

**EVALUATION OF THE  
ALASKA NATIVE HEALTH BOARD  
SANITATION FACILITY  
OPERATION AND  
MAINTENANCE PROGRAM**

FINAL REPORT ON PHASE III PROJECTS  
AND PHASE II EXTENDED PROJECTS

VOLUME II: COMMUNITY REPORTS

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ALASKA NATIVE HEALTH BOARD AND  
U.S. ENVIRONMENTAL PROTECTION AGENCY,  
OFFICE OF WASTEWATER MANAGEMENT  
UNDER EPA ASSISTANCE AGREEMENT #990548-01

SEPTEMBER 2000



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## **Preface**

This report would not have been possible without the many individual Alaskans in communities throughout the state who operate and maintain water and sanitation facilities. They include water operators, bookkeepers, utility managers, city council members, tribal governments, and representatives from RMW, RUBA, and many others. They did the primary research for this project. Their observations, experiences, and insights provide the basis for this report.

Many others contributed crucial pieces of information to this report. Nina Miller of ANHB organized and managed the many different written records of the projects, including quarterly reports, correspondence, trip logs, phone logs, closeout interviews and work plans. Both Joe Sarcone and Nina Miller's phone logs and trip logs were a rich source of detail about what happened during the projects.

RUBA quarterly reports written by many different RUBA representatives gave the report another perspective that helped corroborate outcomes and give deeper insights into the communities.

The phone interviews done by ISER researchers Patricia DeRoche and Stephanie Martin gave us a much-needed overall perspective on the outcomes of the projects. Sharman Haley and Rosylind Frazier brought their experience from the first two phases of this project to keep the project focused on the relevant research questions. Eric Larson summarized all the records. Patricia DeRoche made the text clear and more readable. Clemencia Merrill helped format the document.



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## INTRODUCTION TO VOLUME 2

All the communities that received ANHB funding for O&M pilot projects are unique. Their individual histories, traditions, institutions, and residents shaped the projects. To understand how the distinctive circumstances in each community shaped the projects, in this report we take a closer look at each community.

Each chapter in this report describes one of the project communities in more detail. The chapters begin with an introductory overview describing the community's needs, its project plan, and the outcomes of its project. After this overview, we take a closer look at the step-by-step project implementation to investigate how the project evolved over time and to see more clearly how unique circumstances in each community shaped progress on the project. After reviewing the project's implementation, we describe the major outcomes and long-term effects of the project on the community.

For each community, we have also constructed a series of tables that appear at the end of each chapter. The first table lists general information about the community, such as population, ethnicity, history, a description of water and sanitation facilities, and the community's general expectations and needs prior to the project. Table 1 on page 3 provides a broad overview of these general characteristics for all communities.

At the end of each community chapter we've also included a second table that lists the tasks in the project workplan and an assessment of whether each task was completed. Table 2 on page 4 summarizes the tasks in workplans in all the communities.

As described in more detail in Volume I, our sources of data for these narratives and tables are varied. We rely extensively on quarterly reports submitted by the communities to ANHB to construct a basic timeline and checklist of which tasks were completed. RUBA quarterly reports provide another detailed source about what transpired in the communities and often allow us to both verify certain outcomes and elaborate on why tasks were or were not completed. In addition, phone logs and trip logs maintained by ANHB were invaluable for getting a closer look at the circumstances in each community as the projects progressed.

To assess the outcomes of the projects, we relied on the opinions and perspectives of those most directly involved with the project. Whenever possible, we looked for consensus among, at least, two or three reliable sources to corroborate that particular outcomes occurred. We collected perspectives from answers given by project participants during interviews conducted by ISER and ANHB. Their answers to these interview questions, as well as the comments made by project participants in field notes, phone logs, and quarterly reports mentioned above, provide the basis for our analysis of project outcomes.

We tried to gather as many different perspectives as are available in the written record. Our intent has been to organize, compare, and assess these many different perspectives to provide a broad, balanced, and fair assessment of the O&M pilot project in each community. This report is but the latest step in a long and continuing discussion about operating and maintaining water and sanitation facilities in rural Alaska. We welcome additional information, comments, and suggestions that would help continue this discussion.

**TABLE 1. STUDY COMMUNITIES**

	Regional	Water Operator	Sewer Operator	1997 Population	1990 Mean House hold Size	1990 Median Household Income	1990 Percent Below \$10,000	Water System	Sewage System
Community	Health							(Number of households served)	(Number of households served)
	Corporation								
<b>Phase III</b>									
Gulkana	Copper River Native Association	Tribe	Tribe	563	2.96	\$28,611	26%	Community Water System (circulating) (33); Washeteria/watering point	Gravity Main Sewer ( No Lift Station) (31); Septic Tank (2)
Hughes	Tanana Chiefs Conference	City	-	80	3.64	\$15,833	7%	Community Water System (circulating) (12); Washeteria/watering point (27)	Outhouse/Pit Privies (29)
Kaltag	Tanana Chiefs Conference	City	City	254	4.03	\$15,500	37%	Community Water System (circulating) (66); Washeteria/watering point	Gravity Main Sewer (No Lift Station) (66)
Kobuk	Maniilaq Assoc.	City	City	94	5.22	\$20,625	25%	Washeteria/watering point	Honey Bucket (self haul); Outhouses/Pit Privies
Kwethluk	Yukon-Kuskokwim Health Corp.	City; School	City	714	5.62	\$16,000	23%	Traditional sources (131); Washeteria/watering point	Community Operated Honey Bucket haul (30); Outhouses/Pit Privies (85)
Nightmute	Yukon-Kuskokwim Health Corp.	School	City	230	7.93	\$17,813	21%	Flush Tank and Haul (13 to begin, 41 at end); Traditional sources	Flush Tank and Haul (13 to begin, 41 at end); honey bucket
Wales	Norton Sound Health Corp.	City	City	170	3.47	\$15,000	24%	Traditional sources (54); Community Water System (non-circulating) (48)	Community Operated Honey Bucket haul (48)
<b>Phase II Extended</b>									
Deering	Maniilaq	City	City	158	3.57	\$15,208	10%	watering point (44)	honey bucket (44)
Nunapitchuk	Yukon-Kuskokwim Health Corp.	City; Village Council	City	489	4.34	\$17,083	19%	Community Water System (non-circulating) (20); washeteria/ watering point	flush haul (20); Community operated honey bucket haul (78)
Saint Michael	Norton Sound Health Corp.	City	City	341	4.28	\$23,194	18%	Community Water System (non-circulating) (79); watering point (36); haul tank (18)	Vacuum sewer (0 at start, 89 at end); Community operated honey bucket haul (89 at start)
Shishmaref	Norton Sound Health Corp.	City	City	542	3.83	\$15,625	30%	watering point; flush tank haul (20)	honey bucket (), flush tank haul (20)
mean				330	4.45	\$18,227	22%		
<b>Source:</b> Alaska Department of Community and Economic Development community database and project applications									

**TABLE 2. SUMMARY OF TASKS IN WORKPLANS AND TASKS COMPLETED BY COMMUNITIES**

Category	Task	Phase III Communities							Phase II Communities			
		Gulkana	Hughes	Kaltag	Kobuk	Kwethluk	Nightmute	Wales	Deering	Nunapitchuk	Saint Michael	Shishmaref
<i>Management</i>	General Utility Management		Yes									
	Utility Manager		Yes		Yes	Yes						
	Utility Management Training		Yes	Yes	Yes	Yes	Yes		No		Yes	
	Create Utility Board				No							
	Utility Board Training				No	Yes	Yes		Yes			
<i>Financial Management</i>	General Financial Management		Yes				Yes			Yes		Yes
	Bookkeeper						Yes			Yes		
	Computer		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	
	Rate Study			Yes				No		Yes	Yes	
<i>Operations and Maintenance</i>	Audit									No		
	Operator Training		Yes	Yes			Yes	Yes	Yes		Yes	Yes
	Operator Support			Yes	Yes					Yes	Yes	
	Purchase Parts	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
	Parts Inventory	Yes	Yes	Yes		Yes			Yes		No	
	Preventive Maintenance		Yes	Yes								
	Create Water Delivery Service								Yes			
<i>Community Education</i>	Water Quality Monitoring							No				
	General Community Education		Yes	Yes	Yes	Yes	No	Yes			No	Yes
	Homeowners Manual	Yes							Yes			
	Customer Agreement	Yes						Yes			No	Yes

**Sources:** Workplans, ISER Overall Interviews, ANHB Closeout Interviews, RUBA Quarterly Reports, ANHB Quarterly Reports.

**Key:** Yes: The Task was in the workplan and completed  
 No: The Task was in the workplan, but not completed  
 Blank: Not in the workplan

## **Gulkana**

The community of Gulkana is located at mile 127 of the Richardson Highway, 14 miles north of Glennallen. It is one of just two communities—out of about 34 that we worked with—on the road system. The 90 community residents, a mix of Natives and non-Natives, live on the east bank of the Gulkana (Kulkana) River at its confluence with the Copper River. Employment is limited, and primarily from the village council, seasonal construction, and the Wrangell-St. Elias National Park and Preserve. Subsistence activities of hunting, fishing, trapping and gathering supplement incomes.

Community water is drawn from a well, then treated and stored in a 100,000-gallon storage tank. A piped water and sewer system serves most homes, but individual water wells and septic tanks are also used by a number of residents.

Before the start of the pilot O&M project, the community's most pressing need was for replacement parts. For a long while the village had struggled to correct problems with their water treatment plant, but those problems were exacerbated by a lack of replacement parts. The community hoped the ANHB project would balance the operations and maintenance budget and enable it to become "self-sufficient" enough to pay for operations and maintenance without outside funding. The project work plan said the community would develop a parts inventory, write a homeowner's user manual, and develop a user's agreement for households.

Mostly through the efforts of the RMW, Gulkana developed a parts inventory and purchased the parts, but ended up spending more than the amount that was budgeted. Still, having the parts inventory enabled the community to make repairs more quickly, and thus save money. The issue that still remains unresolved, is how to pay for parts and continued maintenance now that the grant has run out. The city hopes to educate residents about the importance of paying their user fees and thereby collect some much-needed revenue. It is not clear from the record that the community has become as "self-sufficient" as it originally hoped.

According to the project mentor from the Copper River Native Association (CRNA):

The whole system has improved. They pay for more operator hours, and the community understands the need to increase operator hours. The water treatment operator is well trained and very enthusiastic about the new system. He really cares about the system and complies with testing and reporting [requirements]. Operator job satisfaction has also increased.

## **Implementation**

There is relatively little information about the implementation of this project. There are no RUBA quarterly reports and the community only submitted one quarterly report to ANHB. Therefore, we must rely primarily on phone logs and trip logs recorded by ANHB. There is, however, an abundance of information about project outcomes provided by project participants in ANHB and ISER phone interviews, which does help to make up for the lack of initial data.

### **Partnership team**

Project participants singled out their RMW for his helpfulness in going through manuals, helping the manager get up to speed on the project, and helping with the parts inventory. They praised him for “coming right away when they need him.” PHS was also very helpful and often came to Gulkana to assist the RMW. Two people from CRNA also helped a great deal, finding resources for the community and providing ongoing technical support.

According to CRNA, key people within the community also helped the project proceed. “Leadership was key to the success of the project. The council was [also] supportive. Without this key leadership the project would not have been successful.”

### **Inventory assessment**

Many people contributed to the development of the successful parts inventory. The RMW made extensive calls to ANHB and worked with the tribal administrator to develop a list of parts. He also arranged for them to order parts through the state to get a discount. According to field notes in June 1998, PHS staff also made a partial list of parts and equipment. On trips to the village, ANHB staff coordinated with the RMW, the water operator, and the tribal administrator to develop the parts list, order the parts, and transport the parts to the storage area. In the closeout interview with ANHB, the water plant operator said the parts inventory was going well:

We've got the replacement parts and the tools now, which are working real well. The chlorine and the filters are good to have in inventory to help us keep pace with the use of them. We see how far we go, and then when we get low we order them. It's kind of a supply and demand thing. Regarding a procurement process, well, we know a company that we can go through. But we still go through the RMW closely on that. They give us some help on the state side, and then we get some discounts on the order. We're getting ready to implement a system with a procurement form that you fill like that. We both have gone to a maintenance training class. It wasn't just for water, it was maintenance in general and we got some forms that we are starting to implement.

The water operator also identified several situations this winter when having the parts on hand allowed to them to respond more quickly and save money:

One building, the Teen Center, the way the piping ran it had a tendency to freeze. We had paid [someone else] to have the pipes thawed the year before...[This year] I got all the parts, paid \$30 or \$40, and thawed the building [on our own] about three times. That's been a major cost savings right there.

Then there was one other [area] that was really a major savings, the clinic. The service line going to the town "loo" is far away from the water line, so I have to use a circulating pump. The power to the circulating pump got knocked out and (also the power) to the heat tape. We lost electric there for some reason over a weekend. It froze the line, but I was able to fix it that night, instead of having to wait. It was like 30-40 below when that happened. That was a real lifesaver.

In times past we've had problems with a junction box down by the river where the lines from the well come over. We used some of the funding to insulate that, because freeze-ups were a problem in the past. We didn't have any problems with it this winter. It didn't freeze up.

Another example was the heat exchanger in the water plant went bad. That's the thing that heats up the water and keeps it from freezing, while it is circulating. We didn't have the replacement part on hand, but we were able to use the money and order it right away. We actually got a rush on it and received it in three weeks.

## **Community Education**

Gulkana's workplan called for developing a homeowner's manual to explain the proper care and basic maintenance of the household wastewater and drinking water systems. The intent was to help the homeowners maintain their household plumbing and become self-sufficient with their own repairs. The plan emphasized winterization and preventing freeze ups.

In the closeout interview, the tribal administrator said the manuals were done, but hadn't been distributed. Employees plan to take them to the individual homes and hand them out. In interviews with the tribal administrator and the water operator it was clear they had thought carefully about how to reach a broad audience and get the community more involved in maintaining the system:

We stressed getting prepared for winterization . . . in the manual. Other than that, we hope they read it and peruse it. That should help. We are trying to maintain more of a visual orientation on it too—especially for the elders here in the village.

They [the manuals] are in a loose-leaf format, too, so it would be easy to add an addendum or [new] sections. We also had a poster contest for the kids to do a water poster, and we included all their drawings in the book.

## **Customer Use Agreement**

Another part of the Gulkana project plan was to have customers sign a customer use agreement spelling out their responsibility for paying fees and maintaining the system in their homes. The water operator said the community is still working on the agreement and that PHS might be able to provide examples from other villages. The tribal administrator said she was hoping for more involvement from CRNA in developing the customer use agreement. She wanted the use agreement to spell out fees more clearly, to help increase collections:

We have to get the resolution for that from the Village Council and go around and have them sign it as we distribute the resident manual to them. Within that agreement, I would like to state that within a few days if they haven't paid they would have to be cut-off until they start paying the cost. The aim would be to increase your collections so you could put the money aside for preventive maintenance.

## **Community Support**

There are several indications in the record that the community of Gulkana was aware and supportive of the O&M pilot project. The water operator said people were happy that the water didn't freeze up. Beyond the community's concern for freezing pipes, the city council was aware of the project.

A staff person from CRNA commented that the community is becoming more supportive of water and sanitation maintenance. He suggested that once the homeowner's manual is complete and distributed, community support would increase. He also believes, since water quality is a huge concern, that support will increase once the new system comes on-line. "People don't want to pay for dirty water, and right now the water is dirty because the system is old. With a new system and clean water the community should be more willing to pay fees for water."

## **Mentor Organization**

Gulkana had a long-standing relationship with its mentor organization before the ANHB project. CRNA provided technical and support services for water systems in five villages in the area of Gulkana. It employs four water operators, all with OIT certification in either water treatment or water distribution. The interesting thing is that the village of Gulkana is the only community served by CRNA that has a water system. As a result, when Gulkana receives on-site training or does maintenance work on its system, operators from CRNA participate. The Gulkana Village Council's piped water and source system also falls within CRNA's area of service, so it provides backup operators for the Gulkana system.

Overall, the village was not completely happy with the frequency of contacts they had with the mentor organization. There was some confusion in the beginning with the first utility manager, who may have been under the impression that ANHB and CRNA would be doing much of the work on the budget and community work plan. Phone logs indicate the tribal administrator did try to contact CRNA, but that there were considerable delays in setting up meetings. Also, interviews indicated that the community developed the homeowner's manual on its own, after waiting for help from CRNA.

The mentor relationship seemed to improve after an important meeting in June 1999, when the RMW, the water operator, the tribal administrator, ANHB, and CRNA got together in Gulkana to discuss the project in detail. The meeting covered many topics and helped define the mentor/community relationship between Gulkana and CRNA. It was the first time all these project participants had been together in one room, discussing the scope of the O&M project, the need to coordinate operator training, and—more broadly—the operations, maintenance, and management of the water and sewer system for the village of Gulkana.

At the close of the pilot project, Gulkana and CRNA assessed the outcomes somewhat differently. The tribal administrator described the primary contributions from CRNA as discussing ideas for the user's manual, sharing information, reviewing the completed manual and making copies, and helping develop the homeowner's agreement. She felt that Gulkana itself did most of the work on the manual, with CRNA acting as a reviewer.

The mentor agency (CRNA) took a broader view of the relationship. It likely included in its assessment many of the ongoing support activities it was already providing the community, on an ongoing basis, before the O&M pilot project began. The CRNA representative said explicitly, "The effectiveness of the mentor part of the program seemed to be due in large part to the longstanding relationship between Gulkana and CRNA, and the high level of expertise at CRNA."

CRNA listed many ways it supported Gulkana:

- 1) inventorying parts, tools and supplies
- 2) designing a homeowner's manual
- 3) meeting with villagers, operators, administrator, council
- 4) providing technical support
- 5) helping drain and sanitize 100,000-gallon storage tank
- 6) providing boiler training
- 7) learning more about Gulkana's equipment
- 8) helping with water quality checks and sampling
- 9) removing old refrigerators from Gulkana and getting freon taken out
- 10) coaching [tribal] administrator to get more involved and not make operators responsible for everything
- 11) providing funding so that [tribal] administrator could become certified
- 12) helping define policies included in handbook

While it is clear CRNA made contact and offered help during the pilot project, the community was not entirely satisfied with the help it received. Also, it is not clear from interview responses whether the support that CRNA provided was part of the ongoing relationship or specifically part of the pilot O&M project. The services provided by the mentor may include activities that were not part of the ANHB grant. If this is the case, then CRNA might have provided many of these support services, even if the pilot O&M grant had not been implemented.

## **Outcomes**

From the perspective of project participants in the community, the ANHB project helped them and made possible long-term changes that would not have been possible otherwise. Most important,

they completed an inventory, determined what they need for the new system, and used some grant money to purchase new parts and tools. In the closeout interview, the water operator talked about how having spare parts on hand saved considerable money:

The focus was having a parts inventory, and the ability to make repairs when needed. They helped us financially so we could have a good inventory. There was also some testing of our water supply. It's given us the inventory on hand, and tools.... If we have the tools and supplies on hand it should follow through. On the inventory control, we've gotten some older computers we received. We're going to see about putting one down there for inventory control.

In addition to the benefits of having spare parts available, several participants, both inside and outside the community, mentioned improved operations as being an important outcome of the ANHB project. The CRNA representative noted, "The whole system has improved: they pay for more operator hours and the community understands the need to increase operator hours."

The grant provided support to the water operator and improved his ability to maintain the system. The CRNA representative commented, "The [water] operator really cares about the system, and compliance with testing and reporting has totally changed. Operator job satisfaction has increased, highly. He is well trained and very enthusiastic about the new system, and he is actively interested in training." The water operator concurred: "Every time I get the opportunity to go to training, I come home and get some hands-on experience with it at the water plant. Work on that and it pays off."

The pilot project gave Gulkana the time and funds to develop policies and put them in the homeowner's handbook. The participants hope that the manual will further improve operations, and that homeowners are better able to care for and maintain their own systems.

The remaining unresolved issue is how Gulkana will pay for parts and continued maintenance. The community did not become as "self-sufficient" in paying for parts and maintenance as it had hoped. According to ANHB staff, "One key to becoming more self-reliant will be doing more community education to encourage homeowners to pay their fees." CRNA was less optimistic about a small community's ability to raise the funds necessary to sustain a sanitation system in the long run:

They have to realize that a certain level of money needs to go to small communities. There was a program providing \$25,000 in funding but it was taken away. Can a small village support a sanitation system using fees alone? Not likely. Communities need money to help maintain their systems. There is not enough money to hire people. Villages end up relying on volunteer labor, which is not a sustainable way to maintain a system. Providing money to small communities is important to sustain water plants. Trained operators are vital. State and regional health corporations need to help. People will get sick otherwise.

