds. In the past, utilities had to spend the money up front and then request reimbursement later through a rate increase request. This process created a system in which many utilities simply did not spend money for operation and maintenance or repairs because they were not sure if it would be reimbursed, or they simply did not have adequate funds to pay for these items up front. Inadequate operations, maintenance, and repairs have left many systems in poor condition with short life spans. The TNRCC would like to examine the possibility of revising this process to allow utilities to incorporate operation and maintenance and repair costs into their rates up front.

Additionally, the EFC is gathering current information from Texas water utilities regarding the cost for various components of a water system on an annual basis. This information would allow TNRCC to more effectively and efficiently review the rate submittals, and also give the utilities a better forecast of revenue requirements. TNRCC has also requested information on staffing requirements for various sizes of systems and realistic life spans of system components.

### **Project Outcome**

The outcome of this project will be a matrix of water system types (e.g., surface vs. groundwater) and sizes with associated costs for the various items that are required to run a well-operated water system. The components would include such items as: reasonable salaries for employees, including a certified operator; reasonable operation and maintenance expenses; desirable reserve ratios; building costs (administration); and costs for administering the system. The EFC will provide TNRCC with a complete report of the project and the data used to develop the matrix. Additionally, the EFC will provide two more outcomes: 1) a listing of the number and type of staff required to run various sizes and types of treatment plants; and 2) a list of actual useful life cycles for various system components.

### **Tasks**

Task 1: Project Kickoff Meeting

Task 2: Investigation of Other Sources of Data to Use in Study

Task 3: Characterization of the Regulated Systems

Task 4: Selection of Potential Water Systems to Survey

Task 5: Selection of a Statistical Sample of Water Systems to Survey

Task 6: Development of Survey Information Form

Task 7: Collection of Data

Task 8: Data Base Development

Task 9: Result Preparation

Task 10: Comparison of Results to Existing Databases from Other Sources

Task 11: Draft Report Preparation

Task 12: Final Report Preparation

## Section 2: Development of Characteristics of Well Run Water Systems

## **Background**

In the overall capacity development program there is a need for information regarding the characteristics that define a "well-run" water system. This information can be used in a variety of ways by systems and by TNRCC. It can be used to help assess capacity by establishing benchmark values and by indicating key factors that TNRCC can examine in the process of trying to determine if a system is well run. The information can also be used by systems to provide an indication of potential improvements.

It is important to compare systems of similar type and size in this effort. Therefore, systems will be categorized according to ownership type and size. Private systems will not be included here, because they are included above in Section 1.

## **Deliverables/Products**

This section of the proposal will include the following products: a database of information regarding characteristics of well-run systems, a case study report, and a final report summarizing the effort of this section.

## **Tasks**

- Task 1: Meeting with TNRCC
- Task 2: Identification of Well-Run Systems
- Task 3: Selection of a Statistical Sample of Water Systems to Survey
- Task 4: Development of Survey Information Form
- Task 5: Collection of Data
- Task 6: Data Base Development
- Task 7: Result Preparation
- Task 8: Case Studies of Well-Run Systems
- Task 9: Draft Report Preparation
- Task 10: Final Report Preparation

## Section 3: Affordability of Water Treatment Alternatives

### **Background**

Many water systems in Texas have difficulty meeting various SDWA regulations. In some cases, this difficulty is due to a lack of installing the needed equipment to remove particular contaminants from the source water. Either the perception or the reality that the needed equipment is too costly for the system users to bear often causes the lack of installation of the equipment. Therefore, the system improvements are not made and the customers continue to receive inadequately treated water. With the recent passage of the SDWA amendments in 1996 and the associated State Revolving Fund (SRF), it is time to reexamine the issue of what is affordable for communities.

The determination of the affordability of the installation of water treatment technologies is a two-fold process. One step in this process is to determine dollar amounts that communities of various sizes and characteristics could afford. These dollar amounts would be independent of the actual treatment technology needed. The other step is to investigate various technologies for water treatment and determine the estimated costs of those technologies. The two components of this section of the proposal then can be combined to determine the affordability scenario. For example, if a community faced a contamination problem and the proposed solution was reverse osmosis, the estimated cost of that system (prepared by the systems engineer) could be compared to the information provided here to see if the costs were reasonable. If not, the engineer and system could be contacted to provide an explanation of the differences. Once TNRCC, the community, and engineer agree on

the costs of the proposed technology, an affordability analysis could be performed on that specific cost with specific community characteristics.

### **Deliverables/Products**

This section of the proposal will include three main products. The first product will be a database of treatment technologies and associated prices for various sized systems. The second will be a computer program that acts as a decision matrix for affordability with given community characteristics. The user will enter a set of community characteristics and a cost and will then receive result indicating what the affordable cost level is for the community and how far away from that value the amount is. The final product will be a summary report indicating the methodology used to develop the database and affordability program, with backup hard copies detailing the logic used in the affordability program.