**TABLE 3. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR GULKANA**

<b>TABLE 3. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR GULKANA</b>	
<p><b>Context</b></p> <p>The ninety residents of Gulkana live on the east bank of the Gulkana (Kulkana) River at its confluence with the Copper River. It lies at mile 127 of the Richardson Highway, 14 miles north of Glennallen. The most significant thing to note for the purpose of this project is that Gulkana is only one of two communities out of nearly 40 that we're working with that is on the road system. The community is presently a mixed Native and non-Native population. Subsistence activities supplement incomes. The sale, importation and possession of alcohol are prohibited. Residents of Gulkana depend somewhat on subsistence hunting, fishing, trapping and gathering. Employment is limited to the village council and seasonal construction; there are no businesses in the village. The Wrangell-St. Elias National Park and Preserve provides some federal employment.</p>	<p><b>Facilities</b></p> <p>Water is currently derived from a well, is treated and stored in a 100,000-gallon tank. An infiltration gallery on the Gulkana River, and water treatment improvements, are under construction. A piped water and sewer system serves most homes. Individual water wells and septic tanks are also used by a number of residences. Gulkana has piped water and sewer for the whole village. Gulkana gets its water from a well near the river. They have primary sewage treatment in several large septic tanks. Gulkana has had trouble getting good quality water. They stopped using fluoride after the death of a boy in another village and now use chlorine. The system is old. It doesn't have any clean out. Over the years it has filled with silt and mineral deposits. The new system will have clean-outs and a hydrant to flush the system. They are looking for new well sites but so far test wells have been salty.</p>
<p><b>Expectations 1998</b></p> <ul style="list-style-type: none"> <li>• Their most pressing need is for replacement parts. The Village has struggled to correct problems with the water treatment plant. This problem has been exacerbated by a lack of replacement parts. Currently, the Village has no deferred maintenance but it has expended its entire inventory of replacement parts. Tad Kehl, the tribal administrator said to ANHB Joe Sarcone there is quite a bit of challenge to the community in maintaining the water treatment and distribution facility. His take on it is that there is a need for the replacement parts especially the more expensive pumps that are not in their inventory. Its not a deferred maintenance issue because the plant is running right now. It's an issue of having no inventory and not being able to afford an inventory. Tad wants to be able to have a reasonable amount of inventory on hand to deal with operation and maintenance issues. He feels that if they were to get a shot in the arm from Alaska Native Health Board to bring their inventory up to a reasonable level they would be able to then sustain the inventory of spare parts through an effort to improve and generate revenue. This would include reducing operation costs through public education and by being conscientious about collecting fees for services for the water and sewer system.</li> <li>• They also see villagers becoming more self sufficient in the maintenance of the plumbing system within their homes. It will educate villagers in the proper care and use of their end of the water system.</li> <li>• They see the village becoming self-supporting for its O&amp;M needs. They believe the project will balance the O&amp;M budget within one year and make them self sufficient in the future for their O&amp;M needs.</li> </ul>	
<p>Source. Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ISER Mentor Interviews, ANHB Trip Logs.</p>	

**TABLE 4. SUMMARY OF IMPLEMENTATION FOR GULKANA**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	Gulkana Village Council, Alaska Native Health Board, CRNA (Copper River Native Association), PHS/OEH&E, VSW Operations Assistance Unit	Remote Maintenance Worker; PHS representative; Alaskan Native Tribal Health Consortium representative; water system operators; CRNA representative; village secretary; tribal administrator; Gulkana Village; CRNA health director and Gulkana village council board member.
Inventory Assessment and Development	Develop a replacement parts inventory would cost \$30,000.00. This would allow the village to be self-sustaining for O&M within a year. Once parts are taken from the new inventory they would be replaced from user fees currently being collected and allocated to the maintenance budget.	The RMW made extensive calls to ANHB and worked with the tribal administrator to develop a list of parts. He arranged for them to order parts through the state to get a discount. According to field notes PHS in June 1998 made a partial list of parts and equipment. There was extensive coordination with ANHB on his trips to the village, with the RMW, the water operator, and the tribal administrator to develop the list, order the parts, and transport the parts to the storage area. Still working and talking about collecting enough revenues to regularly replace parts.
Community Education	User's Manual: This will be developed locally as an easy to read manual on the proper care and basic maintenance of the household wastewater and drinking water systems. The intent is to help the homeowner maintain their household plumbing and be come self-sufficient for repairs with an emphasis on winterization and how to prevent freeze up.	"We have the user's manuals done. They just haven't been distributed. We had put the booklet together after the copies were made. Plans to distribute it to individual homes. We'll take it to individual homes and hand it to them. They put in a section on different types of pipes and tools, places to get parts and stuff like that for the homeowner. They are in a loose-leaf format, so it will be easy to add addendums to that section. We trying to maintain more of a visual orientation on it too -- especially for the elders here in the village."
Customer Use Agreement	The village council will develop a customer use agreement that details village and homeowner responsibilities for service connections and the operation and maintenance of the water and sewer systems.	"Still working on the customer use agreement with the project engineer at ANTPA, with Tribal Health Consortium on that one. Village doesn't feel that they got all the assistance they needed but understands that CRNA was very busy. Mark reviewed work and really helped when he could. We have to get the resolution for that from the Village Council and go around and have them sign it as we distribute the resident manual to them."
Budget	Some time for water sewer operator, tribal administrator to oversee community education, user agreement, and replacement parts procurement. Replacement parts including pumps, valves, filters, tools, etc., parts and supplies for the user's manual and users agreement. Totals: ANHB \$34,000, Community \$6756.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## Hughes

Hughes is located on a 500-foot bluff on the east bank of the Koyukuk River. It is about 115 air miles northeast of Galena and 210 air miles northwest of Fairbanks. Hughes is a Koyukon Athabascan village of approximately 80 residents who live mostly in the traditional Native way. Subsistence activity is the mainstay of the local economy. Most cash is earned from part-time jobs with the city, school, clinic or store. This is sometimes augmented with seasonal income from a variety of jobs, trapping and skilled craftwork. In September 1994, floodwaters destroyed and swept away nearly all the village buildings, homes, and food caches with stored food for the winter. The community is still recovering from that devastation.

The village first established a water distribution and sanitation system in 1968. The initial system consisted of individual household septic tanks. These worked well for a number of years, and in 1973 the system was expanded. Unfortunately, during the winter of 1984 the septic system froze, and residents were forced to construct about 30 outhouses. Today the majority of residents haul treated water from the central watering point and use a combination of the honeybucket and the outhouse, which is not much different from much earlier days. Very few homes have plumbing, but the school, clinic and city offices do have plumbing and are served by a well and septic tank.

In the long term, the community wants to move toward a three-phase water, sewer, and solid waste project. The first phase would create a new solid waste site; the second phase, a water and sewer connection to older homes; and finally the third phase would bring water and sewer to the rest of the community. Hughes hoped the pilot O&M project would help the community work toward this three-phase goal by improving its existing water and sanitation facility.

To accomplish this, community leaders wanted their water plant to be brought up to good running condition with new parts and improved maintenance. They also wanted to improve their financial management, and train their operators, utility manager, and clerk. In addition, they wanted to educate community residents about the water and sewer system, the washeteria operation, and the importance of user fees to the operation of the utility.

This highly successful project achieved all it set out to do. Hughes successfully purchased a new computer, and the utility clerk went through training to learn how to operate it. The new computer system is helping Hughes improve its billing and collections, as we learned in interviews:

Operator training turned out really well. Both of our water plant operators are now certified, and they have a preventive maintenance plan. They got extra spare parts and developed an inventory. In addition, they had a couple of community meetings and let people know what we are doing. They're trying to develop more community education for the watering system that goes to the houses.

A large reason for the success of the Hughes project was the utility manager. She went through extensive training and was recognized by the TCC/OEH (Tanana Chiefs Council/Office of Environmental Health) and honored with the 1998 utility manager of the year award.

The only stumbling block during the project was creating a mentor relationship with the mentor community, Tanana, and Tanana's utility operator, Too'gha, Inc. Initially there was some uncertainty

about the role of the mentor community, and long delays occurred before anyone figured out how to address the problem. Hughes took the initiative and arranged a joint training that was beneficial for both communities.

The Hughes participants in the joint training felt they learned a great deal, both from the training sessions and from their mentor community, and identified some particularly important points:

- They learned how to set up a good system for billing and records. They also learned that a better collections policy, an up-to-date billing system, and community education for users help to stabilize the utility financially.
- They observed that both of the mentor community operators are trained, and realized that one of the keys to success was keeping operators active, trained, and making sure they understood their responsibilities.
- Council members learned from their joint training in city administration how to run better meetings and better manage the city. They brought what they learned back to the community and began putting it into practice at their council meetings. They felt the improvements in city administration were likely to create benefits far beyond operation and maintenance of the utility.

The following narrative for the implementation of this project comes straight from the very complete and thorough quarterly reports submitted to ANHB. Hughes was one of the few communities that met nearly every request for detailed information about finances and project implementation and evaluation.

### **Partnership Team**

Those who participated in the project noted that the RMW was very important to the success of the project. He helped water plant operators keep plants going and do preventative maintenance. Also working extensively with the community were two RUBA employees who remained in regular contact with the city and provided ongoing training and support.

### **Utility Management Training**

Detailed quarterly reports submitted to ANHB say the city of Hughes held an “Above Ground Storage Tank” training session July 20 and 21, 1999 for city employees and anyone who needed the “HAZWOPER” refresher eight-hour course. Eleven local people attended and completed the course. Both primary and alternate water plant operators and the utility manager successfully completed this course. In addition, they arranged two training sessions for the council, with participation of the utility manager, utility clerk, and water plant operator.

Now that the project is over and time is reduced, the utility clerk and the utility manager will manage the utility. They split the duties: the utility manager does the budgeting, financial reports and all administrative work, while the utility clerk does all the billing, collecting, and assisting the water plant with ordering parts.

## Utility manager

The written record demonstrates that Hughes' utility manager is an extremely accomplished manager, and certainly deserves the award she received from TCC/OEH as 1998 Utility Manager of the Year. As described in the table below, she went through extensive training in utility management and computers and also attended numerous conferences that helped her develop a network of support for her activities. She is an invaluable asset to the community and the state. It is abundantly clear from the record that her leadership and management were crucial to the success of this project .

<b>Utility Management Training and Conferences Attended by Utility Manager and Utility Clerk from Hughes</b>
<ul style="list-style-type: none"> <li>• Attended the VSW CIP Training on 9/10/98, shared our plans with the engineers from TCC, PHS, and VSW.</li> <li>• Completed on-site computer training on Dec 14-17, 1998 with Wilson and Wilson.</li> <li>• Selected by the TCC/OEH staff to attend a meeting with HDR consulting to help develop a Guide for Sanitation Facility Projects.</li> <li>• Utility clerk is scheduled to attend the Utility Management Training on Feb 1-5, 1999.</li> <li>• The utility manager went to Fairbanks on June 22-24, 1999 for more computer training with Wilson and Wilson; They came to Hughes for one day additional training on July 1, 1999.</li> <li>• Attended the Alaska Forum on Environment in Anchorage on Feb 7-10, 2000.</li> <li>• RASC quarterly meeting on Feb 29, Mar 1, 2000.</li> <li>• ANTHC SDS meeting on March 22, 2000 and on Oct 15 - 17 1999 attended the Alaska Tribal Environmental Conference in Anchorage.</li> </ul> <p><i>Source: Quarterly Reports submitted by community to ANHB.</i></p>

## Computer

The utility manager and the utility clerk purchased and installed a computer and received extensive training to run it. Quarterly reports tell us that they ordered computer hardware and software in September 1998 and sometime before December 1998 it was set up and running.

The utility manager and the utility clerk received onsite computer training in February 1999. The utility manager then went to Fairbanks in June 1999 for more computer training with Wilson and Wilson. Part of the Wilson team also went to Hughes to deliver one day of additional training in July 1999; both the utility manger and utility clerk attended. The utility clerk also attended the Alaska Municipal Clerks conference in Fairbanks in February 2000.

In the closeout interview, the utility manager said the computer had been very helpful:

The new computer changed how we did billing and collecting. It's better. It's more self-explanatory and faster. We can do more things in little time. I think it gave the utility clerk a lot more confidence in herself and in her work. Especially the computer [work].

We do monthly reports, expenditure and revenue at every regular meeting. Council members noticed that we could produce a lot [of financial reports] in a little time. That way we have our financial reports set up and stuff is easier for them to read.

### **Community Education**

A community meeting was held in August 1998, and a city council meeting in September 1998, to discuss proper use and maintenance of the utility, and the importance of user fees to the utility operation. RUBA also conducted an educational meeting for community members and utility users in April 1999. Community education is also continued through monthly notices and inserts in monthly user bills.

### **Operator Training**

Extensive and detailed quarterly reports chronicle the progress toward certifying water operators. As a result of this project, the community now has two certified water plant operators.

### Training Attended by Operators in Hughes

- On-site water plant operator training Oct 19-22, 1998 with TCC/RMW. Planning for the three operators to take the state exam on 3/5/99 for certification.
- Nov 3-5, 1998 alternate water plant operator I successfully completed disaffectation and fluoridation course.
- Dec 2-4 1998 both alternate water plant operators successfully completed boiler maintenance courses. Primary water plant operator gave the alternates on-site on-the-job training; he agrees their progress is continuous.
- All three water plant operators have completed and submitted exam applications to DEC to take the state exam on March 5, 1999. Utility manager has ordered and distributed study materials to all three water plant operators in advance. They are all studying.
- Primary water plant operator took state exam on March 13, 1999. Alternate water plant operator II attended OIT training in Minto on April 12-16, 1999. He took the state OIT exam then, but did not pass. He missed passing by 11 points.
- On-site operators training April 28-30, 1999 by TCC/RMW. Alternate water plant operator I quit on 4/6/99.
- During the early summer of 1999, water plant operator primary provided on-the-job training for alternate water operator II. Utility manager provided both the water plant operators with study materials to study for the state exam scheduled for October 1999.
- TCC/RMW came to Hughes on July 12-15, 1999, and provided training on cleaning water storage tank, boilers, and back oil fired hot water tanks.
- During the fall of 1999, water plant operator (primary WPO) provided alternate water plant operator II with on the job training.
- October 9, 1999, primary water plant operator and water plant operator II took the state examinations.
- October 26-28, 1999, primary water plant operator and water plant operator II attended the first aid and safety course in Fairbanks sponsored by TCC. Water plant operator II successfully completed this course. Both operators will be studying to retake exams again. They are both working hard towards certification.
- Alternate water plant operators II and III completed the Boiler Maintenance training on Nov 9-11, 1999. They both received certificates of completion.
- Primary water plant operator and water plant operator II attended and completed the Electrical Controls training in Fairbanks on Dec 7-9, 1999.
- Primary water plant operator and water plant operator II successfully completed the water treatment OIT training in Tok on March 6-10, 2000. The primary water plant operator passed the Level I state examination. Water plant operator II passed the OIT state examination.

*Source: Quarterly Reports submitted by Hughes to ANHB.*

## **Replacement Parts**

Throughout the project, and in every quarterly report, the community identified the need for spare parts. The primary water plant operator had a little initial difficulty preparing the spare parts list. The utility manager helped research vendors, prices for spare parts, necessary replacement equipment, and supplies and also ordered parts. The quarterly reports say there “has been a tremendous improvement to our water system as a result of the replacement parts” made possible by the grant. The report adds that the improvements in the operation of the utility, and the availability of spare parts, give the water plant operators pride in their work.

## **Community Support**

The utility manager’s assessment of community support was glowing:

The City of Hughes is very appreciative for these funds distributed for our very important project. The city council and the community people are very happy we have these additional funds for our system. The whole community benefited from this project. The project was successfully completed, and the community was satisfied with everything good that came out of this project.

Operators are happier. Community support has also increased. The council members are very pleased. Overall there has been an increase in support.

## **Mentor Community**

The mentor community arrangement was a stumbling block for some time. Hughes made contact with Tanana, but there were delays in putting together the workplan and budget, and there was confusion about what was expected of the mentor community. Hughes' utility manager reported that mentorship worked best when there were specific activities like workshops. The manager also suggested that the mentor program could be strengthened if communities had a clearer idea, at the outset, of what was expected of the mentors and the communities being mentored.

Though training was not originally part of the workplan, Hughes organized a RUBA joint training for itself and the Tanana Council. The training was designed primarily for newly elected council members and topics included council responsibilities and differences between first- and second-class cities. Too'gha, Inc. board members and the Tanana City Council also participated in training. The original workplan budget for the mentor community was spent on this joint training.

Both communities found the joint training very useful. The utility manager said, “This was a very productive workshop, everyone enjoyed it.” Ironically, it turned out that staff members at Tanana's utility were new, and not much more advanced than Hughes' staff. The utility manager and others from Hughes ended up providing technical assistance to the water system operator in Tanana because that person was very new. From the perspective of the mentor community, the training was also valuable. The utility manager from Tanana said:

The training helped with technical skills and problem solving. Tanana is in the process of doing development planning, and when they heard and saw what we were doing they thought they could take these ideas home with them and use them. We think it is good to get together to hash things out and learn from each other. It motivates groups to pitch right in and work hand-in-hand in cooperation. After we had our sessions this winter, Hughes indicated that they wanted to do this again, and so do we.

The utility manager also thought that Hughes might have learned something from Tanana. He noted that Tanana had a way of going beyond personal differences to deal with the pressing needs of community business:

We also discussed the problems of people dealing with issues on a personal level. We try to put our personal feelings aside when dealing with community issues, because we have learned that personal feelings can get in the way of community business. In the past, our village had those problems too; the City Council and the Tribal Council wouldn't be in the same hotel together. Now we talk to everyone about everything. It's just for the community's benefit. It's better to work this way, and Hughes wanted to bring this idea back to their community.

## **Outcomes**

Hughes participants in the ANHB project believed it was very good for the community and that the benefits would be even greater over time. They identified several long-term outcomes, and spoke of them in the closeout interview with ANHB and the overall interview with ISER:

- Now we've got a good system set up for billing and records. We've got good records for keeping track of what is going on in our budget. We also learned that a better policy, an up-to-date billing system and community education for users help to stabilize the utility financially.
- We educated the community about user fees. Everyone now understands the importance of user fees.
- We have had a rate increase and collections are up in terms of amount and number of households paying. Because of budget cuts to state revenue sharing, they raised fees. We gave users notice about the increase and collections rose both in terms of total dollars collected and number of households paying. Right now it looks like we are going to make it through the year on our regular budget. But our community is so small, and we can only collect so much from our users. We really try hard to keep within our budget, but most of the time we do subsidize from the rest of the city budget.
- We got better training and certification for three operators, making them better able to maintain the plant on their own. The key to success is to keep operators active, and keep them trained. Make sure that operators understand their responsibilities.
- The council members were very pleased with the outcome of the whole thing. Council members are using the training that they had in Tanana at our meetings. They say: "This is what we learned, and this is what we are supposed to do, and now we are going to do it." Those kinds of things I think will carry on.

**TABLE 5. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR HUGHES**

<p><b>Context</b></p> <p>Hughes and its eighty residents are located on a 500-foot bluff on the east bank of the Koyukuk River, about 115 air miles northeast of Galena and 210 air miles northwest of Fairbanks. In September 1994, floodwaters destroyed and swept away nearly all of the community's buildings, homes, and food caches for the winter. Residents are still rebuilding homes and facilities. Hughes is a Koyukon Athabascan village and traditional ways of life persist: potlatches and dog races attract visitors from surrounding river villages. Subsistence is the focus of the local economy. Salmon, freshwater fish, moose, black bear, rabbits, waterfowl and berries are utilized. Caribou are also sought when available. Most cash is earned from part-time jobs with the city, school, clinic or store. BLM emergency fire fighting, construction work, skin sewing, beadwork, sled building, and trapping also provide seasonal income.</p>	<p><b>Facilities</b></p> <p>In 1968, a community water distribution system and individual household septic tanks were constructed. Initially the system worked well, and was expanded in 1973. However, the system froze during 1983, leaving only a few facilities operational. 30 outhouses were constructed in 1984 to replace the frozen septic systems. Hughes residents currently haul treated water from the central watering point and use honeybuckets and outhouses. Very few homes are plumbed. The school, clinic and city offices are served by a well and septic tank, and are plumbed.</p>
<p><b>Expectations</b></p> <p>Our community vision is to start our three phase water, sewer, and solid waste projects: First phase: New solid waste site with access road; Second phase: W/S to all older homes; Third phase: Water and sewer to rest of community. This project will help us develop a better water/sewer facility for the community. Our water plant will be brought up to good running condition, new parts and better improved maintenance. The new computer will better our financial management. Training for the water plan operators will definitely improve our facility. Training for our water plan operator, utility manager, clerk will do us good in the long run. Our water plant operators (3 total) will be better trained and will be able to maintain the water plant on their own. The TCC Remote Maintenance person comes from Fairbanks, when we have a crisis at our water plant. Better educate the community residents about the water, sewer, washeteria operations, and how important the user fees are to the operation of the utility. Hughes was one of the few communities that provided full documentation on what their current finances and hours were in the pre-evaluation.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ISER Mentor Interviews, ANHB Trip Logs.</p>	

**TABLE 6. SUMMARY OF IMPLEMENTATION FOR HUGHES**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	<i>Need to get details from work plan</i>	DCRA RUBA representatives; RMW trained and assisted the operators. “We were very satisfied with the work completed this trip.” Worked with TCC/OEH staff on training for the water plant operators, utility clerk. TCC/OEH staff also assisted us with ordering parts. People from Tanana who went to the workshop; and the council members from here; and the utility users; water plant operator; and the OEH staff.
Utility Management Training	This activity will provide training to the water plant operator, utility manager and City Council.	Had a total of two training sessions with the council, utility manager, utility clerk and the water plant operator...either working with DCRA or TCC. Now that the project is over, the utility clerk and the utility manager will manage the utility. The utility manager does the budgeting and all the administrative stuff, financial reports, and the utility clerk will do all the billing, collecting, and assisting the water plant with ordering the parts and stuff.
Utility manager	This activity includes the following: Defining the role of the utility manager and identifying a person to be manager. The manager will attend a workshop whenever it becomes available.	Utility manager went through extensive training. She received an award from TCC/OEH for 1998 Utility Manager of the year.
Financial Management	This activity also includes establishing an effective billing and collections system. This will require purchase of a new computer, hardware and software, and training for the office personnel.	Successfully purchased and set up a computer. Utility clerk went through training and set up the new system. The new computer changed how they did billing and collection: It's better, more self-explanatory and faster. They can do more things in little time. It gave the utility clerk a lot more confidence in herself in her work. Especially the computers.
Community Education	This activity will provide information to the community members and utility users.	Had a couple community meetings and let people know what they were doing. Tried to get more education for the water system that goes to the house. “If we had any changes or anything that we know of, we do let them know with their monthly bills.”
Operator Training	Under this activity we will send local utility operators to appropriate training or workshop.	Operator training turned out well. Both water plant operators became certified. The primary was re-certified and the alternate II was certified OIT in wastewater treatment. They do have a preventive maintenance plan and work on that, and that seems to be working out.
Replacement Parts Inventory	This activity will identify and purchase necessary replacement equipment, spare parts and supplies; it will also include installation of equipment or parts, which need immediate replacement.	“Since we got this grant we got extra spare parts, and they know what to have on hand. They pretty much do what they need to do. We do have an inventory right now of all the spare parts, and they do work with [the utility manager] when they need parts.”
Budget	Water plant operator, utility manager, travel & per diem for training; computer hardware & software; training workshops; equipment, parts and supplies for the replacement parts inventory; facility expenses, and administration overhead. Total: ANHB \$40,000, Community \$50,716.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## **Kaltag**

The village of Kaltag is about 75 miles west of Galena and about 335 miles west of Fairbanks. The community is on a 35-foot bluff at the base of the Nulato Hills on the west bank of the Yukon River, just west of the Innoko National Wildlife Refuge. This largely Koyukon Athabascan village has a population of approximately 254. Most local jobs are with the school, local government, the BLM emergency fire fighting, or commercial fishing and fish processing. Nearly 20 residents hold commercial fishing permits, and a seafood processing plant is currently under construction. Still, subsistence is an important part of the local economy.

Kaltag has had piped water and sewer since 1972, and the majority of houses are fully plumbed. Community water is pumped from a well and is treated. A new washeteria opened in 1998. Right now the community's landfill does not have a permit. The city has received funds to relocate the landfill, construct an access road, and acquire a refuse vehicle and containers. That work has started.

Kaltag had one of the more ambitious and most successful projects among those in Phase III. In its application, the community emphasized that it wanted to give homeowners a better appreciation, understanding, and awareness of their water and sanitation system and to provide a quality service to customers. The community planned training in utility management for the utility board, city council, and staff. Hiring a washeteria attendant for one year was also part of the plan. Kaltag also wanted to purchase a computer, keep better track of finances, educate the community about the system, develop a preventive maintenance program, compile an inventory of equipment, and purchase spare parts.

The project team completed nearly all of these tasks, thereby helping the community better manage, operate, and maintain the water and sanitation system. In the closeout interview with ANHB, the utility manager reported that the utility management training really helped the city council get a new understanding of the system. In addition, they successfully installed a computer—and got training to use it—to keep better track of their accounts. The plan to have paid washeteria attendants was also considered a great success.

The water operator took the lead in developing a preventive maintenance schedule. He was also instrumental in educating the community about the importance of water and sanitation. It is clear from the closeout interviews for Kaltag that the personal attention of the water operator was an effective form of community education. He worked with homeowners one-on-one to help them understand how their system works and what type of care is required to maintain it. The water operator was well known for his extraordinary effort. In fact, his work is so outstanding that he was recognized with a special award given to water operators in small communities.

Those involved with the project in Kaltag said that one of the most important outcomes of the project was a better understanding of their system and an appreciation of its significance to the community. They also noticed improved communication and cooperation between the city council and the city's administrative and sanitation staff. When they traveled to their mentor community, Nulato they believed they were only individuals going to learn about their mentor's water and sanitation system. But by the time they returned home, they felt more cohesive. They were proud of their community, and most important, they wanted to work together to make a better water and sanitation system in Kaltag.

The major difficulty continuing to plague Kaltag is financial management. RUBA quarterly reports consistently note that the system is run on a shoestring. Additionally, there are serious cash flow problems created by a lack of money in the community. Several factors contribute to this situation: 1) lack of an agreement with the school, 2) delinquency problems, and 3) poor cash management. Administrators are looking at financial incentives to motivate payment. They are also examining a larger question: how much money is actually available within the community to pay bills.

## **Implementation**

The records for Kaltag are quite comprehensive, and often speak very clearly about what occurred in the community. They convey a lot of interest and concern about the details and success of the project.

### **Partnership Team**

Kaltag administrators report that all agencies working with their community, particularly the ANHB, contributed to their success. All were valued and appreciated for the support and encouragement they gave, as well as for their own particular expertise. For the city clerk, RUBA support in computer and financial training was the most important. For the water operator, the Remote Maintenance Worker program was really helpful.

### **Utility Management Training for City Council**

According to the quarterly reports, city council and staff training was held on Feb 23-25, 1999, and facilitated by DCRA, TCC, and the RMW. During the closeout interview, the city clerk detailed the many things the council had learned:

This training was very beneficial to the staff as well as to the council. We discussed the planning process - utility master plan, capital equipment plans. How important it is to get community involvement on projects. Went over the organizational chart for the city of Kaltag. The staff and council didn't know the proper chain of command. Each director and the city clerk will work on a chart for each department; supervisors will be included once completed. Discussed personnel policy and job description, just cause and at will employment, having policies for EEOC, civil rights and sexual harassment, importance of evaluation, and the grievance policy. We also went over the utility ordinance, and user agreements, especially the Kaltag school, and city of Kaltag agreements.

The mayor agreed that the training helped the council better understand the system:

The utility management training, I think, really helped the city council as a whole because it gave a new understanding of the system. The water operator wasn't the only one that understood it, and the mayor wasn't the [only] other person who was supposed to understand, not just the system, but what it cost to operate and maintain.

We do, to a certain extent, continue doing ongoing training for each council member when the water operator comes to the council meeting. It's providing information, and so I think...because of the understanding that we have of the system and what it takes to operate and maintain it; the [new] people have a different perspective and more questions.

## **Washeteria**

The community hired washeteria attendants and kept the washeteria running successfully throughout the project. In quarterly reports to ANHB, the clerk wrote:

Two washeteria attendants were hired in July 1998. Doing an excellent job. Building is cleaned thoroughly after each use and on a daily basis. The water plant operator keeps the building open in the morning. Also the washeteria attendants are...friendly, and courteous ... to all customers. Complaints are directed to them, if needed, they refer to office staff. The attendants have been doing an excellent job.

Attendants monitored the revenues received from the washeteria and were trying to find ways to encourage use of the washeteria and increase the amount of revenues collected:

On a weekly basis, they count and tally up the tokens taken from each machine. The revenue now fluctuates, depending on the amount of revenue in town. On a monthly basis, a report is given by washeteria attendants to promote usage at the washeteria. The attendants have been doing monthly door prize drawings for those using the facility (4 free tokens, 2 prizes drawn). Ideas include having open house, door prizes, magazines, laundry drop off and pick up for extra cost, focus on improving services. Learning basic maintenance when operator is gone. Looking at the possibility of music and a survey or other feedback.

In the closeout interview, the mayor said, "We anticipate trying to keep the washeteria attendants on now that the grant has run out. We're hoping the sense of service may bring some additional revenue, because there are a lot of homeowners in town who also own automatic washers."

There was some mention in the trip logs that not all customers were happy with the service at the washeteria, and some were not using it. Whether these allegations are true or not, they indicate some bad feeling among potential customers about the washeteria.

## **Financial Management**

The RUBA reports consistently note that the Kaltag system is run on a shoestring. There are serious cash flow problems created by a lack of money in the community. There are several factors that exacerbate this situation, including the lack of an agreement with the school, and delinquency problems with payment for sanitation services.

**School Metering:** School metering was the biggest financial problem for the utility.

According to RUBA reports, for well over two years the city was reluctant to install a meter at the school or come up with a use agreement. The community had a long-standing arrangement where the school paid the city electric bill in lieu of payment for water and sewer services. The RMW and RUBA engineers consistently pushed this issue both before and during the project.

The city did install a meter in the school in early 1998, but did not come up with a use agreement. The mayor said, "It's still a flat rate, but I think the city is going to go in and redo the contract. We've been undercharging them about \$600 to \$800 a month. We plan to renegotiate, but right now we're subsidizing them, or homeowners are, actually." RUBA quarterly reports through March 2000 note that the agreement has not been signed. Addressing this issue would be a big factor in stabilizing the utility's finances.

There is some indication in the record that the ANHB O&M project may have helped move this problem forward. In the closeout interview, the mayor mentioned that utility board training focused them on some of the harder issues such as metering the school:

...and the other thing I think was important for the council is looking at (hard) issues, especially regarding the contract with the school, and recognizing some of those things we need to go back and revisit as a council. I don't know if we're going to make any changes, but I think because of the renewed interest...[we] recognize the need to do that.

**Collections:** In addition to the school metering and user agreement issues, Kaltag has serious, long-standing delinquency problems with collection of water and sewer fees. RUBA quarterly reports commented on this in 1996, 1997, and 1998, and on to the present. They also mention a number of times that the financial system is run on a shoestring.

Collections vary depending on the amount of cash available in the community. When asked where the money comes from to pay for water and sewer operations, community officials indicated that the community does not have enough money for the utility to pay for itself, and is not always sure where the money will come from. In project interviews we were told that historically Kaltag hasn't dedicated money specifically to the water and sewer utility, but instead often used money left over from the general budget to subsidize the utility. However, respondents did say the size of the subsidy had shrunk substantially over the past five years, and that the city is considering how to raise rates without putting too big a burden on customers.

The community is looking at financial incentives to motivate customers to pay, as well as looking at the larger picture of how much money is available in the community to pay the bills. In interviews with community officials, we learned that the city has been trying to get a clearer picture of what the system costs, what the community as a whole can afford, and what customers can realistically pay—and find ways of keeping costs as low as possible.

## **Computers**

Kaltag purchased and installed a new computer—and got training to use it—to keep better track of its accounts. Wilson and Wilson and RUBA came to the village to do computer training on QuickBooks. RUBA is helping the community set up a new billing system.

Early RUBA reports about the new computer were at first optimistic. They noted that the staff was computer-experienced and that the transition was easier than expected. Later, they reported personnel were hesitant to set up the computer with the new program. Kaltag personnel attended a Quick Books Pro introductory computer class in Fairbanks this fall. According to the instructor, they did well. Both participants from Kaltag were pleased with the class and reported they had learned a lot. In early 2000, they connected computers to the Internet after a computer consultant brought modem cards from Fairbanks.

### **Preventive Maintenance**

Early in the project, the RMW developed a draft preventive maintenance plan. The TCC (Tanana Chiefs Council) and city council planned to review it. During the second quarter the community was assigned a new RMW, who again reviewed the preventive maintenance plan. In the second and third quarters, the water plant operator was in contact with the RMW about the plan; however, the operator did not have the time to further develop a preventive maintenance list because of the repairs needed to the existing system and the extreme cold weather. He also had not heard back from the RMW.

At the close of the project, the water operator said he ended up not working with the RMW on the preventive maintenance schedule. He used the old schedule and was able to do the preventive maintenance himself.

Several people involved with the project commented on the water operator's comprehensive and valuable understanding of the system. They mentioned his willingness and ability to do repairs, buy parts, volunteer his plumbing services when money is short, and develop maintenance schedules on his own. RUBA quarterly reports from 1998 report that "Kaltag has a good operator who is very conscientious about completing forms and taking the proper readings. He is building a good information base which will be invaluable later on when such matters as rate setting and budgeting come into play."

The water operator's exemplary performance has won him recognition and awards. In early 1999, he was given the award for small water systems operator of the year from the TCC. TCC also paid for him to attend the AWWMA meeting in Juneau. He went to some of the classes that TCC offered and pretty much knew how to do everything. He is current on all needed operator certification.

The city clerk emphasized that preventive maintenance was a way to reduce long-term maintenance costs:

It's important too, to recognize that we're a smaller community; we have limited resources available to us. The water operator says that he does a lot of it himself and that's true. I think that for communities our size, and in most rural communities, that the more you know the more you're able to do yourself. That will help to defer some of the cost. [Then] we won't have to spend as much because we don't have the money to spend.

## Replacement Parts Inventory

During all quarters of the project, Kaltag reported ordering parts, especially for the washeteria and water plant. The community ended up reallocating some money in the project to pay for a much-needed pump for the washeteria. The water operator developed an inventory of spare parts and engraved all the tools, so that people who borrowed them would know who they belonged to. In the closeout interview, he said:

Getting an inventory of parts worked out pretty well, because PHS left some of their parts. But then I also had to order some extra. It worked out pretty well. In case something went out I could always fix it right there on the spot. I didn't have to wait for parts or anything.

Inventory control went pretty well. I had some people borrow tools, [but] I have a sign-out sheet for them, so I keep good track of all the tools and stuff. I got an engraver and I marked all the tools.

The community had hoped to develop a rate sheet that would list how much time and money would be involved in doing various repairs for homeowners. It doesn't have a formal rate sheet because, as the water plant operator explained, "It's hard to tell people how long it's going to take. Sometimes I just do it on a voluntary basis, which is most of the time anyway."

## Community Education

Even though Kaltag doesn't have a rate sheet, the project helped city officials better explain to the community the costs of preventative maintenance and doing repairs. The mayor said:

As a result of the project, the things that we learned made it so much easier to communicate to the community the importance of preventive maintenance, not just with the plant itself, but also in your homes. Why they have to pay the \$50 a month to the city. Sometimes as city council I think we sort of take for granted that you pay a bill and you just have to, that was our response in the past. In our new appreciation of it, where people are at, and what they know, is actually [part] of what we know. So the more we know, the better it is to explain to people; and the better understanding people have of it, the more willing they are to pay for water and sewer.

The mayor said Kaltag hoped to continue this community education by including some information about the costs of repairs in a homeowner's manual:

[The manual would also describe] how to make it more efficient, you know, how [you] can save money by doing preventive maintenance in your own home. The community [needs] to understand that if you have something leaking in the house, what it would cost the city to make that repair and in the end it's going to be the homeowners who have to pay for it. I think it gives the homeowners a new appreciation of taking care of the system in their own home.

The homeowner's manual would also include tips on troubleshooting, tips about maintaining furnaces to prevent freezups, a list of supplies, where to get parts, suggestions for preventive maintenance to save money, and estimates of the cost to the homeowner if the city does repairs.

In the mean time, before the manual is completed, the city publishes notices in the local newsletter on important tips to conserve water and prevent freeze up. The water operator writes up special winter maintenance tips for the newsletter:

You know, during the winter, during the cold months I was asked...I usually give pretty good descriptions of tips homeowners can do for me...how long it's going to be cold and stuff like that. [It] really helps because before water freezes up... we usually post a sign whenever we're repairing lines. [To] let them know when the water is going to be out, or how long it's going to be out...but then sometimes it takes longer.

The water operator not only writes tips for the newsletter; he also goes door to door helping homeowners solve their problems. In the closeout interview, the mayor explained that one of the most effective forms of community education for Kaltag is the water operator just going door to door and getting to know the problems and needs of the customers:

Something that really works is the water operator talking to an individual homeowner. Sometimes people, for one reason or another, don't ask questions. So when the water is working somewhere...we try to make it so that it's not an intimidating process. You know if you need help where you can get help, and who can help.

He's our goodwill ambassador on top of being the operator. The water plant operator, he's really good, like if somebody is really mad, the water plant operator does a good job of stepping in, too. Because our town is so small you get these little squabbles, and so being aware of that...and using people that homeowners will talk to has been really helpful.

The city council training further enhanced community education. With their broader understanding of the system, council members are able to ask more questions about the water and system and have a better understanding of problems when they arise. The mayor believes this probably had an impact on overall community education:

People can ask questions and get answers from the council members now. [Because of the council's] improved understanding of operation and maintenance, they know what it costs. So when homeowners complain, or have questions of why did their monthly bill go up, everybody has an understanding instead of just saying, well, see the mayor, or see the water operator.

The city clerk felt that the training she received helped her better provide community education as well.

Word of mouth is really good, if people are not reading the newsletter or they're reading signs and they still have questions why water bills went up. [It ends up being] me...I guess in helping them to understand what it costs to make water, you know, because they don't think about things like that. When you have water and sewer, you take it for granted. Being aware of what it costs, and helping people understand, has been really helpful. So [it's] not just us [who] understand, but the community as well.

### **Community Support**

With all this community education, and involvement of city staff in the community, community support is likely to be very high. RUBA reports note that the mayor and the city council have a high degree of interest and participation and want to keep the community running smoothly. The reports say the new washeteria is "state of the art." The community is tremendously proud of its new facility—as well they should be.

### **Mentor Community**

During the spring of 1999, after numerous delays and scheduling problems, a group from Kaltag visited Kaltag's mentor community, Nulato. For the participants, the trip was very educational and interesting—but much more important, it created pride in the group. When they returned to Kaltag they felt more like a team and worked together to operate, manage, and improve the water and sanitation system in their community.

Part of the story of their visit is told in the quarterly reports written by the city clerk:

We finally did it. We made it to Nulato for a day tour of their water facility. Pretty interesting. The water plant operator is very knowledgeable. We also had a good introductory speech by the city treasurer. They showed us their new laundromat. Many of us have traveled to Nulato, but it felt like we were tourists; this part of town was unfamiliar to us. All city council members, office staff, washeteria attendants, and the water plant operator attended. A lot of good questions were asked about their system by our plant operator.

The rest of the story emerges when those who went to Nulato looked back on the experience almost a year later. They found the visit very valuable. They particularly emphasized the sense of community and ownership it created in the group. The mayor, emphasized the new cohesiveness and staff bonding the visit created:

It did help us to be able go up to Nulato. It helped not just in understanding — a new appreciation of our own system — but it helped a lot in bonding. The council members and the staff bonded and recognized each other needs and goals. It just created a new cohesiveness.

The water operator remarked that it helped him to see how another plant operates and how much it costs to maintain it:

It was good for me, because I like to see another plant and how they operate. Then there were things they did different than I did. [I] see how much it cost them to keep their system up and going.

And the city clerk liked the sense of community it created among Kaltag staff:

Thinking about it, you know, sometimes ...we like to think of ourselves as independent. I think it's an Alaskan thing, and more so in the villages. Especially when you have village rivalries going on, [you think] you're better than somebody else. Then you come to ...[visit another community's facilities] and you get a new appreciation for what the next community is doing that you never saw before. I think it would be helpful for all communities, because we... developed a real sense of community when we did that trip, that I don't think we would have been able to get through just the training.

For Kaltag, the only real difficulty with mentoring was the length of time it took to arrange for the visit. The participants suggested that putting more structure into the mentor agreement could improve it, so both communities would know more of what to expect from each other.

## **Outcomes**

Kaltag administrators reported the ANHB grant program helped them make long-term changes in their community that would not have occurred without the program.

Eventually we would have learned through trial and error on our part, but the grant helped us to set up goals, and helped with information and support. On our own, it would have taken longer and cost us more. The push of time constraints does help us to move a bit faster than we otherwise would. The ANHB grant also facilitated bringing a number of people together to do the project well.

In the closeout interview with ANHB and the overall interview with ISER, city administrators commented on a number of long-term changes that have taken place in the community as a result of the ANHB grant:

1) *Kaltag now has a much better understanding of its system and what it costs.* For years the city subsidized the water and sewer system. Now community leaders realize they were not realistic about how much this cost. Their improved understanding of the situation is largely due to the utility management training they received. In the ISER overall interview, the mayor explained:

We learned a lot of things. [I] think it is important to take ownership for these services. It helps to make it more economical, because people take pride in their system and maintain it better. Also in the overall management, keeping track of things better, and being better organized, helps to control costs.

This better understanding of their system also helped with preventive maintenance:

All this knowledge also goes a long way toward preventive maintenance. It is happening already. We are becoming more educated and aware. [We] understand how important it is to work together, not to provide more services, but to provide them more effectively!

And understanding their system also helped them educate the community:

...And building on that, building on what you know. Once you have an understanding, it's a lot easier to explain that to the community... They may not get excited about water and sewer themselves, but they have an understanding of what it costs to operate, and why we set the rates that we do. And working with the school, and knowing it's a practice [to subsidize them], so you're not going to [change] all these things at once.

2) *The mentoring portion of the project helped administrators create a closer bond with the council, so it was easier to make decisions for the city.*

3) *Office staff benefited by getting a new computer and computer training in Quick Books.*

4) *The water operator was able to acquire parts and develop a parts inventory and come up with a better system to keep track of tools, water usage, and repairs.*

5) *The project gave administrators a long-term perspective on utility and its role in the community.* The mayor talked about her broad understanding of the utility and community:

The city is also involved in looking down the road at our water and sewer needs. It's going to help a lot if we can get the money for upgrading the whole system. I think part of that came from...looking at our existing water and sewer in the old part of town, and how much money we have available to us in terms of repairs and maintenance costs. So, I think that's one important thing that we have started working on.

**TABLE 7. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR KALTAG**

<b>Context</b>	<b>Facilities</b>
<p>Kaltag is located on the west bank of the Yukon River, 75 miles west of Galena and 335 miles west of Fairbanks. It is situated on a 35-foot bluff at the base of the Nulato Hills, west of the Innoko National Wildlife Refuge. Most of its 254 residents are Koyukon Athabascan. The Stick Dance Festival draws visitors from many neighboring villages. This one-week festival of potlatches is sponsored by relatives of the recently deceased, in appreciation of those who helped during their time of mourning. Subsistence is an important part of the local economy. Salmon, whitefish, moose, bear, waterfowl and berries are harvested. Most cash jobs are with the school, local government, BLM emergency fire fighting, commercial fishing or fish processing. 19 residents hold commercial fishing permits. A seafood processing plant is under construction in Kaltag.</p>	<p>Piped water and sewer has existed since 1982 in Kaltag. Water is derived from a well and is treated. The majority of households are fully plumbed. A new 13-unit HUD subdivision was recently connected to the system, and an extension to 6th Avenue is under construction. A new washeteria was completed in January 1998. The City has requested funds to complete a Master Plan, and to relocate the landfill, construct an access road, and acquire a refuse vehicle and containers. The current landfill is not permitted.</p>
<p><b>Expectations</b></p> <ol style="list-style-type: none"> <li>1) Create a better appreciation, understanding, and community awareness of the system by homeowners and students. Provide community education with a homeowner's manual. Provide a quality service to customers.</li> <li>2) Train the utility board, staff, and community to improve the management of the utility. This includes developing a better understanding of a management plan, mission statement, policies and procedures, ordinances, track utility costs and usage, understand state and federal regulations.</li> <li>3) Establish a preventive maintenance plan to do preventive maintenance by operator and homeowners to avoid leaking pipes and toilets, freeze ups and other repairs.</li> <li>4) Improve receipt of revenues from facilities by reducing delinquency and using a computer system so bills are paid on time and city can pay its share to maintain and operate the facility.</li> </ol>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ISER Mentor Interviews, ANHB Trip Logs.</p>	

**TABLE 8. SUMMARY OF IMPLEMENTATION FOR KALTAG**

Task	Plan	Implementation
Mentors	City of Kaltag Alaska Native Health Board Tanana Chiefs Conference Public Health Service Dept. Community & Regional Affairs	Mayor; city clerk; City of Nulato representative, water plant operator; Alaska Native Tribal Health Consortium representative; TCC representative; RMW/TCC; RUBA.
Utility Board & Staff Training	The Utility Board will receive training to successfully manage, operate and maintain the water and sewer system and the washeteria.	The utility management training, I think, really helped the city council as a whole because it gave a new understanding of the system. We discussed the planning process - utility master plan, capital equipment plans. How important it is to get community involvement on projects. Went over organizational chart for the city of Kaltag. Discussed personnel policy and job description, just cause and at will employment, having policies such as EEOC, civil rights, sexual harassment, and the importance of evaluation and grievance policy. We also went over the utility ordinance, user agreement, especially the Kaltag school and city of Kaltag agreement...
Washeteria Attendant	Establish and hire two washeteria attendant positions. The work schedule will be on a rotation basis- 2 weeks on, 2 weeks off. They will work closely with the Utility Board, City Staff and Water/Sewer Operators for day-to-day management, operation and maintenance of the washeteria	“Having paid washeteria attendants instead of volunteers has been great. The volunteer stuff was good [too] and people [would] go out there if they had to, but having two people there, and the monies that [they] generate...and the incentive that they provide for people to utilize the washeteria, it's been really good. We do keep it open in the morning during the water operators working hours. He doesn't stay there and watch the washeteria, but its opened and available to people and they just come out and get the tokens from the city. [The hours are] constantly in the newspaper. Our staff also write [it] up, making sure people care for it. That is a service that we provide, so people will get up real early...and it's worked out really good.”
Financial Management	Research and purchase an appropriate computer system and accounting program. To determine accurate water and fuel usage for rate setting, a fuel and water meter will be purchased and installed.	The RUBA reports consistently note that the system is run on a shoestring. There are serious cash flow problems created by a lack of money in the community. There are several reasons: 1) the lack of an agreement with the school, 2) delinquency problems, and 3) poor cash management. They are looking at financial incentives to motivate payment as well as looking at the larger picture of how much money is available in the community to pay the bills. They successfully installed a computer and got training to use it in order to keep better track of their accounts
Preventive Maintenance	Work with the RMW to draft a Preventive Maintenance Plan specific to Kaltag's system. Provide training to the operators for implementing the plan.	Didn't work with the new RMW on a preventive maintenance schedule. We used the old schedule, but I do most of my own. [The] operator has a good understanding of the system according to RUBA and others working with the system. He was awarded a special award for water operators in small communities