### **Tasks**

- Task 1: Meet with TNRCC to Outline the Project
- Task 2: Literature Review on Affordability
- Task 3: Selection of Technologies for Inclusion in Affordability Study
- Task 4: Investigation of Technologies
- Task 5: Development of Database of Cost Information
- Task 6: Community Demographic Data and System Data
- Task 7: Development of Affordability Criteria
- Task 8: Development of Affordability Decision-Making Program
- Task 9: Development of Draft Report
- Task 10: Development of Final Report

### **Unified Source Water Protection Plan Pilot Project**

Sponsors: USEPA Headquarters and USDA Rural Utilities Service

1998 - Present

### **Background**

The objective of this project is to establish a Unified Source Water Protection Plan (USWPP) for communities located near the Village of Mora and within the Mora County portion of the North-Central New Mexico Enterprise Community (La Jicarita EC). This project will build upon applied research and projects conducted by the project team which includes the University of New Mexico Environmental Finance Center (UNM-EFC), the Rural Community Assistance Corporation (RCAC), and the La Jicarita EC.

The 1996 SDWA Amendments establish a strong emphasis on preventing contamination problems through source water protection and enhanced water system management. Within 18 months after the EPA publishes guidance for source water protection, states will be required to submit a program for delineating source water areas of public water systems, and for assessing the susceptibility of such source waters to contamination. During the development of the Mora Unified Source Water Protection Plan (USWPP) the project team will work closely with the New Mexico Environment Department (NMED) and any contractors hired by the NMED to conduct source water protection studies on its behalf.

The two basic factors necessary in forming a sound USWPP are: 1) the establishment of a basic understanding of the need of source water protection, and 2) the design of a sound educational program for all inhabitants, and users, of the watershed. This public outreach will be achieved through the formation of a community planning council.

The main focus of the project team is to assist the communities in the establishment of the Council and in the development of Best Management Practices for the source water protection area. A goal is to develop an

environment where small systems can have an impact on the land use practices outside of their service areas.

## **Project Objectives**

The guiding principle of this project is to "create the opportunity for communities to make the choice." In other words, the project will:

- provide technical information,
- outline alternatives,
- provide information regarding advantages and disadvantages of alternatives,
- detail potential implementation issues, and
- bring together all the appropriate stakeholders in a unified source water program, in a clear and focused manner to allow the stakeholders to choose the options that will best succeed in the study area.

To achieve the project objectives and to stay within the guiding principle, several tasks have been outlined:

- Task 1: Development of Background Information
- Task 2: Identification of Stakeholders
- Task 3: Planning the Initial Meeting
- Task 4: Initial Meeting
- Task 5: Second Meeting & Establishment of the Source Water Protection Council
- Task 6: Source Water Protection Study
- Task 7: Creating the Unified Source Water Protection Plan
- Task 8: Implementation of the Unified Source Water Protection Plan
- Task 9: Information Dissemination
- Task 10: Documentation of Plan Development & Implementation

The focus of these tasks is to:

- develop a Source Water Protection Council;
- conduct a Source Water Assessment;
- develop a functional, long-term Unified Source Water Protection Plan;
- implement the initial steps of the plan; and
- outline future implementation steps.

## ***Restoring Ecological Balance in Native American Communities through Comprehensive Community Planning, Sustainable Development, and Ecological Design***

*Sponsor: USEPA Region 6*

*1998 - Present*

## **Background**

The objective of this project is to assist Native American communities in identifying ways to restore ecological balance through the appropriate use of comprehensive community planning and ecological design techniques. The intent is to assist six Native American communities over the next three years to help them define methods to redesign and redevelop themselves in greater harmony with their surrounding ecosystems and habitats. These six communities would then be used as role models to inform other Native American communities about how to accomplish similar sustainable community development goals.

This project exemplifies how the Environmental Finance Center Network; Native American tribal organizations; governmental entities; and other resource providers and experts can work as a team in helping Native American communities restore ecological balance through the appropriate use of comprehensive

community planning, sustainable development, and ecological design techniques. All work efforts will be undertaken at the specific request of Tribal authorities within EPA Region 6. The work will be consistent with the Tribes' cultural values and governmental policies. The work will also be coordinated with other state and federal agencies involved in Tribal environmental issues, including, but not limited to, the EPA, the Indian Health Service, and the Bureau of Indian Affairs. The EFC will ensure that the efforts of this project will complement, not duplicate, efforts of these other agencies.

The overall project intent is to assist two to four Native American Tribes within EPA Region 6 with community planning, sustainable development, and ecological design over the next three years (1998-2001). These services are designed to increase local capacity to plan and develop environmental infrastructure, determine the type and pace of economic growth that will occur in these communities in the future, and address other issues vital to sustainable community development. The initial needs assessment, training and dialogue phase will involve the federally recognized Tribes in EPA Region 6. The results of this first phase will be combined with the results of the similar effort underway in EPA Region 5 and other results, if any, from other EPA Regions represented by EFCs.