**TABLE 8. SUMMARY OF IMPLEMENTATION FOR KALTAG (CONTINUED)**

Task	Plan	Implementation
Inventory Control System	Determine and purchase the types of spare parts and tools to be maintained to assure safe and efficient operation of the sewer and water system. To prevent tools from "walking away", purchased an engraver to permanently mark tools.	The water plant operator eventually ended up developing the preventative maintenance schedule after RMW I and RMW II drafted an early versions.
Spare Parts	The operator will develop a list of supplies and costs of spare parts for homeowners to purchase and supplies for interior plumbing needs. This will also include a rate sheet for homeowners if they want the city to do the work.	Inventory control went pretty good, I had some people borrow tools, I have a sign-out sheet for them, so I keep good track of all the tools and stuff. And I got an engraver and I marked all the tools. Inventory system to order new parts worked out pretty good because PHS left some of their parts, but then I also had to order some extra. It worked out pretty good, in case something went out I could always fix it right there on the spot, I didn't have to wait for parts or nothing. Have only informal estimates of rates for jobs since it is often difficult to estimate the time involved. Operator often does repairs without pay.
Community Education	The utility board, city staff, washeteria attendant, and operators will coordinate with TCC, PHS, DCRA and the mentor community to provide information to the community on the proper use and maintenance of the washeteria and piped water and sewer system, the community's role in supporting the system, water and energy conservation, homeowner maintenance, system operating costs and any other issues that come up. The community education will be done in a variety of ways. This may include community meetings, visiting and partnering with the school, creating a homeowner's manual/brochure, information in the monthly bills, community bulletin boards, and a community newsletter.	They provide notices in the newsletter about proper maintenance and operations. ANHB was very interested in using this in other communities. They post signs when there is work being done. They are developing a homeowner's manual. They also provide general education to council members when the water operator is at council meetings. It is clear from the closeout interviews that the personal attention from the water plant operator is the best community education. He works with homeowners one-on-one and is well known to give the extra effort. He helps them understand how the system works and what is involved in maintaining the systems
Budget	Personnel costs for washeteria attendants and water operator for about a year and part time administrative support; travel/per diem for utility board, administrator and operators to travel to mentor community; equipment parts and supplies expenses for a computer, software and engraver, freight, spare parts/tools, community education; contracts expenses for utility management and computer training; other operating expenses included electrical, fuel, water testing. Totals: ANHB \$40,000, Kaltag \$38,088.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## **Kobuk**

Kobuk is the smallest village in the Northwest Arctic Borough. It is about 128 air miles northeast of Kotzebue and about 7 miles north east of Shungnak. It is an Inupiat community with approximately 94 residents who practice a largely traditional subsistence lifestyle. The sale and importation of alcohol is banned. Regular cash employment is limited to the school, the city, and the Maniilaq clinic, but some residents may earn seasonal income by working as fire fighters for the BLM. The village does not have a high school, so the older students travel to Shungnak.

A new piped water and sewer system is currently under construction in Kobuk. As of early 2000, a 30-foot well provides water for the community. First the water is treated, and then residents fill their containers at the washeteria. While the sewer system is under construction, residents continue to use outhouses and honeybuckets. The washeteria has its own septic tank, and the waste is disposed of at Dall Creek. A new landfill was recently completed.

Kobuk had a well-thought-out plan and knew what it wanted to do. The community's vision was to create a well-managed piped water and sewer system, with all houses plumbed. PHS was building the new water and sewer system for the city, but construction was behind schedule during the ANHB project. As a consequence, management of the system was not passed on to the city from PHS until much later than expected. All of this created considerable delays for the ANHB project.

In preparation for taking over the system, Kobuk's workplan called for hiring and training a utility manager, training the water operators, setting up a utility board, buying a computer, and educating customers about the new system. Despite turnover in the utility manager position, the city was able to keep the utility operating and hire a replacement. Having someone to deal with water and sewer issues alleviated some of the workload on city administrators. The utility operators received the training they needed and are now fully certified.

The city purchased new computers with funds from the ANHB grant. The staff uses the computers regularly and said they have already saved both time and money. City staff also visited households to review the ordinance, customer agreements, and the dos and don'ts of the new system.

The one primary task Kobuk did not undertake was creating a utility board. The city council members decided they would oversee the operation and maintenance of the water and sewer utility. They reasoned that since Kobuk is a small community, they would try to handle the situation until the responsibilities become too great. Then they will create a utility board. Training for the council went well, but they are interested in obtaining more.

Kobuk's basic plans seemed to be well timed for the needs of the community, and most of the plan was executed. However, near the end of the project an audit revealed lost funds—chilling the project and drawing the focus away from completing tasks. Then no one wanted to accept the position of bookkeeper and take on the responsibility for managing those funds.

## **Implementation**

### **Partnership Team**

In closeout and overall interviews by ISER and ANHB, administrators singled out their remote maintenance worker as dedicated and conscientious. He is readily available, comes to help in emergencies, and sets up quarterly training for operators. In addition, they praised RUBA as wonderful in setting up books and financial records. Judging from the phone record, it seems as though RUBA was a major catalyst for insuring project activities got done. It is also clear from the phone logs and the overall interviews that RUBA was instrumental to the project. Without her presence to create some continuity over time, it might not have been possible for the community to carry out the project.

### **Utility Board**

Because Kobuk is small, the city council decided that it would oversee the operation and maintenance of the utility until the responsibilities are too much.

### **Utility Management Training**

DCRA provided the city council attended with utility management training on the day-to-day management of the water and sewer system. The training included establishing a billing system, utility ordinances, monthly financial reports, and reports on the water and sewer project. The city administrator said the training for the city council members went well, but that they still need more. Several council members have already requested more training. There has been turnover in council membership, so new members will need training as well.

### **Utility Manager**

A utility manger was hired and started work in July 1998. In February of 1999 the manager went to Juneau for the Alaska Association of Municipal Clerks meeting. His training included information on how to conduct meetings, the role of the clerk at meetings, election basics, records management, financial management, and working with the public. The manager said the training was very helpful, giving him ideas about how to get things started. But shortly after that the manager left the job. Fortunately, a new manager was hired in July 1999 and the brief vacancy did not seem to disrupt the project. The new manager received training from DCRA in setting up billing and collections systems, utility ordinances, and budgeting.

Having one person specifically responsible for management of the utility helped the community. In the ANHB closeout interview the city administrator discussed the advantages:

Having someone deal with just water and sewer, you know, separate from the city administrator works out pretty well. We keep it separate from the fuel, and have somebody totally concentrating on one area. It works out pretty well. There are plans and funding to continue that position, but ...we'd like to think of incorporating that KVAC manager with another position to make it a full seven-hour day.

The RUBA representative agreed:

I think they realized that they needed to have a separate position for utility management to oversee water and sewer. This alleviated some of the work for the city staff, because they used to have to go to the washeteria and collect and count those quarters daily, then fill out a form. You know, the daily cash count. So, having a separate person do that really helped [free up] some spare time for the city staff to write other grants and try to continue on with council training, setting that up.

### **Computer**

Quarterly reports indicate the community bought and set up a Gateway computer in early 1999. The computer seems to have helped the city organize its books. There were several computer training sessions, primarily because of the turnover in utility managers. By the summer of 1999, the new utility manager was fully trained to use the computer and was using it to produce monthly financial reports to the city council. He noted in the quarterly reports that the computers saved time and money.

### **Operator Support**

Quarterly reports for the summer of 1999 indicate the primary operator is fully certified. The water plant operator's hours increased from three to five a day. The city council members decided it would be a good idea to have an alternate operator, as well as an "alternate alternate" operator. They felt the additional operators were warranted as back up for the regular operators—to cover emergencies, and to keep the community from being so vulnerable if an operator quit. Consequently, they have been training two other people as water plant operators. The second alternate has already received his OIT and is scheduled for three additional training sessions to become fully certified.

Kobuk's original workplan stated the community wanted to develop a preventive maintenance plan. RUBA reported in April 2000 that the maintenance plan was being completed as part of the new water and sanitation system. The plan is to be included in the new operations and maintenance manual, scheduled to be completed by late 2000. RUBA also wants to create an annual checklist that operators take house to house for an annual review of in-house plumbing. This would be a positive way to encourage preventive maintenance.

### **Community Education**

Beginning in early 1999, city staff went door to door to educate homeowners on the utility ordinance, customer agreement, and use of the new system. This door-to-door contact proved very useful for improving collections, according to the city administrator:

When we went door to door, we explained why we need to have spare parts on hand in case anything breaks down, and [how much] it costs, so they kind of understood. And then, that there should always be some emergency funds available in the budget for any other emergencies that may occur. I think it had a really good effect to explain—we're not using that money for anything else. These funds are being put back into the water and sewer project for operation and maintenance.

In addition, we did a mail out a notice with one of the utility bills, telling customers about the water test results. I think that's something the council said they wanted to do more often, put little notices in with the billing.

[As a result of our community education efforts, customers] also understood why they need to pay on time so the city can keep up the system and pay for the operation and maintenance. People have been more forthcoming with payments and maybe four or five decided they wanted to pay more money in advance. Collections have been pretty good, except where there are some emergencies or something when people are gone for a month or two. That's the only thing. And when we understand what's going on... everybody has been pretty timely.

### **Mentor Community**

Early in the first quarter of the project, the utility manager, water plan operator, and vice mayor went down to Noorvik for two and a half days to see how Noorvik operates its water and sewer project and how the billing system works. Their host was the city administrator of Noorvik.

The group that visited Noorvik considered the trip interesting and helpful. They got some good ideas about how they could improve and change things in Kobuk. In particular, the city administrator got some good ideas about billing. The water operator was impressed with Noorvik's water plant. He also had the opportunity to examine how Noorvik kept its records and files, and when he returned to Kobuk, he made one file system similar to Noorvik's, and he still maintains it at the water plant.

Kobuk made several attempts to schedule a reciprocal visit for the Noorvik city administrator, but that visit hadn't happened by the end of the project. ANHB never received any paperwork—such as a contract, workplan, or budget—from the Noorvik administrator, to formalize his role in the project. ANHB had the impression that the administrator just wanted to do something neighborly and would have felt uncomfortable being paid for something he would have done anyway.

The ISER overall interview with the Noorvik administrator confirmed some of this. He said he had been happy to assist Kobuk, but that it was difficult to take time away from his other responsibilities and make the transportation arrangements for a return visit. He said he strongly believes in communities helping one another, and that he and others in Noorvik would not hesitate to help another community that asked for help, as long as the other community provided transportation.

### **Outcomes**

Even though there was turnover in the utility manger position, Kobuk was able to fill the vacancy and keep its utility operating. Both utility operators got the training they needed. The city set up the needed ordinance and did the community education it planned. The basic plan activities seemed to fit the needs of the community and were completed without much of a hitch.

Perhaps the most significance accomplishment for the community was creating the utility manager position. That position served as a focus for the city council and the community to begin

thinking about how the utility should be managed. The position drew more attention to the water and sanitation system and helped keep the focus on the day-to-day management and care that it requires.

Kobuk was also one of the communities that reported a generally successful mentor relationship. The trip to Noorvik expanded the knowledge of the Kobuk group and sparked their interest in making changes in their own community.

It is clear from the phone logs and the overall interviews that RUBA was quite instrumental in making the project successful. Without RUBA presence to create some continuity over time, it might not have been possible for the community to carry out this project. However, on the down side, such a strong RUBA presence raises the concern that the community staff may not develop the skills they need to manage the utility themselves.

**TABLE 9. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR KOBUK**

<p><b>Context</b></p> <p>Kobuk is located on the right bank of the Kobuk River, about 7 miles northeast of Shungnak and 128 air miles northeast of Kotzebue. With 94 residents, it is the smallest village in the Northwest Arctic Borough. It is an Inupiat village practicing a traditional subsistence lifestyle. The sale or importation of alcohol is banned in the village. High school students attend school in Shungnak. The economy of Kobuk is based on subsistence. Whitefish, caribou and moose provide the majority of meat sources. Cash employment is limited to the school, city and Maniilaq clinic. Seasonal construction and BLM fire fighting provide some income. The city is interested in developing a limited sport fishing enterprise, for shee fish in summer and burbot in winter, under contract to a private company.</p>	<p><b>Facilities</b></p> <p>Major improvements are under construction to provide a piped water and sewer system, including household plumbing. A 30-foot well provides water, which is treated and currently hauled by residents from the washeteria. Honeybuckets and privies are currently used in most residences, but plumbing is under construction. The washeteria has its own septic tank. Waste is disposed of at Dall Creek. A new landfill was recently completed. Kobuk Valley Electric Co-op purchases power from AVEC over the Kobuk-Shungnak intertie</p> <p>Water: Washeteria/watering point  Sewer: Honey Bucket (self haul) Outhouses/Pit Privies</p>
<p><b>Expectations</b></p> <p>The community submitted an extremely detailed application with many details about their workplan; suggesting that Kobuk had thought thoroughly about what they needed. According to the pre-evaluation and the detailed application, the community’s vision is to create a well managed piped water and sewer system in which all houses are plumbed with water and sewer. They would like to have an updated ordinance and a new utility board ordinance and continue utility operator and manager training. With these things, they will be prepared to take over the new system and know how to maintain it. Having water and sewer system will enhance community growth through better community health.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ISER Mentor Interviews, ANHB Trip Logs.</p>	

**TABLE 10. SUMMARY OF IMPLEMENTATION FOR KOBUK**

Task	Plan	Implementation
Partnership Team	City of Kobuk, City of Noorvik, ANHB Maniilaq, PHS/OEH&E, DCRA	City administrator; utility manager; city administrative staff; utility manager; city administrator; RUBA; ANTHC engineer; Remote Maintenance Worker; environmental health representative; Noorvik city administrator.
Utility Board	Form a utility board to provide guidance for the successful management of the water and sewer utilities.	Due to the small size of Kobuk, the council decided that they would oversee the operation and maintenance of the utility until the responsibilities are too much at which time they will create a utility board. The training for the city council members went pretty well; but they still need more. The people have been asking for some more.
Utility Manager	Establish and hire a part-time utility manager to work closely with the utility board, city administrator, water/sewer operators, and Noorvik for the day-to-day management, operation and maintenance of the sewer and water utility.	Having someone just deal with just water and sewer works out pretty well because we keep it separate from the fuel and have somebody totally concentrating on one area. It works out pretty well. There are plans and funding to continue that position, we'd like to think of incorporating the manager with another position to make it a full seven-hour day deal.
Financial Management	Up grade existing computers or purchase a new computer for utility management use. Research and purchase computer for producing financial reports and graphs, billing/collections system, budgeting, grants management, and rate studies. Provide computer and financial management training to the utility manager.	We have purchased computers and are using them regularly. It sure saves time and money. Because of turnover, we have rescheduled the computer training.
Operator Support	The operator's salary and benefits will be increased to implement the preventive maintenance program, receive training on the new water & sewer system, attend training courses, obtain OIT	The water operator I is fully certified and water operator II, one of the alternate operators, has left for a job at Red Dog and we've been training an alternate and alternate to the alternate to be safe in case it happens again; you know, Vance left; we had no other trained alternate operator.
Community Education	The utility board, utility manager and operators will coordinate with PHS, DCRA and Noorvik to provide information to the community on the proper use and maintenance of the washeteria and new piped water and sewer system.	We went door to door and we did one on one community meeting. We reviewed the ordinance, customer agreements and the dos and don'ts of a system. And also the on-site foreman for the water/sewer project is another people person, on-site superintendent did the same once they installed the system. And also when they sent the first bill they put some pink copies of the dos and don'ts also.
Budget	Utility manager and operator; travel and per diem for utility board, DCRA, utility manager, and operators; telephone; new computer; computer software; community education; utility management training; electric utility board fees; computer training; legal fees; fuel. Totals: ANHB \$40,000, Community \$51,754.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## **Kwethluk**

Kwethluk is the second largest village along the Lower Kuskowim River. This Yup'ik community of approximately 714 is located only twelve miles east of Bethel on the Kwethluk River, at its junction with the Kuskowim River. Kwethluk residents practice a predominately Yup'ik subsistence lifestyle. Most families go to fish camp each summer. They get seal meat and seal oil by trading with coastal relatives and neighbors. The population of the village has been increasing steadily over the last decade. Bethel is only a short distance away, within easy access by snowmachine or boat. Area employers include the school district, the city, the village corporation, the store, and health clinic. In addition, 61 residents currently hold commercial fishing permits.

Very few homes have running water or plumbing for showers, but many residents have their own steam baths. The washeteria and the water treatment plant were recently rehabilitated. Kwethluk disposes of its waste through a honeybucket haul system, individual bunkers, and pit type outhouses. Planning and engineering for a piped water and sewer system were underway in early 2000.

Kwethluk primarily wanted the ANHB grant so it could separate management of the utility from the city. City administrators wanted to set up a new management structure for the sewer and water system so the utility could eventually pay for itself and be independently managed by a utility board. In addition, the tribal council had just been awarded a large grant to construct new water and sanitation facilities. The community, anticipating the new system, wanted to improve utility management and set up a utility board to run the system after it was completed.

The city's plan was to hire a utility manager and utility board, and get them the training and financial tools they needed to operate the system. The community also wanted to improve financial management of the sanitation system. City leaders hoped that with these changes, as well as community education efforts, the utility board and the community would better understand and appreciate the water and sewer system and be prepared to run it when was completed.

During the first part of the project there was some turmoil and confusion about creating a utility board. The city needed to pass an ordinance to create the utility board, and then the board could hire a manager, pass regulations, and establish rates. The city council delayed passing the ordinance. The first utility manager got frustrated with the delays and quit, in part, because the city neglected to pass the ordinance setting up the board. There is evidence in phone logs and quarterly reports that at the same time the city council was meeting to discuss the ordinance, members of the utility board were meeting to discuss utility management – even though the ordinance granting them authority had not yet been passed.

Part of the reason for the delays in creating the board stemmed from confusion in the city about the form of government the community wanted and who should be managing the utility. The city council discussed whether the city or the tribal council should manage the utility. Eventually, the utility became a non-profit organization, run independently of both the city and the tribe. At the close of the ANHB project, officials were still debating who should actually sit on the board. Board members come up for election in the fall of 2000.

The ANHB grant was a catalyst for the community to discuss which organization should manage the utility and have authority. While they eventually came to an agreement about utility

management, the original work plan did not fully consider the political ramifications, or the time that would be involved, in changing responsibility for the system from the city to the utility board.

While resolving the utility board issue, the city hired a utility manager. The manager quit soon after completing training. Shortly thereafter, the city hired another manager who used project funds to purchase parts to make needed repairs to the washeteria and water plant, including five motors. The replacement parts enabled the community to open the washeteria for a while, but it was closed again due to freezing pipes.

Ongoing collection and financial problems plagued the city throughout the project. The computer the city installed did help organize the books, but did not alleviate the financial problems. When the ANHB project ended, the city was considering closing down all but essential services.

## **Implementation**

### **Utility Manager**

The ANHB grant seemed to generate a long-overdue discussion about the role of the utility manager, city council, and others in the management of the utility. According to the chairman of the utility commission, the project helped departmentalize the watering point, the sanitation facilities, and the laundry away from the city administration. Before the ANHB project, the city manager addressed problems with the sanitation services and laundromat, but it was a bit of a headache for him to be distracted by these issues. Having a utility manager helped focus attention on water and sanitation issues. However, getting to that point was a bit of a struggle.

The first utility manager was hired early in the fall of 1998 and completed the utility management training in April 1999. Soon after completing the training he resigned, because the city council did not want to recognize the utility as an independent organization under the city. From the time the O&M project began, he had been trying to get action on an independent water and sanitation utility. By August 1998 an ordinance forming an independent utility had been researched and drafted. The city clerk put the ordinance on the council agenda, but the council did not take any action. The utility manager wanted tentative approval for the ordinance; instead, the council told him to start working on it without authorization. At one point the utility manager was accused of inactivity. After that, he got fed up, didn't actively work on the project, and resigned in April 1999.

The city posted advertisements for a utility manager in August 1999. The new Kwethluk Utilities Commission (created in March 1999) hired the new utility manager in November 1999. The ANHB grant paid the new utility manager's initial salary. However, the big question that remains is how the utility manager's salary will be supported after the end of the project. The new (non-profit) utility commission is investigating several ideas to raise needed funds to support the utility. One idea is applying for a permit to become a permitted pull-tab operation.

### **Utility Board**

There were considerable delays in setting up the utility board. The phone logs and RUBA reports reveal a range of perceptions about whether the board was or was not a legitimate entity. The

city needed to pass a city ordinance to recognize the board. The city council eventually passed the ordinance in March of 1999, but only after considerable debate and discussion in the community.

There is some confusion about whether the utility board had administrative powers before the ordinance was passed. Regardless of whether it had recognized powers, there are records indicating the board met anyway and tried to act. In July 1998, the utility board hired the first utility manger. As of late August 1998 (long before the ordinance was passed), the utility board had already met about four times. During its last meeting the board planned workshops so they could become more familiar with the water and sewer ordinances—one dealing with enforcement of utility rules, the other dealing with utility rates.

The delay in passing the ordinance had several repercussions. As already noted, the city council did not want to recognize the utility as an independent organization under the city, which contributed to the resignation of the first utility manager. Delays in passing the ordinance also delayed finding a mentor community. According to one administrator, the city was waiting for the utility ordinance to be adopted before contacting a mentor community.

After the ordinance passed, debate about who would manage the utility continued. Starting in August 1999, the phone log indicates that the first utility manager was still actively involved in the project. Although he had quit as the utility manager, he was still involved in the city government, and was concerned about the city management of the utility. He discussed with ANHB the possibility of transferring management of the utility to the tribal council. Other villages (Chefornak and Napaskiak) have transferred management of the utility from the city to tribe, and he was interested in that process.

The city and the tribe had their first merger meeting on August 12, 1999. The tribe was awarded \$1.1 million for the first phase of the community's water and sewer project, and since the tribe was the grant recipient, it made sense that it would manage the utility. The IRA tribal administrator phoned ANHB to inquire if the grant could be reverted to the tribe, since the tribe had been awarded the funds for the sanitation project.

Throughout the fall of 1999 there were numerous notes in RUBA quarterly reports speculating about a memorandum of agreement between the city and the tribal government, and about who would operate the utility. One administrator said the tribe was letting city take the lead. The IRA tribal administrator began the reorganization of the utility services as a non-profit organization separate from the city. As of early 2000, the Memorandum of Agreement (MOA) was still in the hands of the city, since city officials did not concur with the intentions of the tribal council.

In February 2000, there was a joint meeting between the city and the utility board to determine the status of utility services, and in March 2000 there was a joint meeting between the city and the tribe for a possible transfer of utility assets to the tribal government. The tribe requested financial reports, asset inventory, liabilities, and records of any debts that the utility board now has.

By March 2000 the utility board had received its articles of incorporation as a non-profit organization and was a recognized business enterprise. Since the utility board was established as a non-profit, members set up some rules and passed an ordinance. There are several examples in the closeout interviews and phone logs of the utility board functioning effectively. As of spring 2000, the group considered that it should be a department under the city, because it still could not support itself.

Part of this long-term debate and confusion about the utility board, and who would manage the utilities, revolved around who would sit on the board. Originally, when community leaders first talked about passing the ordinance creating the utility board, it was proposed that the city mayor would appoint the utility board. That original proposal changed considerably over the course of the discussion. The current ordinance says the head of the utility will solicit names of individuals willing to serve on the board, then the public will elect board members. The election of members is scheduled for October 2000.

This public election process appears to be an important outcome of the long debate about the utility board. The community decided it wanted an open selection process involving all eligible voters. While this issue took a long time to resolve, it involved both the city and tribal councils in a constructive discussion and debate about the long-term maintenance and operation of the current utility and the planned new water and sewer system. As a result of these debates, the community has a much deeper understanding of the issues involved.

### **Financial management**

**Computer:** Very early in the project the city purchased a computer and software, then successfully installed and used the system. By January 1999, the city's internal controls were being computerized and it had already seen an improvement in its ability to make revenue estimates.

**Collections:** RUBA reports indicate that prior to the ANHB project the city used a ledger system to track sanitation payments. It had a high delinquency rate and cash flow problems. In closeout interviews with ANHB, the new city utility manager reported that the utility didn't yet have a billing system but was attempting to increase collections. The manager foresaw that it would be a slow process and would likely require door-to-door community education to help residents understand the reasons for the charges and the importance of customers paying their bills. At the end of the project, as few as 10 percent of subscribers were paying their bills for sanitation services.

Recent RUBA reports suggest that the utility still faces financial difficulties. The January to March 2000 RUBA report about the community paints a bleak picture:

The utility manager was budgeted to the end of the month. The funding from the ANHB was deteriorating. With deteriorating funds, they have to consider the agreement soon before all services are shut down. Finances are deteriorating... [there are] cash flow problems every month. Employees got only half a paycheck in mid March. Payroll got caught up by the end of the month. The washeteria operator has been put on notice. The mayor plans to retain only the city clerk and the sewer haul workers. The container haul system rates are too low.... New rates were recommended, but with the collection status, it will only create more problems for a service that cannot support itself.

### **Replacement Parts and Equipment**

There was a long delay in purchasing the parts needed to get the washeteria operational. From the beginning of the project in the summer of 1998 through December 1999 there are notes in the phone log and RUBA reports indicating that the washeteria was closed for long periods. Parts and

supplies were needed before it could be reopened. The RUBA report at the end of 1999 says the washeteria's mechanical problems resulted in closure of the water treatment plant for an entire week.

Early in January 2000, the utility manager took the initiative and ordered parts and supplies for the washeteria, water treatment plant, and the container haul systems. Five dryer motors were ordered and installed; two general duty washers were ordered and installed; repair parts for leaking pipes were installed by the water operator; 300 gallons of heating fuel oil was purchased to help thaw out the freezing water and sewer pipes; and the purchase of a 100-gallon vacuum system was being negotiated with the manufacturer. The facility was reopened, but it is still struggling financially.

### **Community Education**

The city has a newsletter distributed to the community each month, describing various aspects of the water and sewer utility. In one particular newsletter, the mayor explained the nature of the sales tax expenditures for support of local sanitation services. There have also been notices in the newsletter from the city and the utility commission about washer and dryer rates and washeteria hours, as well as information to let residents know how their tax dollars are being spent.

### **Community Support**

In the closeout interview, the chairman of the utility commission talked about the financial problems:

A lot of our people have difficulty paying. But when we aggressively try to bill and make efforts to collect or educate customers about why it's important for them to pay, we find that water and sanitation are just bits and pieces of our overall needs. There are more important things that we need to be taking care of.

Part of the problem is related to equitable treatment of customers. Some households in Kwethluk have honey bucket haul service, but a lot of households are without service. Before the city can require collections it has found that it first needs to address the perception that not all households have the same access to sanitation services. According to the chairman of the utility commission:

That discrepancy becomes a part of not being treated equally. We tried to address that. There's been a lot of discussion about...looking at how other communities have tried to resolve their water and sewer, like in Bethel. But even if we did [resolve it] we don't have the honey buckets, we don't have the equipment to really address or enforce the ordinance. Those are some of the discrepancy problems we need to address before we fully enforce some of these things that we planned. But some needs are not being met for us to effectively execute our plans. It becomes a question about fairness and equity...and we're working on it. I think that's progress, and the grant has helped toward that progress, even though some of those areas, like mentoring, have been weak. We got the information for us to go forward, and that's exactly what we needed.

## **Mentor Community**

Kwethluk did not get a mentor community because it was waiting for the utility ordinance to be adopted or passed. In the closeout interview the utility commission chairman reported:

We had authorized the first utility manager to contact two [or three] villages for mentoring, I think one was Emmonak, one was Aniak and one was Bethel...[We didn't ask them to mentor us], but we got the information from them. Like from Bethel about the rates structures for their community and we used the information provided by them so that we can work on our ordinance, and on our rate structures. Hopefully they can be finalized later on. But it's still a slow process.

## **Outcomes**

The most substantial outcomes of the ANHB project were the purchase of needed equipment and parts and repairs to the washeteria. The grant helped in purchasing three washers, a suction vacuum pump, and some parts for washers and dryers. It also helped pay for some time for the utility manager and operators to do needed repairs and helped purchase a computer, office equipment, and software. Without this money, the city would have been in worse shape. However, because of ongoing and long-standing financial problems, the grant may have served only as a band-aid that helped temporarily but did not increase collections or Kwethluk's ability to pay for parts and repairs in the long run.

The major long-term changes were the creation of the Kwethluk Utilities Commission and a clearer definition of the role of the utility manager as separate from the city. Neither the utility board nor a defined role for the utility manager existed before this project. The money from the ANHB grant served as a catalyst for the community members to discuss and debate how they wanted their utility managed and by whom. Having a commission set up to operate the utility could help substantially in the long run.

In the closeout interview, the utility commission chairman emphasized that the communication that began in the community was very beneficial:

One important lesson to pass on to other villages is to have a utility board that you can communicate with to help establish policy. It is very important to have good communications and have a utility manager who can communicate with the board, the public, and other agencies. That is one of the most important things.

**TABLE 11. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR KWETHLUK**

<p><b>Context</b></p> <p>Kwethluk’s population of 714 has been steadily increasing over the past decade. Kwethluk is the second largest along the Lower Kuskokwim River, following Bethel. This is a Yup’ik community located 12 air miles east of Bethel on the Kwethluk River at its junction with the Kuskokwim. It is easy to get to Bethel by snowmachine or boat. Kwethluk is predominantly a Yup’ik village that practices a subsistence lifestyle. The largest employers are the school district, city, village corporation, store, and health clinic. 61 residents hold commercial fishing permits. Subsistence activities play a central role in the lifestyle; salmon, moose and caribou are the staples of the diet. Seal meat and seal oil are obtained in trade with coastal relatives and neighbors. Most families go to fish camps each summer.</p>	<p><b>Facilities</b></p> <p>The washeteria and water treatment plant were recently rehabilitated. The school and teachers' housing have individual systems. Honeybuckets are hauled to a sewage lagoon. Very few homes have running water or plumbing for showers, but many residents have steam baths. Planning and engineering of a piped water and sewer system is underway. The YKHC Sanitation Market Feasibility Study in 1-12-96 notes the community of Kwethluk disposed of its sewage by a variety of methods consisting of a city owned honey bucket haul system and individually owned bunkers and pit privies. The honeybucket haul system had been incorporated uptown in the new HUD built homes. It was inconsistently run, and residents complained of the amount of sewage that was spilled over the bumpy road leading to the partially fenced sewage lagoon. The homes not served by the honey bucket haul system relied on individually owned pit privies and bunkers. Most of these were to the point of overflow and should have been closed out long ago. The washeteria contained a piped sewage system. Wastewater was discharged through arctic pipe into a sewage lagoon next to the washeteria. The plumbing in the washeteria was not particularly sound and grey water was spilling from a leaking pipe underneath the building.</p>
<p><b>Expectations</b></p> <p>Their primary vision is to remove the management of the sewer and water system from the city so that the utility can be independently managed by a utility board and eventually pay for itself. Hire a utility manager and utility board, get them the training and financial tools they need to operate the system on its own. Improve financial and management of the water sewer system. Through these community education efforts, the utilities board and the community will gain an increased understanding and appreciation for the water and sewer system.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, and ANHB Trip Logs.</p>	

**TABLE 12. SUMMARY OF IMPLEMENTATION FOR KWETHLUK**

Task	Plan	Implementation
Partnership Team	City of Kwethluk, Kwethluk Utilities Commission, Alaska Native Health Board, YKHC, US Public Health Service, Department of Community and Regional Affairs.	First utility manager and city administrator; chairman, Kwethluk utilities commission; utility manager; Remote Maintenance Worker; Yukon Kuskokwim Health Corporation representative; ANTHC representative; water operator; utility board, City of Kwethluk; and the Kwethluk IRA council.
Utility manager	Hire a full-time utility manger for the day-to-day management, operation and maintenance of the washeteria and honey bucket haul system and the planning of the future piped water and sewer system.	The first utility manager was originally hired and trained as the utility manager. He resigned about a year later soon after he completed training because of frustrations that the city would not recognize the authority of the utility board over the water and sewer facility. Later the electric utility hired the second utility manager as utility manager. Creating the utility manager position helped address the issue of who was in charge of the managing the utility.
Utility Board & Staff Training	Create a utility board to manage, operate, and maintain the washeteria, refuse collection and disposal, and future water and sewer system	There was some delay in setting up the utility board. There was a long discussion in the community about whether the city or the tribal council should over see the utility. The city council delayed considerably in passing the ordinance needed to recognize the utility board. Eventually the utility board became a non-profit, but not before the tribe considered taking it over. Since it was set up as a non-profit they set up some rules and passed ordinance.
Financial Management and Computer:	The utility manager will research and purchase an appropriate computer system and software. Computer and financial management training will be provided to the utility manager	Successfully researched, purchased and installed the computer. According to recent RUBA Quarterly reports, they are still having substantial cash flow problems and delinquency is a big problem. They were considering shutting down city services and laying off workers to make ends meet as of March 2000. RUBA reports indicate the utility managers went through training.
Parts and Equipment	Purchase of dryer motors, vacuum pumps, and other parts for the washeteria and water plant were not in the original plan	Changed the original plan to purchase dryer motors very late in the project (early 2000). These parts were crucial to make the washeteria operational. It did not solve all their problems. There were burst water and sewer pipes that closed the washeteria for longer. As of March 2000, the facility was still closed according to RUBA reports. There are numerous reports in RUBA reports, phone logs and quarterly reports that the washeteria was closed, lacked parts, or was suffering from operations failures through out the project.
Community Education	The utilities commission and utility staff will coordinate with YKHC, PHS, DCRA, and the mentor community to provide information to the community on planning for the future piped water and sewer system and the proper use and maintenance of the washeteria.	They have a newsletter that distributes information about the utility. The mayor has tried to explain the finances for the utility to educate the community. There have been many notices about various rates and services at the washeteria.
Budget	Funds for a utility manager, administrative support, operator(s), travel/per diem, computer system & software; cash, community education, utility management training, tools, computer training, other operating; RFP ad, training, etc., freight. Total: AHNB: \$40,000, Kwethluk: \$88,884.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## Nightmute

Nightmute is on the Yukon River about 18 miles from the community of Toksook, on Nelson Island. The Qaluyaarmuit, or "dip net people," have lived on the island for the last 2,000 years. The area is relatively isolated from outside contact and has kept its traditions and culture largely intact. Nightmute is a traditional Yup'ik village, and the local economy is a mixture of both subsistence and cash-generating activities. Employment is primarily with the city, school, social services, commercial fishing, and construction. Almost all families engage in either subsistence or commercial fishing, and most have fish camps in the summer. Over 30 residents have commercial fishing permits for herring roe and salmon drift and net fisheries.

In 1998 a flush tank and haul system was completed for 21 homes, and additional units were added in 1999. A new watering point was also created at the school. Residents who are not served by this system must haul their own water and honeybuckets. There is no washeteria.

The community was getting a new flush tank haul system (FTHS), and the ANHB project was intended to help the city take over operation and maintenance of the new system once it was completed. The community wanted to improve the way it collected money for this system, so that it could stand-alone financially in case city government was no longer able to support it.

Part of the plan was to automate bookkeeping with a computer and to hire and train a bookkeeper to operate the computer. The community bought the needed computer, trained the bookkeeper, and was able to produce the reports it wanted. RUBA employees who visited the community in early 2000 reported that the system was operating and in the black, although there were still some concerns about where Nightmute will find the funds for ongoing repairs of the new system.

High turnover in the bookkeeper position led to some setbacks. At the end of the ANHB project, Nightmute had no bookkeeper for the FTHS system, due to a lack of money. The city administrator and the very new city clerk were doing the paper work. An electrical brownout burned out the computer and caused some delays in the project. Recent RUBA reports indicate Nightmute still does not have a functioning printer to produce reports.

In the original proposal, Nightmute also planned to create a utility board to manage the new system separately from the city. The grant provided a stipend for the utility board members.

## Implementation

### Computer

Part of Nightmute's workplan was to purchase a computer and automate its financial records. According to phone logs, RUBA reports, and quarterly reports, Nightmute successfully purchased and installed the new computer. But RUBA reports say that the computer had numerous problems due to a brown out. Part of the reason Nightmute requested an extension and a change in funds was to buy a replacement computer.

By early 2000, the computer was back in operation, but reports had not been printed because the printer was not working. Troubleshooting was finally able to get the printer back in operation.

RUBA is encouraging Nightmute to use the Quick Books Pro program that is on the administrator's office computer and plans to visit Nightmute to transfer the financial information into the software and train the bookkeepers to use the program.

### **Bookkeeper**

Nightmute hired and trained bookkeepers to operate the computers and keep financial records for the utility. However, there was frequent turnover and as of early 2000 there was no one in the position. RUBA quarterly reports list a long succession of bookkeepers during the course of the project. In January 1999, the new FTTHS bookkeeper resigned and the city bookkeeper took over the responsibility for the FTTHS books. In June 1999, RUBA reports say the utility bookkeeper had quit her job over the summer. And again in late summer 1999, RUBA was informed that the previous administrator and bookkeeper had both resigned their positions over the summer. The new administrator at the time had been the clerk/bookkeeper. Yet again in early 2000, the city underwent another complete administrative staff turnover. RUBA reports from that period also indicate the city was staffed with an administrator, bookkeeper, and bingo bookkeeper. Each time there was turnover in the job of bookkeeper, either the RUBA or the city staff provided computer and bookkeeping training to the new bookkeeper.

As of April 2000, the new city administrator said that the utility bookkeeper had quit a couple of weeks earlier. The city doesn't have sufficient funds and is trying to save money by splitting the workload for utility bookkeeping among other office workers. The city administrator has been trying to send out the bills as soon as they come in so that the customers can pay. One of the previous city clerks had been helping out, but she was temporarily on medical leave. The city clerk is fairly new and still needs training, so the workload has fallen on the city administrator, the bingo bookkeeper, and the certified water operator.

### **Utility Management Training**

In November 1998, the city administrator completed the utility management training. There is no evidence in the record that a utility board was created or that members received training. Most of the major decisions about funding and operation of the utility were being made by the city council, suggesting they had retained management of the utility.

### **Operator Training**

ANHB trip logs and quarterly reports submitted to ANHB say the water operator received training and certification. He was hired as a part-time water operator and was still in the position at the close of the project. He also received training from the companies that installed the FTTHS.

### **Community Education**

Quarterly reports indicate that the operators were waiting to train the homeowners until after the installation of the new FTTHS units was complete. In the closeout interview, the city administrator said the city had not yet had an opportunity to have a community meeting to explain to customers how their fees support the system by paying for parts and the operator. The city council is planning to have a community meeting once all the homes are hooked up.

ANHB notes from one of the community visits say that an engineer involved with installing the new FTTHS system apparently went house to house to collect information from the residents about where the best place would be for the "dog house" (sewage collection tank) for each residence. After construction of FTTHS units, the plumber who had helped install the units did come out and train operators and customers for two to three days, going step by step through how the system works, how to use the toilet, and how to prevent problems. There was a walk through and final inspection with the homeowner. At least four of the people involved with the project used this opportunity to explain to homeowners how to use the units and what do to if they were going to be leaving their houses during the winter months. Reports indicate the homeowners really liked this instruction.

### **Repairs and O&M of FTTHS Units**

One concern raised in the original workplan was that some of the units were no longer under warranty and there was some uncertainty about who would pay for repairs or broken parts. The community has seen this situation already. As of this writing, the pump at the city building hadn't been operating for two months. Other homeowners have also had problems with their pumps. Some homeowners haven't been able to pay for pump repairs, and the city can't afford to keep replacing pumps. Another repair problem with the new units occurs when customers forget to put on the heat tape in time for cold weather and the sewage line freezes. In addition, some of the units stopped functioning when their electrical components were damaged by an electrical brown out.

Some of these repairs were covered by warranty, but eventually the cost of repairs and replacement parts will fall to the homeowners and the city as all the warranties expire. Currently when there is a problem with one of the new units that is not under warranty, city officials get in touch with a support agency to send the needed parts and pumps. That agency then arranges to get the needed pumps and calls in an RMW to do the work. When the local janitor or the water operator is working at someone's home, the city includes that work as part of the wages. The water operator isn't paid from the flush tank haul system; the city ends up paying his wages.

### **Collections for repairs**

Part of Nightmute's workplan was trying to improve collections so the community would have the money needed to pay for ongoing repairs and parts for the new FTTHS units. In early 1999, according to phone logs, the city council discussed the idea of creating a contingency fund to pay for 50 percent of the cost of homeowner's replacement parts for the new system. At first, the council wasn't receptive to the idea, but gradually the members came to realize that some people would not be able to afford replacement parts. Later in 1999, the city council approved setting aside \$1,000 a month to help pay some of the cost for parts homeowners may need.

Nightmute keeps a separate account for the flush tank and haul system. A past city administrator reported in early 1999 that the revenue was enough to pay for the operator's time. RUBA reports from the summer of 1999 say that according to the administrator the FTTHS system is operating "well" and is meeting its financial goals. Nightmute has asked RUBA to assist with a rate study for the new FTTHS. The rate study should help the community get a better handle on the costs of operating the system and figuring out how much to charge to keep the contingency fund solvent.

## **Community Support**

The city administrator reported that the community took great pride in the FTTH system and that residents were happy to get the honeybucket smell out of their houses. He said collections for service were going fairly well:

Most of the customers are timely and pay their bills, I think, or somewhere around half. We're going through the files back there of the different homeowners, some of them are a little behind. I guess once the project is complete the council is planning on redoing the payment system to...a prepay system, where customers have to pay in advance to get sewage pumped out from their holding tanks.

## **Mentor Community**

Fairly early on in the project, Napaskiak was identified as the mentor community for Nightmute. Nightmute administrators scheduled a visit to Napaskiak, but it never took place because of scheduling conflicts.

The past city administrator for Nightmute went to utility management training in Bethel and met the Napaskiak tribal administrator and primary contact for the mentor community. ANHB trip logs note that this was a good opportunity for the two administrators to get to know each other.

According to phone logs at ANHB, the two administrators stayed in contact after their initial meeting and discussed various aspects of the project in Nightmute. When the Napaskiak tribal administrator spoke to ANHB staffers, he reported that things were going well in Nightmute and indicated he knew about progress on Nightmute's workplan. He was clearly communicating with them and discussing the project. He said “[the mentor relationship] was good and [both communities] were learning a lot from the mentorship.”

The tribal administrator in Napaskiak described his contacts with Nightmute in more detail in the mentor interview with ISER. He said Napaskiak had helped with computer and software questions, reviewed financial reports, helped fix some accounting problems, and provided information on its vacuum haul system.

## **Outcomes**

There is limited information about the long-term outcomes, since the city administrator who answered the questions in the closeout and overall interview had only been in the position for about five months. Those who had started the project were not available for interviews.

## **Long-Term Maintenance of FTTH**

Nightmute has not yet solved the long-term problem of finding funds to buy parts and do repairs on the FTTH system. For the system to pay for itself in the long run, city administrators see the need to have homeowners pre-pay before their tanks are pumped out. Some people are falling behind on their payments and that makes it very difficult to buy needed parts and supplies. About half the customers were current in their bills at the end of the project, and there are slack times in collection.

Nightmute has asked DCED to help with a rate study to learn more about the cost of operating the new system and to figure out how much to charge customers. The community has successfully set up a separate account for the FTHS. However, it is not enough to pay the cost of the repairs; the city is currently paying for the time of the water operator and janitor when they do work in houses. The city set aside \$1,000 a month to pay for parts and labor, according to quarterly reports.

The other way Nightmute tried to address the need for money for parts and maintenance was setting up a computer and bookkeeping system. One of the objectives of the project was to hire, train, and establish a bookkeeper to keep the books on the FTH system, so it would pay for itself. Nightmute did succeed in getting its accounts in order with the help of the mentor community, the new computer, and the attention of the Nightmute administrator. However, there is regular turnover in the bookkeeper position, which is one contributing difficulty that makes it hard to keep up the collections.