### **Project Development**

The overall project will proceed in four sequential phases (only Phase I is discussed). Each phase will be guided by at least one major goal. Phase I activities will build consensus among EPA, tribal officials, and the project team on what priorities will be addressed by the ongoing service initiative, which Native American communities will participate, and how the overall project will proceed.

#### Phase 1: Needs Assessment, Training Workshops, Project Design

The first project goal is to prepare a project design that is acceptable to tribal officials and EPA. At the same time, the EFC and its partners (selected as needed for their expertise) will offer training in the areas of community planning, sustainable development, and ecological design to tribal officials within EPA Region 6. The project design will be based upon a needs assessment of key community and environmental issues facing these communities. Existing plans, reports, and other informational sources will be built upon. A key emphasis will be placed on helping the Tribes to build local capacity through technical training, organizational development, and research services. This project design will be described in a report that is approved by EPA and tribal representatives. The project design will identify how community planning, ecological design, and sustainable strategies can be most effectively used in Native American communities.

The first phase of this project, the phase for which funding has been awarded, will be used to establish trust between the project team members and the Tribes and to establish a successful working relationship. It is recognized that it takes considerable time to create the needed relationship and that the creation of such a relationship is vital to the overall success of this project. The first phase of the project will also be used to introduce the topics of comprehensive community planning, sustainable development, and ecological design to the Tribes to get them comfortable and familiar with these issues.

Once the Native American communities have been selected, the UNM-EFC will assist each in preparing a set of goals that can help guide future planning efforts. These goals will create appropriate tribal expectations with respect to project outcomes. An ongoing public education process will be used to shape and maintain appropriate expectations throughout the planning process. This public education process will help build support of project recommendations. This is a crucial aspect of the project to ensure that realistic steps can be taken to remedy the strategic community issues identified during the planning process. Finally, all of these activities will help build local capacity for community-based environmental protection.

The EFC intends to bring unique and effective approaches to working with the Tribes on these issues. The

first approach focuses on community-based and community-led planning. This will ensure that local officials control the process. A second unique component is a focus on "lifestyle" as a key community building block in a city, village, or town. The planning process will work to identify the dominant lifestyles types found in each community. The third is an active focus on connecting and integrating the various aspects of community life to increase social cohesion within Native American communities.

Phase 1 tasks include the following:

- Task 1: Assessment of Tribal Planning Needs
- Task 2: Gathering Background Information Related to Needs
- Task 3: Workshops
- Task 4: Community Service Project Design

### ***Cost-Effective Environmental Management***

*Ongoing*

### **Public-Private Partnership Studies for the Environmental Financial Advisory Board: Cost-Effective Environmental Management Case Study Compendium**

The Director of the EFC served as vice-chair of the Cost-Effective Environmental Management workgroup of the Environmental Financial Advisory Board. The Environmental Financial Advisory Board (EFAB) is a federal chartered advisory committee that consists of independent experts from all levels of government, including: elected officials; the finance, banking, and legal communities; business and industry; and national organizations who advise EPA on environmental finance issues.

When the EFAB met in August of 1996, it developed a strategic action agenda that included the formation of several working groups, one being the Cost-Effective Environmental Management Workgroup. During previous strategic action agendas, this working group concentrated primarily on public-private partnerships. However, for the 1996-1997 strategic agenda, this working group expanded its focus beyond just considering public-private partnerships. Specifically, the workgroup added to its evaluation, models that focus on internally optimizing environmental services. To achieve its objectives, this workgroup outlined two major work projects: a compendium of case studies on effective service delivery and a "how-to" handbook for local governmental officials interested in looking at the preliminary steps of implementation. The first work product was completed in October of 1997 and was titled "Cost-Effective Environmental Management Case Studies."

The case study compendium discusses ten cost-effective environmental management efforts in municipalities throughout the U.S. The case studies cover everything from internal optimization strategies, such as competitivization, through full privatization. In addition, the document describes the types of environmental management options, lessons learned from the case studies, the institutional setting, i.e., applicable laws and regulations, and reference documents for more information.

The Phase II work product was initiated in February of 1998 and is a "how-to" reference guidebook for governmental personnel who may be considering some form of cost-effective environmental management. The guidebook is intended to lead the user through a series of questions designed to determine if the user could benefit from some type of management structure change and what type of control the user has to make such changes. The answers will lead the individual to a matrix that will show what type of cost-effective management structure is most appropriate, preliminarily. The user will also be provided information regarding the organizational options that may be available to implement a change and some background information. This document is intended to assist governmental officials in the preliminary decision-making process so that they may make an informed decision regarding the type of change that may work for their



community. This information can be used by the officials at public meetings or meetings of elected bodies. A completion date of summer 1999 is anticipated.

## **PROPOSED INITIATIVES**

### ***Technical Assistance to Nizhnii Tagil, Vodokanal, Russia***

*Submitted to: Syracuse University Environmental Finance Center (EFC-2)  
lead Center, for an EPA assistance agreement*

This proposed effort entails implementation of a capacity development project for the Nizhnii Tagil Vodokanal in Nizhnii Tagil, Russia. The UNM-EFC proposes to complete two project components: managerial and financial strengthening; and technical strengthening.

#### **Task 1. Managerial and Financial Strengthening - Study Tour and Capacity Development Workshop**

The UNM-EFC proposes to arrange, organize and support a 13-day study tour in the United States for the Director of the Nizhnii Tagil Vodokanal and two additional people. This tour would include visits to Washington, DC; Dallas, Texas; Albuquerque, New Mexico; and Denver, Colorado.

- Washington, DC includes visits to the USEPA Office of International Activities, the World Bank, and tours of local water and wastewater treatment facilities.
- Dallas, TX includes visits to the USEPA Region 6 offices and tours of related water and wastewater treatment facilities.
- Albuquerque, NM includes a workshop on Capacity Development by the UNM-EFC and related tours of local water and wastewater plants.
- Denver, CO includes tours of local water and wastewater treatment facilities.

#### **Task 2. Technical Strengthening**

The UNM-EFC proposes to order specific equipment and ship this equipment to Nizhnii Tagil, Russia. The equipment includes flow meters for water systems and laboratory equipment for water quality testing. The specific equipment list is based on discussions with USEPA.

### ***Infrastructure Planning Conference for the Navajo Nation***

*Submitted to: The Navajo Nation Office of Engineering Services*

The Navajo Nation approached the EFC to organize an infrastructure planning conference in Gallup, New Mexico for the Navajo Nation. The purpose of the conference is public education and awareness targeted to Chapter officials and to a grassroots level public audience.

Conference goals include teaching the following:

- "How to acquire funding"
- "How to write proposals" (for funding);
- "Steps in an RFP process and bidding process"
- "Importance of master planning" - Develop 1-5-10 year plans
- "Comprehensive Land Use planning" - terminology & government requirements.

### **Small Water System Capacity Development for Native American Tribes and Pueblos - Amendment**

*Sponsor: USEPA Region 6*

*In Support of: EPA Region 6 Native American Revolving Loan Fund for Drinking Water*

## **Background**

Developing a capacity development program for the Native American communities, in conjunction with the Native American Revolving Fund, presents unique challenges. One factor is the governmental structure. Each Tribe and Pueblo has its own governmental structure and there is often rapid turnover in Tribal leaders, which may create a continuity problem in terms of program implementation. The Tribes and Pueblos have varying capacities in terms of environmental programs. Some have quite extensive programs with many employees and much expertise, while others are just beginning the process of establishing environmental agencies. Many of the water systems lack meters, which creates difficulties in terms of establishing adequate rate structures or implementing water conservation programs. Many of the systems lack trained operators to run the systems. Traditionally, the clean water revolving funds set up by congress have not extended to the Native Americans, therefore, there is not a past history of implementing such a program in Native American communities as there is within the States.

### **Amendment to Original Project**

With the additional funding, the EFC intends to add a third component - direct assistance to tribes in technical, managerial, and financial capacity development and direct assistance with Tribal SRF grant preparation. To achieve this, the EFC proposes four additional tasks to the existing contract (see Current Initiatives section):

- direct assistance to Tribes in improving technical, managerial, and financial capacity;
- rate setting training;
- assistance with grant writing for SRF funds; and
- examination of the possibility of Tribal participation in the state's SRF funds.

### ***North American Development Bank Assistance Work Plan: Financial Capacity Assistance along the US-Mexico Border Region***

*Submitted to: North American Development Bank and EPA Office of International Activities*

One of the greatest problems along the U.S. Mexico Border in terms of financing water and wastewater infrastructure is the ability to set sustainable and equitable rates and the unwillingness of people in the communities to pay the necessary rates. Although this problem is not unique to the border area, it is particularly common and pronounced along both sides of the border. Part of this problem relates to a lack of understanding of how to set rates and what elements should be included in a sustainable and equitable rate. Another part of this problem is a lack of understanding within the community regarding why they need to pay for the water or wastewater treatment.

This proposal is being submitted to provide a means to address some of these issues in border communities. Another component would be improving the financial capacity of communities along the border region by assisting the NADBank in its efforts to fund environmental infrastructure projects along the US-Mexico Border through assistance to the NADBank and directly to communities. To achieve this end, the EFC would partner with a Mexican partner and the EFC Network, as appropriate, to provide education in rate setting on both sides of the border.