According to the mentor administrator, after the Nightmute administrator and the bookkeeper left their jobs there was less attention to keeping the books current. As of early 2000 Nightmute has no FTHS bookkeeper, because the system is low on funds. Nightmute has been dividing the bookkeeper workload among other office workers.

The administrator from the mentor community expressed his concerns. "I don't know how long this flush tank and haul system will continue to work in this community. Some time down the road this system will need to be upgraded." The ANHB project did not address this upgrade, but helped keep the system going for a few more years.

<b>TABLE 13. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR NIGHTMUTE</b>	
<p><b>Context</b></p> <p>Follow the Yukon River 18 miles up from Tooksook and you will come to a village of a little over 200 people living on Nelson Island. Nelson Island has been inhabited by the Qaluyaarmiut, or "dip net people," for 2,000 years. The area was relatively isolated from outside contact, and has kept its traditions and culture. In 1964, many residents moved to Tooksook Bay. Nightmute is a traditional Yup'ik village, active in subsistence. The village economy is a mixture of both subsistence and cash-generating activities. Employment is primarily with the city, school, social services, commercial fishing and construction. Trapping and crafts also provide income. Almost all families engage in either commercial or subsistence fishing, and most have fish camps. 33 residents hold commercial fishing permits for herring roe, salmon drift and net fisheries.</p>	<p><b>Facilities</b></p> <p>A flush/haul system was recently completed for 21 homes, and additional units will be added during 1999. Unserved residents haul water and honeybuckets. The community has a new watering point at the school. A washeteria is not available. The Nightmute Power Plant was acquired by AVEC in March 1998. As of August 1998, twenty-one FTTHS units were installed. At close of project, about forty-one were installed.</p>
<p><b>Expectations</b></p> <p>In their pre-evaluation, the community mentioned several times that they wanted to make sure the new FTTHS would be fully operational throughout the village by the year 2000. It is clear from their pre-evaluation and their application that they had thought carefully about exactly what was needed to make the FTTHS succeed. They identified training and improvements in financial management as their greatest needs in order to provide quality service and to meet customer needs.</p> <p>Training: Operators are trained by themselves as they work, but more training is scheduled after the installation sometime in August 1999. Even after the training, operators will train all homeowners. A contingency plan will be prepared and complete for all customers, if for any reason the operators are absent due to illness, on personal leave, or any other leave. FTTHS operators will be certified to better serve the community and customer. In addition, by training the water/sewer haulers, the equipment will be maintained better, and last longer.</p> <p>Finances: Billing and collections will be rapid for any financial reports the city administrator, city council, and utility board wants from the utility bookkeeper from the computer which the bookkeeper uses. Additional training will be needed on QuickBooks to ensure proper billing and collections are being recorded. Bookkeeper or manager will have all reports to the city council, city administrator, and the community completed in a day and will be available at the city council's annual public meetings. Previously reports had a long preparation time. Customers have a better billing and collection system, and a copy is sent out monthly and customers know the exact amount to pay or how much is left on credit payments. With improved collections, billing, and record keeping, they hoped the FTTHS operation and maintenance would start operating by itself through the payments received from the customers. By purchasing a computer, it will give FTTHS operation a stable beginning, accounting wise. Once the system is operational, the community will be informed on the installation of the new accounting system.</p> <p>Management: In addition to providing operations and maintenance, financial, and management support for utility, the original utility manager realized there was a political situation that may change how the city is managed away from the city government to the tribal council. He was eager to get the FTTHS operational on its own feet so that it could operate on its own. To this end, they wanted to set up a utility board to manage the utility separate from either the city or tribal government.</p>	
<p>Source: Alaska Department of Community and Economic Development, Application, ISER Pre-Evaluation Interview, and ANHB Closeout Interview.</p>	

**TABLE 14. SUMMARY OF IMPLEMENTATION FOR NIGHTMUTE PROJECT**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	City of Nightmute, ANHB, VSW, YKHC-OEH&E, RUBA.	Coordinated with YKHC-OEH&E for utility training and with RUBA extensively on installation of computer and training on site. Yukon Kuskokwim Health Corporation's representative came out to inspect the water plant the water operator.
Financial Management / Bookkeeper	One of the primary objectives of the project was to hire a bookkeeper and set up a regular billing system for the FT&H system and produced regularly quarterly reports.	They did successfully set up the system, and in RUBA quarterly reports, the system was paying for itself. Great start with trained bookkeeper who left soon after she completed training. Continued turnover and lack of funds for position. Often shared by city bookkeeper. When a good trained bookkeeper is in the position, reports are complete and helpful to the city council and ANHB
Purchase a Computer:	The first phase of their plan was to purchase a computer, install the needed software to operate the existing billing and collections system of the flush tank and haul accounting system, which the city runs. All payments received from the customers will be recorded into the computer to safeguard from being lost, misplaced, and damaged.	Early on in the project they researched a computer, software, and related equipment and successfully purchased, installed, and operated it. Both ANHB phone logs and RUBA quarterly reports document the success. Late in 1999 the computer suffered damage due to a brownout. (It is worth investigating whether the surge protector was installed correctly.) After the ANHB grant was extended, they requested using some of the remaining funds to repair the machine.
Utility Management Training	The second phase of the project focused on training the bookkeeper, city administrator, and utility board so they could maintain the new FT&H.	The former city administrator of Nightmute completed the utility management training that was presented by RUBA. In addition, the former bookkeeper of Nightmute completed that training. In that same course was the city administrator and mentor from Napaskiak for Nightmute. It was a very good opportunity for both administrators to meet and to get to know each other face-to-face and develop some relationship. The training was held in November 1998.
Operator Training:	When we are nearing the completion of the construction of the next 26 FT&H units, the project will sponsor a training class for the operators and homeowners.	The new water operator recently attended water operator training. He successfully completed the course and took the water operator certification test for water distribution and passed the operator training exam for water distribution. He is scheduled to become the part time water operator when the water treatment plant is completed.
Community Education	The FT&H operators will go house-to-house half hour to one hour a day to teach/train customers hands-on for total of 21 hours for 1 hour per house per day until all houses are complete. After installations of the next units are complete.	Some of the engineers from the project, along representatives from other support agencies, and one of the local water operators explained to homeowners how to use the units and what do to if they were going to be leaving their houses during the winter months. We have not had an opportunity to talk with the community and explain to people that their fees go to support the system, to keep parts on hand, to pay the operator. Just the council is planning on it once everybody is hooked up; I guess they're planning on having a meeting with the community to explain to them what's going to be done.
Repairs/O&M of FT&H Units:	First four of the first phase FT&H units were installed by Cowater and replacement of the parts were warranted for one year. Since then, the city has provided replacement parts. In the future the customers will be responsible to pay for all maintenance and repair of the unit and all associated costs.	There were some repairs needed as reported in trip logs and closeout interviews. Some were covered by warranty, some by the repairman. They were also able to save up a reserve account to pay for some repairs but not all of them. There is a continual need for parts. There is still an ongoing concern that the funds may not be available for repairs in the future.
Budget:	Administrator for about one month, a part-time bookkeeper for about one year, some time for the operator to go door to door to educate the community, travel money for two to visit Bethel for training classes, money for computer, software and related supplies, and money to pay a stipend for seven members of the utility board to meet ten times. The total grant was \$26,300 with the city paying for \$8,050 of that total.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interview.		

## **Wales**

The village of Wales is 111 miles northwest of Nome on Cape Prince of Wales, which is at the western tip of the Seward Peninsula. The weather is often severe. Frequent fog, winds, and blizzards can limit access to the area. About 170 people live in Wales, where there is a strong Kinugmuit whaling tradition. Ancient songs, dances, and customs are still practiced today. Residents of nearby Little Diomedede Island often travel between the two villages in their traditional skin boats. The economy in Wales is based on subsistence hunting and fishing and trapping. Some additional or seasonal income may come from Native arts and crafts. There is some mining nearby, and a private reindeer herd is managed in the area. Some local residents are employed to assist in the harvest.

The village pumps water from Gilbert Creek during the summer, but after the water is treated residents must haul it from the washeteria, where it is stored in a 500,000-gallon storage tank. The community has experienced water shortages and needs a second water source. Very few homes have plumbing, and most residents use honeybuckets. The school and clinic are connected to piped water and a septic system. New sources of water are now being investigated, and there is a plan to implement a piped system. A landfill is not permitted.

After an early trip to Wales, an ANHB representative noted that the pilot project would likely pose challenges for Wales, but that the community had the advantage of a strong interest in improving management and operation of the sanitation system.

The community identified a long list of needs at a brainstorming session with ANHB before the project began. This list included an adequate year-round water supply, parts for the washeteria, operator training, more administrative support for management of the utility, and many other specific parts and repairs for bins, septic tanks, trailers, and buildings.

The community chose to address several of these crucial needs in the ANHB project, including acquiring equipment (especially bins and a trailer), getting operator training, improving utility management and collections, and providing community education.

Wales focused on purchasing needed parts and equipment, ordering a list of replacement parts identified by the RMW. It also purchased some bins for the honeybucket system and ordered a new trailer to haul the bins. (Wales had not yet received the trailer as of April 2000). The community also bought some parts and equipment for the washeteria, but it is still in disrepair.

Wales had difficulty completing several tasks in the workplan. The community attributed part of that difficulty to a lack of communication between Wales and ANHB. Village leaders said they did not know when the grant was about to end and that there was money still available. From the other side, ANHB reported difficulty in contacting the community for many months, despite repeated attempts. The village also said that internally there was a lack of communication between the utility manager and the bookkeeper. The bookkeeper did not keep the manager informed about the status of the grant. Compounding this problem was considerable turnover in the bookkeeper position. When administration of the grants was transferred from one bookkeeper to another, the community lost some knowledge about the status of the grant.

Another ongoing problem that further hindered the project was the community's inability to get a water operator who would consistently identify and install replacement parts and do needed

maintenance work at the washeteria. The community was able to hire a janitor to clean up the washeteria and keep it in better repair, but it continues to need a consistent water operator.

What made some success possible in Wales was very determined support from outside agencies. The RMW was crucial in getting a list of replacement parts and making sure they got installed. In addition, a representative from PHS was crucial in helping Wales order bins and a trailer. Without that help, the project would likely have failed.

## **Implementation**

Wales did not submit any quarterly reports to ANHB until late August, after the project had ended, and since Wales is not a RUBA community, there are no RUBA quarterly reports. This makes it much harder to track the regular progress of the project. We relied mainly on the closeout interviews, phone logs and trip notes.

### **Partnership Team**

It was clear from the workplan, phone logs, and notes from trips that Wales had very strong support from the RMW from the Norton Sound Health Corporation. He was very interested in working with the community to help implement the preventive maintenance plan, do priority maintenance, and come up with a spare parts list and an inventory. He called ANHB several times to keep the project moving along and get tasks done. The community explicitly recognized his contribution, writing him into particular tasks in the work plan.

Within the community, the tribal administrator—who is also a city council member—said that the new mayor is a very strong leader who is putting things in order. She also said Wales now has an elder on the council, providing needed leadership and direction.

### **Equipment and Parts**

Wales used some of the ANHB money to buy two or three new washers, parts, and a boiler for the washeteria. The community also bought a trailer and some new honey bucket bins. It's clear from the phone logs that getting these parts and equipment was the primary focus of the grant activity. The majority of the first \$10,000 granted to the community went to purchasing parts for the washeteria. The RMW called fairly regularly, starting early in the project, for updates about whether the parts had been purchased. Much of ANHB's assistance on this project was expediting purchases of parts and equipment.

The water operator explained a part of the difficulty in obtaining parts:

Just about everything [Wales has] they don't make anymore. This is in regard to the parts and equipment and supplies needed to operate and maintain the washeteria watering point. The existing washeteria watering point was constructed in 1970 and, as far as I know, there has been no major renovation to that facility [since then].

Another difficulty, as noted above, was that the community could not find a water operator who would consistently attend to the problem of getting needed equipment and parts. When Wales was temporarily without a trained and experienced water operator in the midst of the project, the RMW

called ANHB, concerned that the operator was the one who best knew the water and sanitation systems. Much of the ANHB project involved replacing parts and depended on the operator's knowledge. In addition, maintenance of the washeteria depended on having a certified operator. The RMW was concerned about whether he would have someone to work with in replacing parts; he feared that losing the operator could jeopardize the project.

Losing the operator seemed to slow the project down. By the fall of 1998 the RMW was frustrated because the parts had not yet been procured and the weather was getting bad. He said he had followed up with the city clerk and operator many times about placing orders for parts.

By early 1999, notes in the phone log indicate that money had been spent to purchase parts for the washeteria and that those parts had been installed. In contrast, there is a report in the trip logs from the second visit to Wales in June 1999, describing the washeteria as being in poor condition, with only one washer working. After complaints from local residents, the mayor and the city council directed the city administrator to use ANHB money to buy three new washers.

As the project progressed and people developed a "needed parts list," the RMW cited the critical need for a pump for pumping sludge from the septic tanks for the few buildings with water hook ups. But such a pump wasn't on the list of equipment included in the ANHB grant. ANHB approved re-allocating some of the parts equipment budget to pay for the pump.

The city administrator was also very concerned about the health hazard created by the leaking honey bucket bins around town. Children play near those bins. There was also a big problem when the snow melted. Wales needed new bins as well as a new trailer, because the new bins would not fit in the existing trailer.

In the spring and summer of 1999, community leaders began taking action to arrange for payment and shipment of new bins and a new trailer, as documented in discussions during ANHB site visits and in extensive phone log notes. The community also worked with PHS in ordering a new trailer and bins, as well as contacting the village of Savoonga. Savoonga agreed to give Wales three bins, if Wales would pay for the airfreight from Savoonga to Wales. As April 2000, the honey bucket bins had not yet arrived.

### **Community Education**

In the original work plan Wales' intention was "to educate the public on the importance and functions of the sanitation facilities; and [the use of] disposable waterless personal hygiene supplies during times of water shortages." Community leaders did meet with the RMW about one or two sanitation-related projects, including the sanitation facility master plan, and the PHS project (also known as the Alaska Native Tribal Health Consortium project). It was not clear from the record whether Wales carried out the community education it had planned as part of the ANHB grant.

### **Operator Training and Certification**

According to the closeout interview, the water operator had a number of training opportunities. The mayor reported that the city sent an operator to several workshops in Nome and to at least one in Anchorage. The operator got his OIT for water treatment and distribution, and there was some plan for

him to try to take the test for Level I certification. He was scheduled to attend the Feb 2000 OIT training for wastewater distribution.

However, as noted above, Wales had difficulty in getting a consistent water operator. The tribal administrator and ANHB staff discussed various options for dealing with this problem, such as having two operators. ANHB offered an example from Shishmaref, where the community had made the operator position a job-share and split it between two operators. Wales' tribal administrator liked the job-share idea and thought it might work. ANHB also suggested Wales might try a role model for the operator—for instance, pairing him with a mentor operator from the Nome Joint Utilities. The tribal administrator asked whether there were women operators in other communities, because she felt there were women in Wales who could become good operators.

In the closeout interview, the mayor reported that Wales had not hired a second operator. The community did hire a janitor to clean and maintain the washeteria, and the original operator maintains the water treatment facility.

### **Doing Water Sampling**

Wales does regularly monthly water sampling; however, some other chemical tests are only done once a year because they are more costly. It is not clear from the record whether these annual samplings were completed. In the closeout interview, interviewees said they were not sure if the community had done the samplings and needed to ask the water operator.

RUBA noted in June 1998 that there was a recurring water shortage. In March 1999, members of the community, an environmental planner, and the RMW met to discuss options for implementing water rationing. While the ANHB project grant did not directly address the need for a better water source for Wales, it seems that this should be integrated into any future project.

### **Utility Management**

Part of the workplan was to improve utility management by developing a monthly billing system for the honey bucket haul system, creating a record of monthly payments, and keeping the daily records for the washeteria revenue. This task seems to have progressed despite the frequent turnover in the clerk position. There were at least four clerks (probably more) during the course of the project.

The turnover in clerks contributed to the ongoing problem of poor financial records. In September 1999, RUBA reported that none of the needed financial reports had been completed because the city clerk was out for medical reasons and the temporary clerk who attempted to bring the books up to date was also ill. The city uses manual journals and registers, but could not determine if they were up to date.

During a trip to Wales in late spring 1998, ANHB personnel met with a local leader who was concerned about Wales' poor management of state and federal funds and the reputation Wales could get because of that poor management. The city has been receiving some guidance from RUBA to improve its financial accounts. Early in 1998, RUBA representatives made presentations about their program and provided follow-up training on record keeping. A number of times during 1998 and 1999, RUBA offered advice on how to deal with a variety of issues such as past due utility accounts,

public posting of delinquent utility accounts, reduced wages for clinic construction workers, withholding from employee wages for utility payments, and collection strategies.

### **Community Support**

Wales conducted two door-to-door surveys to gauge support for the proposed piped water system. The mayor reported citywide support. Most people wanted piped water. The city council was also interested in knowing how residents felt, because broad community support is crucial if the community intends to install a new piped water system.

There are, however, indications (in RUBA quarterly reports and other records) that some disorganization in the city government could pose problems. These reports indicate that from mid 1998 through the end of December 1999, Wales had continuous problems in getting a quorum for council meetings. When PHS staff traveled to Wales to discuss the proposed sanitation project, there was not enough public input or council involvement at the meeting to justify proceeding. RUBA reports also say the city council had difficulty running meetings and handling financial matters. They also note that, during the development of the sanitation facilities master plan, there were problems getting the community to attend public meetings, and city officials were hard to reach and not forthcoming with information.

### **Mentor Community**

Early in the project, staff from ANHB talked to PHS about Elim or Gamble as a possible mentor for Wales. They considered Elim, since Elim has its utility management, billings, and collections well organized. Later, ANHB brokered a mentorship with Nome, but Wales did not follow up on the arrangement. After that, there is no record of further discussion about a mentor community. In the ISER overall interview, the mayor said that Wales did not know about a mentor community arrangement.

### **Outcomes**

Wales used ANHB funds primarily to fill its emergency need for parts and equipment, including two or three new washers, a boiler and parts for the washeteria, honeybucket bins, and a trailer to haul the bins. Wales also wanted to buy a fuel pump for the washeteria, but did not realize that the grant period was over. The money Wales spent to repair the washeteria may not have helped in the long run. The washeteria is not completely repaired; the floor is very badly damaged and rotting, and other parts of the washeteria still need lots of work.

Wales also spent money to send its water operator for training, as well as paying to train at least four bookkeepers over the course of the project. However, spending money on training bookkeepers who keep quitting, and a water operator who does not get the job done, is unlikely to create long-term improvements.

In the ISER overall interview, the mayor was neutral about the project. She said that if ANHB had notified Wales that the grant was about ready to expire, Wales would not have lost the \$20,000 in grant money still available. She acknowledged that Wales had a role in missing the deadline too. Wales had city clerks one right after another, so no one knew what was going on. The city didn't do the required paperwork. She said it would have been helpful if ANHB had periodically notified the city about the time and money remaining in the grant. "We understand that losing the money is also our fault, but wish the money [hadn't gone] away."

**TABLE 15. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR WALES**

<p><b>Context</b></p> <p>About 170 people live in Wales. It is located on Cape Prince of Wales, at the western tip of the Seward Peninsula, 111 miles northwest of Nome. For the purposes of our project, one of the most significant things to note is that the location is subject to pretty severe weather with frequent fog, wind and blizzards that limit access to Wales. Wales has a strong traditional Kinugmiut whaling culture. Ancient songs, dances, and customs are still practiced. In the summer Little Diomed residents travel between the two villages in large traditional skin boats. The economy of Wales is based on subsistence hunting and fishing, trapping, Native arts and crafts, and some mining. A private reindeer herd is managed out of Wales and local residents are employed to assist in the harvest. Whales, walrus, polar bear, moose, salmon, and other fish are utilized.</p>	<p><b>Facilities</b></p> <p>Water is derived from Gilbert Creek during the summer, and residents haul treated water from a 500,000-gallon storage tank at the washeteria. Some use untreated water from Village Creek. The community needs a second water source, and has experienced water shortages; Cape Mountain is being investigated as a possible source. Almost all residents use honeybuckets, and very few homes currently have plumbing. The school, clinic and city building are connected to a piped water and septic system. A Master Plan to implement a piped system is due in mid-1998. The landfill is not permitted.</p>
<p><b>Expectations</b></p> <p>During a trip to the community an ANHB staff person noted “There's no question in my mind that the O&amp;M Pilot Project is going to present some challenge to Wales. There are a few things that are in their favor. One is that there is a sincere interest on the part of those that I spoke with in the city council to improve the current management and operation and maintenance of the system. This especially is in regard to a desire to improve the current operations.” During the visit the city council and others sat down to brainstorm about what they felt were the needs in the community. “We did not restrict the needs to just the operation and maintenance and management of the water and sewer system. I suggested we just talk about the community in general and what needs people saw for the community.” Some of the identified needs included: 1) The first would be a solution for adequate year-round water supply; 2) The second need was parts for the washeteria to renovate the washeteria; 3) Operator training; 4) They need more administrative support for management of the utilities; 5) The septic tank that's connected to the leech field for the wastewater system hasn't been pumped for up to 5 years, according to one of the council members, and the equipment to pump that septic tank is not available or working in the community; 6) The honey bucket bins are cracked and the leaking sewage from the honey bucket bins presents a health hazard; 7) They also need trailers for the snow go for the honey bucket bins; 8) The dome building that was constructed in the 1970s is in need of renovation. There are structural, electrical and other problems such as the fire exit doors; 9) The city maintenance shed and equipment, including a Datsun pickup are in need of repair and maintenance.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, and ANHB Trip Logs.</p>	

**TABLE 16. SUMMARY OF IMPLEMENTATION FOR WALES**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	City of Wales, Alaska Native Health Board, NSHC, PHS/OEH&E.	Mayor, city council members, Remote Maintenance Worker.
Equipment & Parts Repair/Replace	The City of Wales main focus is to purchase critical parts and equipment that is needed for maintenance of the washeteria.	In the washeteria at this point needed, I think, two more new washers or four, so I think four or two new washers were purchased with the O&M. And we ordered eight new bins, we haven't received yet and a trailer. Procurement of parts and equipment was useful because we needed all equipment.
Community Education	The City plans to educate the public on the importance and functions of the sanitation facilities; and the use of disposable waterless personal hygiene supplies during times of water shortages.	We had meeting with the RMW. That was on the discussion of the sanitation facility master plan, and was related to the PHS Project or the Alaska Native Tribal Health Consortium Project and was different from the ANHB grant.
Operator Training/Certification	The city plans to send the water plant operator to training some time this fall.	The operator is OIT certified in water treatment and distribution. He will be attending the February OIT training for wastewater distribution. The water operator was fired once because he was not doing his job and then rehired later because he is the only certified water operator in town. They hired a janitor to clean up the washeteria and are still looking for another water operator as back up.
Water Monitoring	The city plans to do water sampling of the current water source. This water sampling is usually done yearly.	Could not determine from the record whether they had done these samplings. May be related to the operator.
Utility Management	One person will be hired to do rate setting and a rate study for the water and sewer utility. The utility manager will also send monthly billings for the honey bucket haul system, keep records of monthly honey bucket haul payments, and keep records of daily washeteria revenues.	“There was quite a bit of turn over all through the time that this project went on. Most of it was not related to the project exactly, but some of it was. The utility clerk during most of the project was not very helpful and didn't report how much was left over. Lack of communication between him and the mayor was a big part. And then we got another clerk and it got worse, so I don't know.”
Budget	Mostly for equipment parts and replacement along with funds for operator training & certification, utility manager's time, clerical staff training, and water monitoring. Total: ANHB \$40,000, community \$46,608.00 (From Application). Most was spent on parts and equipment and they entire grant was not exhausted due to miscommunication among the manger, bookkeeper, and ANHB about the amount of funds available.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## **Deering**

Deering is about 57 miles southwest of Kotzebue, on Kotzebue Sound at the mouth of the Inmachuk River. The village is on a spit of land in a low-lying valley, with bluffs on either side forming a small bay. The community's approximately 148 residents are predominantly Inupiat who are very active subsistence hunters, fishermen, and gatherers. As is true in the other project communities, the economy in Deering is a mix of cash and subsistence activities. The only year-round jobs are with the school, the city, Maniilaq Association, stores, and a small airline. A nearby reindeer herd of some 1,400 also provides employment for a few, and there is some mining in the interior of the Seward Peninsula. Three residents hold commercial fishing permits. Residents may earn seasonal income from handicrafts and trapping.