Strategic objectives include the following:

- help the NADBank Bank in its efforts to fund environmental infrastructure projects along the US-Mexico Border through assistance to the NAD Bank and directly to communities;
- improve the financial capacity of communities along the border region; and
- long-term educational process of ratepayers on both sides of the border.

### ***Sustainable Urban Areas: Guiding Growth***

*Submitted to: EPA OAQPS as an EFC Network proposal*

Urban sprawl comprises one aspect of a larger issue: regional patterns of development. Regional development frequently occurs in fragmented patterns, with little coordination between levels of government, between public and private sectors, or between different disciplines including economics, landscape ecology, and natural resource management. However, in reality, these issues are all interconnected: land use, brownfields redevelopment, transportation, and economic vitality are all interrelated with habitat restoration, water and air quality, and natural resource protection.

Feasible, more cost-effective solutions to ensure sustainable urban areas lie in a multi-governmental, multi-issue problem solving process. The challenge is how to integrate this process into local decision making. To address this challenge, the EFC Network proposes to conduct a series of charrettes, which would explore the long-term sustainability of urban areas through a process of "interconnectedness of issues" and between levels of government and the private sector. The charrettes would begin by recognizing the traditional ways in which policy makers approach local challenges. Each charrette would not only focus on issues of local concern, but also demonstrate how a single issue is connected to broader issues and broader geography.

The UNMEFC would concentrate on transportation issues and its effect on sprawl development, including consequences of new roads, land use decisions, and transportation choices by local and regional entities. Specifically, the UNMEFC charrette would examine proposed road construction of a new road through National Park land, which would facilitate growth on the west side of the park. The location of this type of road construction would be a national precedent.

## **EFC NETWORK COLLABORATIONS**

### **Collaborative Projects**

#### ***Capacity Development Strategies: Assistance to States and Native American Tribes***

University of New Mexico EFC-6 working with:  
Environmental Finance Center at Boise State University (EFC-10)

#### ***Water/Wastewater Utility Rate Model Demonstration for USEPA Region 6 Agencies***

University of New Mexico EFC-6 working with:  
Environmental Finance Center at Boise State University (EFC-10)

#### ***Restoring Ecological Balance***

University of New Mexico EFC-6 working with:  
Great Lakes Environmental Finance Center at Cleveland State University (EFC-5)  
Environmental Finance Center at Boise State University (EFC-10)

## **Collaborative Proposals**

#### ***Sustainable Urban Areas: Guiding Growth***

University of New Mexico EFC-6 working with:  
University of Maryland Environmental Finance Center (EFC-3), lead Center,  
Environmental Finance Center Network

#### ***Capacity Development Assistance for the Nizhnii Tagil, Vodokanal, Russia***

University of New Mexico EFC-6 working with:  
Syracuse University Environmental Finance Center (EFC-2), lead Center

#### ***NADBank Assistance Work Plan: Financial Capacity Assistance along the US-Mexico Border Region***

University of New Mexico EFC-6, lead Center, with:

Environmental Finance Center Network  
Environmental Financial Advisory Board

### **Collaborative Meetings/Conferences/Workshops**

#### ***Rate Model Workshops***

March 1998 in Albuquerque, NM  
University of New Mexico EFC-6 with:  
Environmental Finance Center at Boise State University (EFC-10)

#### ***Meeting on Ecological Design in Tribal Settings***

April, 1998 in Chicago, IL  
University of New Mexico EFC-6 with:  
Great Lakes Environmental Finance Center at Cleveland State University (EFC-5)  
Environmental Finance Center at Boise State University (EFC-10)

#### ***Environmental Finance Center Network Forum***

June, 1998 in Syracuse, NY  
University of New Mexico EFC-6 with:  
Syracuse University Environmental Finance Center (EFC-2) - host Center  
Environmental Finance Center Network

#### ***Association of State Drinking Water Administrators National Conference***

October 1998 in Keystone, CO  
University of New Mexico EFC-6 with:  
Environmental Finance Center at Boise State University (EFC-10)

### **TECHNICAL PRESENTATIONS-CONFERENCES, MEETINGS, and TRAINING**

#### **EFC Presentations - Conferences**

<b>Event</b>	<b>Date</b>	<b>Location</b>	<b>Description</b>
Training for Tribes in EPA Region 5	4/1/98	Chicago, IL	Presentation at tribal training on capacity development Issues with EFC's 5 and 10
Workshop on Capacity Development Requirements for New Water Systems and State Revolving Loan Applicants for Arkansas Department of Health	5/12-13/98	Little Rock, AK	Training meeting facilitated by EFC and attended by 20 staff members of Arkansas Dept. of Health representatives from EPA Region 6
Meeting with Representatives from Angel Fire, New Mexico	8/25/98	Albuquerque, NM	Demonstration of Resource Geographic Information System
New Mexico Rural Water Association Training and Workshop for Water System Operators	9/24/98	Tucumcari, NM	EFC presentation and training on Utility Rate Setting and RateModPro
Meeting of New Mexico Municipal League Zoning Official	9/24/98	Taos, NM	EFC presentation on the use of Geographic Information Systems
Association of State Drinking Water Administrators Annual Conference:	10/5-8/98	Keystone, CO	Presentation and Exhibit Table
Middle Rio Grande Conservancy District Meeting	10/6/98	Albuquerque, NM	EFC presentation on Resource Geographic Information and GIS support