The community drinking water is taken from the Inmachuk River. It is then treated and pumped into a 400,000-gallon insulated storage tank. Deering is undergoing major construction improvements on its new water intake, water treatment plant, storage tank, water haul, and vacuum sewer system. It is still dealing with repair problems, broken parts, and issues involved with bringing the new system online. The ANHB project was intended to help the city prepare to maintain its water and sewer systems once they were up and running.

A complicating development was that workers made a major archaeological discovery while excavating for this new sanitation system. The archaeological find delayed construction of the new system as well as the ANHB project. Much discussion during the project shifted to dealing with this find. RUBA helped the village try to find funding to conduct archaeological fieldwork, and there were even discussions of contacts with the National Geographic Society to write about the find. The find demanded more attention than anyone in Deering could have anticipated when the community applied for the ANHB grant.

Despite these delays, the community felt that the ANHB grant helped. Deering was able to buy much needed equipment and fix washers and dryers in the washeteria. The grant also helped pay for a bookkeeper and purchase a computer, which helped Deering get its financial accounts more in order. One crucial task that still remains undone is for the utility manager to attend utility management training.

Through the ANHB grant, the water operators got some much-needed training and their certifications. This operator training is especially helpful, since the city will be taking over the new system. Operators needed to learn to identify potential problems that could occur with the new vacuum sewer station. The training will help them be better prepared to keep the new system operating. Before, outside agencies did most of the O&M of the new system. This project prepared the community operators, through training and experience, to take over the new system.

The city council has developed and put in place policies and procedures for both the sewer and water delivery systems. Management of the system is still split: the city manages the water and washeteria, but not the new sewer system. This split made it more difficult for the city to implement some of the changes it wanted to make.

Deering completed a homeowner's manual on how to care for and maintain household plumbing. It had a public meeting to go over the manual; city officials estimate that maybe 25 percent

of homeowners use it. A user's agreement has been written, but it is not clear from the record whether all customers have signed it. In view of the current repair problems and lack of parts for the new system, some of the homeowners are reluctant to sign the homeowner's agreement, because they would then be responsible for the parts that are needed to keep their system running.

## **Implementation**

While there are quarterly reports, phone logs, and RUBA reports for Deering, it was more difficult than in other communities to decipher what actually did or did not occur. In some cases, the responses to questions did not directly address the question. When they did seem to address the questions, the answers were written in language that was difficult to decipher. In other cases, the phone conversations and field visits ended up being diverted to issues surrounding construction and the archaeological finds.

### **Partnership Team**

In the closeout interview, the utility manager in Deering identified ANHB and VSW (the coordinators of the new construction) as the major contributors to the project.

### **Utility Management**

The utility manager said in the ANHB closeout interview that from the beginning of the project, the Deering council developed good policies and procedures for both the sewer and water delivery systems. Quarterly reports to ANHB detail progress on changing ordinances and reviewing responsibilities, including review of ordinances, clarification of the customer agreement, review of budgets, and who should be seated on the board. As of spring 2000, management of the water and sewer systems was still split and the city was hoping to pass a resolution to combine the two utilities.

RUBA reports indicate the city staff was not receptive to advice about utility management during the first few quarters of the ANHB grant. This situation seems to have improved over the course of the grant. In a report from early 2000, RUBA said the city had asked for assistance in developing its water/sewer ordinance, utility board ordinance, rate schedule, collections policy and final FY99 budget for the water/sewer utility.

### **Utility Management Training**

The utility manager did not attend utility management training as planned. Arrangements were made for utility management training in Kotzebue in May 1999. The city sent the water plant operator, but the utility manager was unable to attend because of the need to deal with problems in the construction of the new water and sewer system.

In the closeout interview with ANHB, the utility manager said she hadn't attended utility management training because it was often in conflict with other work responsibilities and plans. RUBA reports consistently discuss the need for the utility manager to attend the training workshop as well, and discuss strong and weak points in the manager's job performance. They describe the manager as having "many good questions and concerns" about the utility operations, but as being often slow to make progress on necessary things like development of a budget for the new system. With RUBA's help, the manager began to provide the mayor with more timely project information.

## **Computer**

According to quarterly reports, phone logs, and RUBA reports, Deering purchased a new computer and received training to use the accounting package. Computer training for the utility manager was scheduled for April 2000 in Anchorage. RUBA provided ongoing training on the computer and accounting software throughout the term of the project. By the end of the project, RUBA reported that the city was using QuickBooks and doing very well.

## **Parts Replacement**

In the overall interview the utility manager said Deering had used some of the project money to fix washers and dryers in the washeteria. Aside from this equipment, the record is unclear what new parts were purchased.

The quarterly reports to ANHB indicate that Deering intended to develop a list of parts, but the reports do not say that the community actually purchased those parts. The ANHB closeout interview indicated problems with parts replacement:

With the water system being fairly new they're getting parts as needed. [Things would] work out better if the parts were on hand for our operators. The parts and equipment, we've been getting those from the city budget, and with funds and revenue sharing going down it'll be difficult. We've noticed that [we] need most frequent replacements [for] the water pumps in the homes...and the control sensors for the vacuum sewer system.

## **Operator Training**

The water operators both completed training in Kotzebue for upgrading their certificates for the maintenance and upkeep of the system. RUBA reports confirm that the water plant operator is OIT certified and complies with monthly testing required by the Alaska Department of Environmental Conservation. He has been working on the sanitation project this summer, so he will understand the system. At the end of the ANHB project the city reported it now has two OIT operators.

In addition, the operators have received some training from the contractors who are building the new sewer system and all the doghouses (the home plumbing add-on). They still need to work on diagnosing problems, because the pump parts can be rebuilt. It would help if they received training from the contractor on how to rebuild pumps.

## **Water Delivery Service**

The utility manager said in the closeout interview and the quarterly reports that the water delivery service is working well. The community has developed a draft schedule for water delivery and adopted an operating budget.

## **Customer Use Agreement**

A draft homeowner's use agreement was developed, and the city advertised to hire someone to go door to door to collect signatures. Not all the homeowners have signed the agreement. Some

homeowners have been reluctant to sign the agreement because they are worried about the extra expense of repairs and parts for the new system.

City officials reported that homeowners were not completely satisfied with the improvements to the sewer system:

The engineers redesigned our vacuum pump, and put on a different style of actuator that takes the gray water and the sewer out. Now what happens is that we have to deal with the gray water manually because it backs up into the showers. The system doesn't sense that the gray water is full, so people have to press a button to activate the system (to get rid of the backed up gray water). The button is in a box in the bathroom behind the toilet. In Noorvik they don't have this problem, and they have had their vacuum system for about 20 years.

The council hopes to have a homeowner's agreement done before the fall of 2000, because by then the one-year warranty on the new system will have expired. Some of the pumps on the new system have broken and are being replaced under warranty. About 75 percent of the breakdowns seem to be due to homeowner negligence. A homeowner's agreement would be needed to clarify the homeowner's responsibility for maintaining the system.

### **Community Education**

Deering developed a homeowner's manual to help community residents learn how to properly care for and maintain their new household plumbing systems. Sometime after the manuals were distributed, a public meeting was held to review the material in the manual and entertain questions. At that time, city officials learned that maybe 25 percent of the customers were using the manual.

### **Community Support**

RUBA reports say that before the start of the project, the city collected about 40 percent of customer deposits for current year hook-ups. Midway through the project, RUBA reported the city was collecting fees, and that over half of the customers had paid three months in advance. Customers were complaining, however, that their electricity bills had almost doubled since they were put on the new system, with the increase being attributable to the heat tape on the home lines.

Deering water and sewer policies state that sewer service can be disconnected for lack of payment. According to the utility manager, about 95 percent of delinquent customers pay within the two-month disconnect period. Since a good percentage of customers are paying their fees, it would indicate that they support the system. Administrators also say the community supports the utility and is generally happy with it.

RUBA quarterly reports confirm that the community is behind the new system:

A community meeting on the water and sewer project was set up so the city council could review current activities, and plans for the future, with the community residents. A regular election was held and the question of a piped water and vacuum sewer system versus saltwater wells and vacuum sewer was put to voters. The outcome was that a majority of the community wanted the piped water and vacuum sewer. A house-to-house survey was also completed at about the same time with the same results.

Whether Deering can financially support the new system over the long run is still a question. ANHB staff notes state:

The community is very much in support of developing the vacuum sewer system and want water in their houses. During [community] meetings, a number of people commented they would have a hard time coming up with \$100 for the utility bills that would be required to pay for the system. I'm wondering if two to three years down the road the community will have enough money to pay for ongoing O&M cost of the system. Is there enough money in the community to pay for that kind of O&M cost?

### **Outcomes**

The training that the operators attended was clearly the most helpful aspect of the project. It prepared them to take over the new water and sewer system. The community is still dealing with problems of bring the new system online. The utility manager commented:

The thing we're facing right now with 10 new units coming in is whether or not the system will be able to handle enough water storage and trying to plan when to fill the tank when it's cold.... We're afraid we're going to ruin them. The community is already fairly conservative in their water usage, so it is not clear how they will address this.

Deering is also still working on insuring that the new systems work properly. According to one administrator, problems occurred on the west side because some houses were not properly insulated at the point where the sewer system attaches. That problem was avoided on the east end. The city is asking homeowners with older houses—that were build in the 1940s—to insulate their walls lower toward the ground in the area where the new system will be placed. This will help guard against freeze up of the pipes. Most of the repair calls to date have been because homeowners allowed their systems to freeze. One remaining problem with the new sewer system is that maybe 20 percent of the households still have to manually push a button, located inside a box under the toilet, every time they take a shower, because the control sensor doesn't properly sense gray water waiting to be drained. The control sensors may still be under warranty.

**TABLE 17. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR DEERING**

<p><b>Context</b></p> <p>Deering is located on Kotzebue Sound at the mouth of the Inmachuk River, 57 miles southwest of Kotzebue. It is in a low-lying valley on the Kotzebue sound with bluffs on either side so it forms a small bay. The infrastructure in town is all located on a spit of land. The 148 residents are primarily Inupiat. The people are active in subsistence. Deering's economy is a mix of cash and subsistence activities. Moose, seal and beluga whale provide most meat sources; pink salmon, tomcod, herring, ptarmigan, rabbit and waterfowl are also utilized. The Karmun-Moto reindeer herd of 1,400 animals provides some local employment. A number of residents earn income from handicrafts and trapping. The village is interested in developing a craft production facility and cultural center to train youth in Native crafts. The school, city, Maniilaq Assoc., stores, and an airline provide the only year-round jobs. Some mining occurs in the Seward Peninsula's interior. Three residents hold commercial fishing permits. The village wants to develop eco-tourism, including a 38-mile road to Inmachuk Springs for tourists.</p>	<p><b>Facilities</b></p> <p>Water is derived from the Inmachuk River, is treated and pumped to a 400,000-gallon insulated storage tank. Major improvements are under construction, including a new water intake, water treatment plant, storage tank, water haul and vacuum sewer system. Archaeological remains were discovered while excavating for the new system.</p>
<p><b>Expectations</b></p> <p>Deering was undergoing major construction improvements to their new water intake, water treatment plant, storage tank, water haul and vacuum sewer system. The ANHB project was intended to complement and help maintain these systems in the long run once they were up and running. According to ANHB trip logs from May 19th, 1997, the project addresses the need for "consumer education, getting door to door contact, getting the utility manager going, getting the community prepared for their coming utilities." The project benefited from the up front preparation provided through this grant. It will be hard to measure in short term because this grant will be over prior to the full operation of the facility. In the long term, we can look at whether it decreases plugged lines, etc. The other way it can be measured is in payments, in how people pay for their utility rates. That could be a measure of success. The other key is in terms of contact hours of community education preparing for the new system.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ISER Mentor Interviews, ANHB Trip Logs.</p>	

<b>TABLE 18. SUMMARY OF IMPLEMENTATION FOR DEERING</b>		
<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	Ipnachiaq Electric Company, Alaska Native Health Board, Maniilaq Association, VSW, State of Alaska, RUBA, other community members and/or agency representatives.	Sanitation system operators; City and IEC Board, VSW representative, Summit Consulting representatives. Assistance from RMW and the RUBA program, and DCRA representative.
Parts Replacement	Information provided by Remote Maintenance Program and Village Safe Water on frequency and types of spare parts to be maintained to assure safe and efficient operation of system. Village Safe Water to provide a list of stock of spare parts furnished by the project.	Parts replacement did not go so well. Used some of the money for O&M of the system and some for fixing washers and dryers in the washeteria. The parts and equipment we've been getting those from the city budget, and with funds and revenue sharing going down it'll be difficult.
Community Education	Employ one local person to layout the groundwork for an easy to read manual on the proper use care and maintenance of the household plumbing for homeowners.	The homeowner's manual on how to care and maintain the household plumbing went fairly well. We had a public meeting to go over the manual and may be 25 percent use it. We'll probably do a survey as well.
Board and Management Responsibilities	Utility board/city council training to provide training for the local utility board & city council for the successful management of the water and sewer utilities.	From the beginning of the project until now, the council had pretty good policies and procedures on both the sewer and water delivery system. These are up to date and in place now. But management of the system is still split; that makes it difficult because the city is still doing the water and washeteria part.
Utility Management Training	Defining role of the utility manager, training the manager, computer purchase and related training.	The manager hasn't attended utility management training due to scheduling. They purchased and installed a new computer.
Operator Training/Certification	Training for operators on basic courses in vacuum technology and towards required certification.	Mike and Bruce, the operators, have gone to the training in Kotzebue for upgrading their certificates for the maintenance and upkeep of the system. No on site training.
Customer Use Agreements	The city staff will develop a customer use agreement that details city and customer responsibilities.	RUBA says user agreements have been signed by all customers expecting hookups this year, but the closeout interview suggests that not all have been signed. Due to some of the repair problems and lack of parts they've been having, the homeowners are not wanting to sign the homeowner's agreement because they would then be responsible for the parts that are needed to keep their system running.
Water Delivery Service	Develop operation and preventative maintenance system, establish a delivery schedule, and develop a collection policy.	The water delivery service is working well. They wait for homeowners to call in and say they need water. Then the homeowner comes in and purchases water and we have a list. They start delivery at 3:00 or after.
Budget	Totals: ANHB \$34,700, Community \$9,708 + \$9,708.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs, and ISER Mentor Interviews.		

## **Nunapitchuk**

Nunapitchuk is a Yup'ik village about 22 miles northwest of Bethel in the Yukon-Kuskowim Delta. The approximately 471 residents live on both sides of the banks of the river. The village has banned the sale, importation, and possession of alcohol. Most cash employment is found with the school, local businesses, or the city government. About 52 residents hold commercial fishing permits. Subsistence activity is still a large part of the local economy and culture.

Nunapitchuk has a well that supplies well water from a central tap year round. A flush/haul system was recently installed in 33 homes in Nunapitchuk, with water delivery and tank hauling services. Construction continues on the remaining 73 homes. Residents without this new service haul their own water, but the city does collect the honeybuckets.

The city was very interested in using ANHB grant money, together with the city's funds, to learn more about the true costs of operating the flush tank and haul system and adjusting the rates to reflect the true cost of operating this system. The community also wanted to have a certified operator, which would help the community secure funds from the Village Safe Water program and PHS.

A rate study done near the end of the project told Nunapitchuk more about the costs of operating the new system. The RMW analyzed costs in another village and provided some guidelines to the council about what rates Nunapitchuk should charge. He also evaluated how much it actually cost Nunapitchuk—in manpower, electric currents, and all other costs—to provide sanitation services. This information enabled the city council to make informed decisions about its rates, while also considering the public's capacity to pay.

Nunapitchuk's operators did earn certification. One water operator attended a couple of training workshops, and another operator attended small water systems operator-in-training and passed certification. Getting certified operators was a major accomplishment, since Nunapitchuk's previous operators had considerable difficulty attending workshops and passing the exams.

The ANHB grant funds also helped pay for a utility bookkeeper position. In the future, Nunapitchuk plans to pay for that position through household user fees. The new bookkeeper helped the community improve its record keeping as well as the quality of reports city administrators present to the council. The community had planned to purchase a computer to help with the financial accounts, but never did. Nunapitchuk still relies on an older machine and an accounting system that seems to serve the community's needs in the short term.

## **Implementation**

### **Partnership Team**

The quarterly reports, phone logs, and closeout interviews all make it clear that the city administrator took an active role in making sure the project kept moving forward. He maintained regular contact with a variety of agencies and people from other regions. One contact was with the RMW from Bethel, who helped with the washeteria and the maintenance of the new water and sanitation system. Another contact was the VSW representative, who looked for funding, monitored warranty clauses and was crucial in making sure the new water and sanitation system was completed.

Another person from VSW helped with trying to find out what kind of maintenance costs are associated with producing water and how much time is involved. RUBA staff was also involved with the community. One monitored the overall financial management of the project and helped with the rate study. Another helped assess Nunapitchuk's billing procedures and recommended some improvements; a third was helpful in dealing with water issues.

### **Operator Support**

The water plant operator for the city attended small-water-systems OIT and passed certification. This means that the city now has a certified water operator. It has been some time since the city had a certified operator, so finally getting one was a significant accomplishment.

This has been an ongoing problem for the city and it has faced considerable difficulties finding people who could pass the exams. Part of the problem, according to the quarterly reports, is that the tests seem to be hard for village operators. Another ongoing problem is that in some cases in the past, when operators were sent for training to places like Bethel, Anchorage, or Fairbanks, they did not show up for the training.

The city administrator talked with ANHB staff about the personal difficulties facing each of the potential operators, and together they came up with a couple of alternatives to get around the problem. One idea was to encourage the reliable operators—specifically sewage haul operators—to attend the training. Another recommendation was to find some high-school students interested in working with the operators. Perhaps the students could learn the responsibilities of the position and then perhaps go on to take the OIT exams.

It appears that many residents have some interest in being water operators, so the city has done a good job of attracting people to these positions. There are at least two people for the positions of operator and sub operator (alternates) for each of the following systems: the flush tank and haul system, the honeybucket system, the water plant and watering point, and the washeteria.

Because there are so many operators, each get bits and pieces of training rather than one or two individuals getting all the training they need to be certified. RUBA quarterly reports indicate the RMW found this to be a problem. It seems that each time he went to the village, he trained a different operator. He said it would be helpful if all the operators were present the next time he visits. RUBA reports also indicate that there can be problems with staff assignments when you have so many operators. Also, the need for communication and the need for administrative supervision is greatly magnified when there are a large number of operators.

### **Billing and Accounting System**

In the closeout interview, the city administrator said that financial reporting had improved. RUBA set the city up with cash receipt journals and ledgers and helped instruct the bookkeepers on how to keep the books in order by using purchasing, billing and accounting software on the computer. With this new set up the city staff was able to produce regular budgets. RUBA instructed them on ways to complete the payroll time sheets for the operators. This has helped them get a handle on how operators spend their work time.

The city runs most of its financial programs on an aging Macintosh computer that is starting to slow down with all of the new financial software and files the city has loaded. The city hoped to acquire an IBM compatible computer so it could transfer all the billing, and in nearly every quarterly report to ANHB, the city said it hoped to acquire a computer in the next quarter. But lack of funds caused continual delays in acquiring a new machine.

ANHB staff observed that, "The system [the city administrator] has set up is very well organized, and [staff] are very conscientious in maintaining this system." RUBA reports said, "The administrator is doing well using spreadsheets when doing payroll. They use a complex computer system monitored by an accountant in Bethel. It is run well and accurate. The only problem is a lack of simple useful financial reports for the council."

### **Utility Management Support**

The ANHB grant helped pay for the utility bookkeeper position. The city said this helped because they might not have been able to pay for the bookkeeper otherwise. Near the beginning of the project, the city hired a water and sanitation clerk who was learning slowly, but was already instrumental in reporting outstanding bills to the city council. As the project progressed, she really got "on top of the situation." Quarterly reports state: "Her time is very helpful in the operations and maintenance of both the honeybucket and water and sewer systems, and keeping track of revenues and expenses."

In the early part of the project, the sanitation clerk went house to house to deliver the bills. Around January or February of 1998, the city began mailing bills to the houses instead of hand-delivering them. The clerk said that this is better, because now all the people get their bills at the same time. Customers can mail the payments to the city or pay in person.

Currently the sanitation clerk has an office, but must share a computer with the administrative assistant and administrative clerk. The city hopes that user fees collected from households for the water and sewer service will be sufficient to pay for the bookkeeper position, now that ANHB funds are no longer available.

### **Rate Study**

Several years before the pilot project, RUBA quarterly reports emphasized the need for a rate study. During the project several pieces of the water and sanitation system were studied and the community did preliminary rate studies for various components of the system. Nunapitchuk is still waiting for the results of a much more comprehensive rate study that looks in more detail at the rates for the new flush tank haul system.