New Mexico Environmental Health Conference	10/13-15/98	Albuquerque, NM	Presentation on Texas Rate Study Project and Exhibit Table
E-911 Overview and NMGIC Meeting	10/15-16/98		
Meeting of Council of State Community Development Agencies	10/28-30/98	Portland, OR	Presentation on Blending Engineering and Financing to Assist Small Communities
Louisiana Regional AWWA Meeting	12/15-16/98	Alexandria and Baton Rouge, LA	Presentation on Blending Engineering and Financing to Assist Small Water Systems

### EFC Meetings

Event	Date	Location	Description
Meeting with Representative from EPA Office of International Activities	1/8/98	Albuquerque, NM	Discussion of potential EFC assistance along US/Mexico Border
Meeting with Bohannon Houston and Lodestar Project Team	2/4/98	Albuquerque, NM	Discussion of water issues
Meeting with Texas Natural Resource and Conservation Commission	2/4-5/98	Austin, TX	Discussion of capacity development implementation
EFAB Meeting; EFC Directors Meeting	2/9-12/98	Washington, DC	
Meeting with Indian Health Service and other providers of infrastructure support	2/23/98	Santa Fe, NM	Discussion on capacity development for Tribes
Meeting with New Mexico Environment Department	2/26/98	Santa Fe, NM	Discussion of capacity development issues in New Mexico
Oklahoma Department of Environmental Quality, Stakeholders Meeting on Capacity Development	3/2/98	Oklahoma City, OK	Meeting facilitated by EFC. Attendees included representatives from various stakeholder groups, EPA, and Oklahoma DEQ
New Mexico Drinking Water Advisory Group Meeting	3/5/98	Santa Fe, NM	Discussion of capacity development issues for medium and large systems, and Source Water Protection Program
Meeting on Funding Tribal Drinking Water Infrastructure Improvements	3/17/98	Albuquerque, NM	Meeting sponsored by EPA Region 6 and facilitated by EFC
Meeting with New Mexico Environment Department	3/24/98	Santa Fe, NM	Discussion of capacity development issues in New Mexico
Meeting with Representatives from Nambe Pueblo	4/7/98	Albuquerque, NM	Discussion of Tribal Set-Aside Program
Meeting with New Mexico Environment Department	4/14/98	Santa Fe, NM	Discussion of capacity development issues in New Mexico
Meeting with EPA and Cadmus Group	4/16/98	Washington, DC	Discussion of coordination of assistance providers to states on capacity development issues
Meeting of New Mexico Geographic Information Council	4/17/98	Albuquerque, NM	
Tribal Drinking Water Set-Aside Task Force Meeting	4/28/98	Albuquerque, NM	Discussion of Tribal Set-Aside Program

New Mexico Drinking Water Advisory Group Meeting	5/14/98	Santa Fe, NM	Discussion of Safe Drinking Water Program and Operator Certification Program
Meeting with Texas Natural Resource Conservation Commission	6/10-12/98	Austin, TX	Discussion of capacity development implementation issues
New Mexico Drinking Water Advisory Group Meeting	6/11/98	Santa Fe, NM	Discussion of proposed application process for loans, upcoming public meetings and subcommittee meetings
Meeting with Representatives from Sandia National Laboratory and Navajo Nation	6/15/98	Albuquerque, NM	Discussion of potential use of Smart Sampling on Navajo Nation for hazardous waste cleanup
EFC Forum for Funding Agencies and Communities in New York	6/25-26/98	Syracuse, NY	
Meeting with EPA Region 6	7/6/98	Dallas, TX	Discussion of Tribal Set-Aside Task Force, priority list, ranking system, and date of availability of grant funds
The Third Annual New Mexico Infrastructure Finance Conference	7/12-14/98	Albuquerque, NM	EFC Exhibit Table
Meeting with Rural Community Assistance Corporation and La Jicarita	7/15/98	Mora, NM	Discussion of proposal development for Unified Source Water Protection Project in Mora County
New Mexico Drinking Water Advisory Group	7/29/98	Santa Fe, NM	Meeting of Capacity Development Subcommittee
Tribal Drinking Water Set-Aside Task Force Meeting	7/22/98	Santa Fe, NM	
Meeting with Texas Natural Resource Conservation Commission	8/ 3-6/98	Austin, Texas	Discussion of implementation of rate study
New Mexico Drinking Water Advisory Group	8/12/98	Santa Fe, NM	Capacity Development Subcommittee Meeting
EFC Network Director's Meeting	9/13-15/98	Cleveland, OH	
Meeting with New Mexico Environment Department, Drinking Water Bureau	9/17/98	Santa Fe, NM	Discussion of New Mexico Capacity Project
Meeting with Representatives from Nambe Pueblo	9/21/98	Albuquerque, NM	Discussion and Review of Capacity Development Assessment Form
Navajo Nation Infrastructure Planning Conference Meeting	9/24/98	Albuquerque, NM	Discussion of potential project to develop and facilitate conference on infrastructure planning and financing
New Mexico Drinking Water Advisory Group Meeting	9/29/98	Santa Fe, NM	
Meeting with Representatives from Zia Pueblo	10/2/98		Discussion of capacity development issues
Middle Rio Grande Conservancy District Meeting	10/6/98	Albuquerque, NM	EFC presentation on Resource Geographic Information and GIS support
Meeting with New Mexico Environment Department and EPA-6	11/9/98	Santa Fe, NM	Discussion of capacity development program in New Mexico
Meeting with EPA Region 6	11/10/98	Albuquerque, NM	Discussion of EFC activities
Meeting with Rural Community Assistance Corp	11/13/98	Santa Fe, NM	Discussion of Unified Source Water Protection Project in Mora County

Meeting with Louisiana Department of Health & Hospitals, Office of Public Health	11/16-17/98	Baton Rouge, LA	Discussion of capacity development program and business plan requirements for Louisiana
New Mexico Drinking Water Advisory Group Meeting	12/2/98	Santa Fe, NM	Discussion of state-wide needs survey of water systems and water conservation program
Meeting with Rural Community Assistance Corporation and La Jicarita	12/16/98	Mora, NM	Team Meeting for Unified Source Water Protection Project in Mora County
New Mexico Drinking Water Advisory Group	12/17/98	Santa Fe, NM	Source Water Protection Subcommittee
Meeting with Rural Community Assistance Corporation	12/18/98	Albuquerque, NM	Discussion of EFC participation in Tribal Conference in Reno, NV

### EFC Training Workshops

Event	Date	Location	Description
EPA Region 4 and 6/States Training on Capacity Development	1/12-14/98	Dallas, TX	EFC presentation on different aspects of capacity for public drinking water systems
UNM Civil Engineering Graduate Seminar	1/29/98	Albuquerque, NM	Presentation on the role of engineering in capacity development
Colorado Rural Water Association Annual Conference	2/19/98	Colorado Springs, CO	EFC presentation and training on Utility Rate Setting and RateModPro
Workshop on Utility Rate Setting and RateModPro	3/23/98	Albuquerque, NM	Meeting with EFC Region 10 and presentation and training of representatives from water systems in Colorado
Workshop on Capacity Development Requirements for New Water Systems and State Revolving Loan Applicants for Louisiana Department of Health and Hospitals, Office of Public Health	4/22-23/98	New Orleans, LA	Workshop facilitated by EFC and attended by Louisiana Dept. of Health and Hospitals Staff and Representatives from EPA Region 6
Workshop on Capacity Development Requirements for New Water Systems and State Revolving Loan Applicants for Arkansas Department of Health	5/12-13/98	Little Rock, AK	Meeting facilitated by EFC and attended by 20 staff members of Arkansas Dept. of Health representatives from EPA Region 6
EFC Forum for Funding Agencies and Communities in New York	6/25-26/98	Syracuse, NY	
Landfill Bioreactors and Biogas Seminar hosted by City of Albuquerque	6/26/98	Albuquerque, NM	Attended seminar
ESRI Annual Conference and Training	7/27-30/98	San Diego, CA	Attended conference
Demonstration of RateModPro	8/11/98	Albuquerque, NM	EFC demonstration and training of El Dorado Water System
Meeting with representatives from Bloomfield, New Mexico	8/17/98	Albuquerque, NM	Demonstration of Resource Geographic Information System

New Mexico Rural Water Association Workshop and Training for Water System Operators	8/27/98	Socorro, NM	EFC Training on Utility Rate Setting and RateModPro
Technology Demonstration by National Laboratories and EPA	9/13-25/98	Albuquerque, NM	Hosted by NMERI/EFC
Introduction to Hydrology Course at Southwestern Indian Polytechnic Inst.	11/16-20/98	Albuquerque, NM	Taught Course
ArcView GIS Course	11/23-24/98	Albuquerque, NM	Taught Course

## AVAILABLE PUBLICATIONS

- *Survey and Database Summary Report on GIS Usage in New Mexico*, September 1998
- *Evaluation of a Subsurface Flow Wetland and Evaporation Pond for a Single Family Dwelling in the East Mountain Are of Bernalillo County*, Final Report April 1998
- *Report on Issues in the Development of a County Utility Department: Final Report to Doña Ana County, New Mexico*, November 1997
- *Cost-Effective Environmental Management Case Studies*, October 1997
- *Ecological Baseline Model for the U.S.-Mexico Border*, Final Report September 1997
- *Capacity Development Strategy Report for Texas Natural Resource Conservation Commission*, Final Report August 1997
- *Civil Engineering Options Assessment for the Enchanted Skies Park*, Draft Report July 1997
- *Bioflotation Treatment Unit Demonstration Project*, Final Report July 1997
- *Examples of Capacity Development Assessment Tools & Business Plans from Various States*, July 1997
- *A Guidebook of Financial Tools, prepared by the EFAB and EFC Network*, June 1997
- *Environmental Finance Center Network 1996 Annual Report*, January 1997
- *Management and Financing Options for Small Community Water Systems on the US-Mexico Border Region: Final Report to Doña Ana County, New Mexico*, July 1996
- *A State Survey of Capacity Building Tools*, November 1996
- *A State Viability Survey*, August 1996
- *The Otero County Small Water System Restructuring Project*, November 1995
- *North Valley Wastewater Options Study: Final Report for Bernalillo County, New Mexico and Village of Los Ranchos de Albuquerque*, June 1995
- *Meeting Financial Responsibility Requirements on Tribal Lands*, October 1994
- *Public-Private Partnerships for Environmental Facilities: The Management Challenge for Local Governments*, October 1993
- *Water and Wastewater User Charge Guide for Small Municipalities*, September 1991

## ADDITIONAL WORK

The EFC staff also performs contractual work under the Engineering and Environmental Finance Center Division of NMERI (New Mexico Engineering Research Institute). Most of this work consists of research-based projects under contract with state and local governments and other university departments.

### **New Mexico Resource Geographic Information System On-going**

The New Mexico Resource Geographic Information System (RGIS) Program is a cooperative program between the University of New Mexico and the State of New Mexico General Services Department.



Representatives from three UNM public service and research units comprise the RGIS Team including the EFC director representing the New Mexico Engineering Research Institute, Earth Data Analysis Center, and the Bureau of Business and Economic research. Program components include the RGIS Clearinghouse --a publicly accessible resource, database development, technical support, training, geographic information coordination, and project support for state agencies and local government.

RGIS facilitates the use of GIS in New Mexico in three ways: mapping, communicating, and educating. First, it provides counties and municipalities with public maps in a format appropriate for the most commonly used GIS software. Second, it assists state and local governments with interactive communication and cooperation in the use of GIS. Third, it educates public organizations about the advantages of GIS and trains them in its use. Thus, RGIS promotes statewide-use of GIS for planning and spatial analysis of current and historical trends throughout the state. For more information refer to the RGIS web page at <http://rgis.unm.edu:8080>.

### **LodeStar Project: *Civil Engineering Options Assessment Report***

The EFC provided ongoing civil engineering support services to the LodeStar Project's Enchanted Skies Park and Observatory, which will be a public access park dedicated principally to providing a balanced program of education, research, and public outreach. The *Civil Engineering Options Assessment Report* (August 1997) overviewed factors requiring consideration regarding water source, wastewater treatment and disposal, and other infrastructure decisions at the Enchanted Skies Park. Water usage rates were estimated based on the facility information and a survey of similar parks and monuments where low flow systems and other conservation measures have been implemented. Several different wastewater treatment options were considered and evaluated for engineering difficulties, construction costs, and maintenance costs. The report also included information on geology, hydrology, water supply, and wastewater treatment options. Other issues addressed in the report include legal rights, permitting requirements, construction considerations, facilities and exhibits considerations, and safety and emergency considerations.

### **ArcView GIS Certified Training Instruction Ongoing**

Margie Krebs-Jespersen of the EFC staff completed the certification process to become an ESRI Authorized ArcView GIS (geographic information system) instructor. The Introduction to ArcView GIS course provides instruction in the basic skills needed to use the software's display editing, analysis, and presentation mapping functions. Classes are typically offered quarterly.

### **Visiting Faculty at the Southwest Indian Polytechnic Institute (SIPI) Ongoing**

Margie Krebs-Jespersen of the EFC staff taught a five-day course at the Southwestern Indian Polytechnic Institute in Basic Hydrology. SIPI is a National Indian Community College located in Albuquerque, NM. The Basic Hydrology course supports the Environmental Science, Industrial Hygiene, and Water Technology Programs. The 5-day course covered introductory material, surface water processes, groundwater processes, well design and construction, water quality, water pollution, and water management and legislation. Heather Himmelberger team taught the water management and legislation section of the course.

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## **New Mexico EFC Organization**

### **Management**

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