For the first three-quarters of the project, the bookkeeper, with help from RUBA, reviewed water and sanitation revenue collections and compiled information for a future rate study. In addition, the bookkeeper also kept close track of all revenues and expenditures for use in the rate study, and the assistant bookkeeper collected information for a rate study for the washeteria. They worked at separating the record keeping for the honeybucket haul system, the new flush tank haul system, and the watering point. This gave them better information on the cost of operating each system and helped them come up with appropriate rates.

In addition, the state's Village Safe Water program studied the rates for water at the laundry, and RUBA analyzed material from another village to learn how it arrived at their utility costs. Nunapitchuk used all this information to study how much to charge customers and how much its system cost to operate, including costs of manpower, electricity, and all other costs.

City administrators presented this information at city council meetings so the council could make informed decisions about rates. It was important for the council to include a consideration of the public's ability to pay when setting rates. Some people in the village rely on public assistance, while the school or the city employs others. After studying all the data, the city came up with preliminary rates for each service. Success depends in part on having an effective billing system and community support, but the city council is also very interested making sure it succeeds.

The rate studies appear to be for particular components of the system. As the village learned more about the cost of providing service, it renegotiated the agreement with one of its major customers, the school. The school payment was crucial if the utility was to remain financially solvent. RUBA reported:

The city signed an agreement with the School District on wastewater disposal. Part of the agreement was that the city would complete a rate study to document the cost of water production. Due to the combined nature of the water plant and washeteria, this study will be time consuming. The result will not only be a rate study, but also a rate model that the city can continue to be used to determine costs. The study will also identify areas that could be improved to reduce rates and costs.

In late 1999, the city council requested a rate study for the flush tank haul system to follow up on this agreement. RUBA requested asset information for use in the rate study and initiated the study for the FTTHS. A previous preliminary rate study of this new system indicated that the FTTHS is only generating about half the revenue to cover the expenses. This cannot go on for very long without putting the city in financial hardship.

ANHB commented on this same issue, noting that with this information in hand, the city council faces some difficult choices about revenue collection and policies for nonpayment.

### **Community Support**

Nunapitchuk's utility apparently has instituted a policy of tacking a five percent fee on to outstanding bills for nonpayment each month. So if customers fail to pay their bills in a given month, they will face a five-percent surcharge during next billing cycle. The city council informed customers about the new payment policy in public meetings, as well as in their regular billing notices. After a six month experimental period, the city council will review the five- percent policy to see if it worked.

The surcharge targets people who don't pay for services. Even though the customer rates are determined by the cost of providing service, some people are very stubborn and look for ways not to pay. The council wants to help them rather than hurt them. For a time, it considered taking customers to court to force payment, but decided that in the long run that would only hurt people and their way of life and not help them make payments. Instead, the council chose other collection enforcement alternatives, like withholding privileges to other city services (like laundry facilities) or not allowing

delinquent customers to attend city recreational activities. Local officials say offenders do start paying after that.

### **Audit**

The city planned to do an audit of its accounts as part of the ANHB project. However, the state's single-audit guidelines provide that the city be above a threshold of \$150,000 in inter-governmental revenues before it is required to perform an audit. Under the federal guidelines, the threshold is \$300,000. The city did not reach either of these thresholds during the project, so the audit was never done.

### **Outcomes**

The ANHB grant money definitely provided a way for the water and sanitation system to stay afloat financially. The grant provided much-needed funds to pay for a bookkeeper, train an operator, develop the financial management system, and gather information for rate studies. These tasks worked together to create a more financially viable water and sanitation system. The bookkeeper and the improved financial management have helped the village keep track of delinquent accounts and determine how much it needs to charge to keep the services running. The council played an important role in determining appropriate rates for some parts of the system and came up with ideas to insure that customers pay.

Comparing RUBA quarterly reports from before and after the project suggests that the project helped improve system finances. Reports in late 1999 and early 2000 summarized the changes:

The city is doing a good job in managing its finances. According to preliminary study, the water and sewer services are close to breaking even. That can change mainly with labor requirements for hauls. City is looking for efficiencies and charging for services provided. Some examples include the new water fill point at the washeteria and the process implemented for charging people for water they get from the washeteria. Overall, the operation and management of the utility is improving. They have a lot of projects under way and several more under consideration. These changes along with changes in funding of local programs by the legislature will all greatly affect the services,

ANHB staff's perception was that the city had benefited from the project—that project funds had allowed Nunapitchuk to make improvements in management and operation of the sanitation system. But the question remains whether the community will be able to sustain those improvements over the long run.

**TABLE 19. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR NUNAPITCHUK**

<b>Context</b>	<b>Facilities</b>
<p>The 471 residents of Nunapitchuk live on both banks of the Johnson River, twenty-two miles northwest of Bethel in the Yukon-Kuskokwim delta. Nunapitchuk is a Yup'ik village, and residents are involved in commercial fishing and subsistence activities. The sale, importation or possession of alcohol is banned in the village. The school, local businesses and the city government provide most employment in Nunapitchuk. Commercial fishing and subsistence activities are a focal point of the culture. Fifty-two residents hold commercial fishing permits for salmon and herring roe net fisheries and roe on kelp.</p>	<p>Well water is treated and supplied from a central tap year round. A flush/haul system was recently installed in thirty-three homes in Nunapitchuk, with water delivery and tank hauling services. Construction continues on the remaining seventy-three homes. Unserved households haul their own water, and honeybuckets are hauled by the city. Sewage containers are located throughout the city, and are emptied into one of two new sewage lagoons (one on each side of the river). Teacher housing, located in the old school, has an independent water and sewer system that needs improvements.</p>
<b>Expectations</b>	
<p>ANHB trip log notes, "My overall sense is that this project is one that is wanted by the administration of the City of Nunapitchuk. The city administrator is very interested in utilizing ANHB resources together with the city's resources. He wants to learn more about the true costs of operating the flush tank and haul system and adjusting the rates to reflect the true cost of operating this system. I think he's very sincere about wanting to have a certified operator. He knows that having a certified operator will assist the community in securing funds from Village Safe Water and PHS. Overall I think that there is a lot of interest in Nunapitchuk for the city to carry this project out. The needs identified were operator training and certification, a need for a billing and accounting system to support the utility management, administrative support for utility management, and a rate study for the water and sewer system. In addition, he identified a need for support for paying the cost of the yearly audit of the City of Nunapitchuk's finances, if, in fact, they expend enough funds such that an audit would be required.</p>	

**TABLE 20. SUMMARY OF IMPLEMENTATION FOR NUNAPITCHUK**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	City of Nunapitchuk, Alaska Native Health Board, AVCP, PHS/OEH&E, VSW, RUBA.	RMW; VSW representative; RUBA representatives; ANHB staff, utility manager; mayor; laundry water operators; sewer operators. Substitutes: bookkeeper; alternate VSW representative; AVCP representatives; and city assistant.
Operator Support	Water operators to attend an operator training (OIT) session in Bethel where they learn the basics of water quality and at the end get certified to operate water plants.	Operator I attended a couple of trainings and operator II attended small water systems operator-in-training and passed certification.
Billing/Accounting System Improvements	Investigate options for improving our utility billing system including making it more compatible with the city general accounting system. This activity will support the purchase of computer hardware and software.	The reporting requirements have improved. RUBA helped us get set up with cash receipt journals and putting them to ledgers We did not purchase the computer and software yet. We were supposed to but we never did get it. But I'm planning to.
Audit Support	Support a portion of the audit requirement if the city performs an audit.	No, we never did get an audit, we didn't meet the state's threshold on single audit guidelines.
Utility Management Support	Hire a utility billing clerk to handle day-to-day billings and collections. Also will support about 5-10 percent of administrative clerk time to over see the project.	The money that came helped both in water and sewer utility management to pay for the utility bookkeeper position...it really helped us because we were (low on) our funds and with the state cutting state revenue sharing, municipal assistance. Through the user fees we collect from households for the water and sewer service we are able to pay for that position now that the ANHB funds are no longer available.
Rate Study	A rate study for the new Flush Tank and Haul System including the honey bucket haul system.	Yes, we did carry out a rate study. The RMW analyzed another village (Mekoryuk) and he made a story about how they went about arriving at utility costs and brought it over here to my village. We studied how much we are charging them at the moment and how much it's costing us in terms of manpower and electric currents and all other costs associated in producing a suitable response to service. So the city council made informed decisions and also considering the public's capability to pay.
Budget	Most of the money went to pay personnel costs for bookkeeper, and utility manager. Other costs included the per diem, travel, and workshop costs for operators to go to Bethel for operator training. Totals: ANHB \$40,000, Community \$69,139.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs.		

## **Saint Michael**

The village of Saint Michael is approximately 125 miles southeast of Nome and 48 miles southwest of Unalakleet. The community is on the east coast of Saint Michael Island in Norton Sound. About 381 people live there. Most are Yup'ik, and some can trace their ancestors back to the Russian traders. The economy in Saint Michael is based primarily on subsistence food harvests supplemented by part-time wages. Most wage employment is with the city government, the IRA council, village corporation, schools, and local stores. Eight residents hold commercial fishing permits, and the villages of Stebbins and Saint Michael jointly manage a herd of reindeer. The sale and importation of alcohol are banned in the community.

Drinking water for the village of Saint Michael is brought from Clear Lake and then treated and stored in a 1.2-million gallon storage tank. A new sanitation system is under construction to provide water delivery and holding tanks for homes, a piped gravity sewer system with septic treatment, and household plumbing. At the start of the project, 44 homes were served by the new system, and another 37 were slated for connection. Residents without the new system still use honeybuckets and haul their own treated water.

The village used ANHB grant funds to help prepare for the new system. Community leaders began by identifying some of their needs, including utility management training for the bookkeeper, public education about the new system, additional operator training on using and maintaining the new technology, and a spare parts inventory for the existing system. The community also wanted to address the issue of who would ultimately be responsible for the management, operation, and maintenance of the system: would it be the city of St. Michael, or would the responsibility and authority eventually be transferred to the tribal government?

The grant funds did help the village prepare to manage its new system for the long term. For one thing, the questions raised while the community was planning for the ANHB grant highlighted the need to bring the city and the tribal councils together to jointly determine how the new system would be managed and who would manage it. The city administrator emphasized, "If we hadn't put these two councils together with this grant, I don't think they would understand the bigger picture of putting our water and sewer in." She added that both organizations now have a better appreciation of the importance of the new system for the village and a better understanding of their combined role in managing the system. The example of cooperation set by the councils also encouraged community support of the project, because people in the village saw the two organizations working together.

Saint Michael also used the ANHB grant structure to generate other positive effects. The city administrator said going through the grant process helped her focus more closely on administration and maintenance. She also noted that the city clerk and bookkeeper were better able to organize expenditures and revenues for water and honeybucket operations. The new computer also did wonders with data gathering, and it was much easier to do monthly reports for the council and help the utility clerk with monthly logs for water and honeybucket billing and collections.

The grant also helped the village get past a potential bottleneck that threatened to delay the completion of the new sanitation system. The water operator is now certified, and his training and certification were funded by the ANHB grant. This was important to Saint Michael, because the

community needed a certified operator in order to qualify for the VSW grant, which funds the water and sewer project.

ANHB money also helped the community get the new washeteria up and running. The attendants for the new washeteria got some training, but need more. Saint Michael purchased a cash register, which made it easy to develop separate accounts for the washer, dryer, pump machine, and showers. It also purchased several washers and dryers, because at this time the community doesn't have a technical person to fix them. The grant did, however, enable one of the washeteria monitors to attend an automated laundry workshop to learn how to fix washers. The community did not develop a procurement process or an inventory as it had planned.

Last, but certainly not least, Saint Michael recently drafted a homeowner's agreement. Once it is finalized, the city will send an information packet to all their customers, explaining the homeowner's agreement. They have also drafted a rate setting review for water, wastewater, and solid waste. This will need a bit more work because collections will be different under the new system.

## **Implementation**

### **Partnership Team**

The most important partnerships that occurred during this project were meetings between the Native Village of Saint Michael and the City of Saint Michael about the new plant and the water shed site control and what it would cost to accomplish that plan. The city and the tribal council met early in the project, and there are indications in the record that their continued contact and willingness to work together helped the project proceed.

The village is not a recognized RUBA community and receives only limited support and advice. It was in contact with representatives from RUBA to discuss what the city needed to do to become a RUBA community and thereby receive more extensive and regular support. RUBA employees provided a checklist of things the community needed to do before it could be recognized as a RUBA community and receive full RUBA support. The RUBA representatives observed that important financial activities that were not completed (letters not mailed, unopened bills, no bank reconciliations). RUBA considered this a "non-management situation" and required the village to meet basic management requirements before it could become a RUBA community. The community was a bit frustrated by this situation, believing Saint Michael needed some help to meet RUBA's minimum requirements for receiving help.

### **Utility Management**

In the closeout interview, the city administrator said "On the administrative side, the grant helped me focus [more] on operation and maintenance. It helped the city clerk and bookkeeper organize expenditures and revenues that were coming in for water and honeybucket. It helped us to learn how to organize that side of the department for water operations." The administrator still does most of the utility management but tries to delegate some. She was able to attend a rate setting and financial planning workshop, where she learned about the software Rate Mod Pro for utility management and financial planning.

## **Computer**

The computer did wonders for data gathering. It was much easier to do monthly reports for the council, and it helped the clerk do his honey bucket and water billing system and collection logs for each month. With the new computer, the city began installing rate setting, billing, and collections accounts. RUBA has uniform software and procedures to follow to include parts inventory, routine maintenance log, purchase orders, procurement of supplies and budgets. Saint Michael's bookkeeper filed bank reconciliations, chart of accounts, employee earning records, and organizer files on the computer through Quicken Basic. All these new accounts will eventually help the community meet some of the minimum requirements to become a RUBA community.

## **Operator Training**

According to ANHB and RUBA quarterly reports, the water operator is now certified. This was an important accomplishment since the community needed a certified operator to get 100 "points" for the VSW grant. The grant was essential to continue funding for the water and sewer project. Saint Michael still needs a certified alternate water plant operator, but there is a local resident who hopes to complete the needed training.

## **Washeteria**

As part of the grant, Saint Michael hoped to get training for those involved with maintaining and operating the washeteria. The washeteria monitors got some training, and the water plant operator did go to an automated laundry workshop to learn how to fix washers.

The community did purchase a cash register for the washeteria, using funds from the grant. Employees were able to easily program the register to write up separate accounts for the washer, dryer, pump machine, and the showers, since those categories are automatically recorded onto the tape.

During the course of the project, some of the washers in the washeteria broke down. Replacing a washer and two dryers became a priority, with customers complaining and access to the washers and dryers becoming a sore point in the community. At one point, only two washers were working. Overloading caused some of the breakdowns. The city administrator asked to re-allocate some of the grant money reserved for maintenance to buy a new washer for the washeteria. Near the end of 1998, the community used ANHB grant money to buy one small washer, one large washer, and two dryers.

## **Parts and Inventory**

The community had some difficulty developing an inventory of parts. The quarterly reports to ANHB say Saint Michael needed assistance in developing the inventory since the community had never done it before. City officials consulted with the RMW to help them develop a list of the parts. By early 1999, city staff reported they had acquired spare parts and developed an inventory for some parts of the water system. Specifically, parts of the heating system going to the tanks were replaced and they replaced the valves. In the closeout interview in the spring of 2000, the city administrator said the community still needed to do a complete parts inventory for all aspects of the system and develop a procurement system for automatically ordering tools and spare parts for maintenance of the washeteria.

## **Community Education**

The planned homeowner's manual and agreement were delayed because the system was not yet completed. When the new water and sanitation system is completed, the city plans to send an information packet, including a customer use agreement, to all customers.

## **Rate setting review**

A rate setting review for water, wastewater, and solid waste has been drafted. The draft still needs to be amended to reflect the changes in collections for the new system. In early 1999, the quarterly reports said this rate review was yet to be accomplished, but that city officials were very near to setting it up.

## **Community Support**

In the closeout interview, the city administrator said that more people were paying for honey bucket services than had been before the project. She estimated payments had increased by 20 percent or more, but was not certain of the exact figures.

## **Outcomes**

In quarterly reports and in the closeout interviews, the city administrator emphasized that the best part of the project was educating the city and tribal councils and getting them to work together:

In the long-term...I think the most important part was that the city and IRA council got together and helped each other determine [how the new system would be operated]. If we hadn't put these two councils together with this grant I don't think they'd understand the bigger picture of putting our water and sewer system. [The two organizations] share all our contractual work with J.W. ANTHC and PHS people. When they come in they invite the IRA council and the city council. It makes the two organizations understand. I think that's the long-term benefit that this grant brought to the community. That also had an effect on community support. People see everybody working together [and are more likely to support the system].

The grant also helped the community purchase parts and do modifications and maintenance on the water treatment plant and utility system. In the closeout interview, community leaders said they would miss the grant because they still need additional funding for continued operations and maintenance, as well as for education for water operators. They still need to train two more water operators, because one is not sufficient for the community. They plan to seek funding for maintaining the new system.

The other major accomplishment is that Saint Michael now has a system in place, with the city office for billing and collection. It is able to do finances automatically on the computer and produce monthly reports for the city council meetings. This improvement in internal recording keeping helped the community move toward meeting the minimum requirements for becoming a RUBA community.

**TABLE 21. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR SAINT MICHAEL**

<p><b>Saint Michael Context</b></p> <p>St. Michael is located on the east coast of St. Michael Island in Norton Sound. It lies 125 miles southeast of Nome and 48 miles southwest of Unalakleet. St. Michael's population of 381 is largely Yup'ik today. Many residents are descendants of Russian traders. Seal, beluga whale, moose, caribou, fish and berries are important staples. The sale or importation of alcohol is banned in the village. The St. Michael economy is based on subsistence food harvests supplemented by part-time wage earning. Most cash positions are found in city government, the IRA council and village corporation, schools, and local stores. Eight residents hold commercial fishing permits, primarily for the herring fishery. Stebbins and St. Michael jointly manage a herd of reindeer.</p>	<p><b>Facilities</b></p> <p>Water is derived from Clear Lake, is treated and stored in a 1.2 million-gallon tank. A new sanitation system is under construction to provide water delivery/holding tanks for homes, a piped gravity sewer system with septic treatment, and household plumbing. Forty-four homes are served by the new system, and another thirty-seven houses are being connected. These unserved residents currently haul treated water and use honeybuckets. Funds have been requested to expand the washeteria. DEC has approved the landfill for use, although it is not permitted.</p>
<p><b>Expectations</b></p> <p>On June 17, 1997, there was a special city council meeting called to discuss the O&amp;M Pilot Project and the work plan. Perception of what was agreed upon in those discussions included the following items: 1) there was a need expressed for training for the bookkeeper in utility management; 2) there was a need for public education associated with the introduction of this new water and sewer system into the community; 3) there is a need for additional operator training for the operators so they could better understand how to operate the new technology; and 4) there was a need to have a spare parts inventory for the existing system. Apparently there are problems in maintaining the existing system and one of the problems associated with that is the lack of spare parts. Another issue that came up related to the project work plan was the interest in using ANHB funds for the project to somehow assist the City of St. Michael to sort out who would be responsible ultimately for the management, operation and maintenance of this system. Would it be the City of St. Michael or would that responsibility or authority eventually be transferred to the tribal government? So there was some discussion as to how there might be a way to use these funds to help the city sort out this question.</p>	
<p>Source: Alaska Department of Community and Economic Development, Community Database, Application for ANHB Grant, ANHB Trip Logs.</p>	

**TABLE 22. IMPLEMENTATION SUMMARY FOR SAINT MICHAEL**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	IRA Council, City Council, City Administrator, City Bookkeeper, City Clerk, Water Operators, Washeteria Monitors, ANHB, RUBA, Norton Sound Health Corporation, PHS.	Yes, Norton Sound Health Corporation for the training that we used, the one for EPA. The EPA conferences that are held there, we tried to get people there to get them educated on the national and state level, operation and maintenance or how we could get more grants.
Administrative Staff Training.	To include software training, rate setting, billing, and collection logs. Both classroom and one-on-one training.	On the administrative side it helped me to focus on operation and maintenance. The city clerk and bookkeeper organized expenditures and revenues that were coming in for water and honey bucket. Those were organized house-by-house. It helped us to learn how to organize that side of the department for water operations.
Computer	Purchase appropriate computer hardware and software to be used for utility management, including.	The computer did wonders for our data gathering. It is much easier to do monthly reports to the council and help with honey bucket and water billing system and collection logs for each month.
Operator Training	Training to achieve certification for a minimum of OIT for water treatment, water distribution, and wastewater collections.	Our water operator is now certified. That was one big progress that we made because we needed 100 points for our VSW grant in order to continue funding for our water and sewer project. Water operator had to be certified and this helped certify our water operator.
Washeteria Monitors	Basic training on record keeping.	The washeteria monitors did get some training, but need more. We did purchase a cash register. And that made it very easy to program it to automatically write up the categories for washer, dryer, the pump machine, and the showers. It helped Alex to go to an automated laundry workshop to learn how to fix washers.
Parts Inventory/Tools	Prepare a parts inventory and acquire spare parts and inventory. Develop a procurement of equipment. Identify and purchase tools and spare parts for maintenance of the vacuum sewer system.	It helped us to replace our washers because we don't have a technical person to fix these washers. We purchased several dryers and washers so far. We did not do so well on the inventory or developing a procurement process.
Public Education	Orientation of consumers to the new system (to individual homeowners, and commercial users, utility board, including education and consumer use agreements).	We are preparing the homeowner's agreement for each household. When it is completed we will send an informational packet to include a customer use agreement.
Utility Management Structure	Rate setting review to include but not limited to water, wastewater, and solid waste.	[A rate setting review for water, wastewater and solid waste] has been drafted for the next meeting. It needs to be amended because of the piped water that is coming through. We are still working on that because things are going to change from a honey bucket to a collection end. The system will be a little bit different.
Budget	Totals: ANHB \$38,044, Community \$7,268.40.	
Sources: Workplan, ANHB Closeout Interviews, ISER Overall Interviews, Trip Logs, ANHB Phone Logs.		

## **Shishmaref**

Shishmaref is a traditional Inupiat village on Sarichef Island in the Chukchi Sea. In 1997 the population was 542. In October of 1997 a storm caused severe erosion, washing away an estimated 30 feet of beach front. Community residents live a predominantly subsistence lifestyle, depending on fish, walrus, seal, and other subsistence foods. There are two forms of government: the city of Shishmaref, a municipal second-class city, and the Native Village of Shishmaref, a federally recognized tribe.

The city operates the water and sewer facilities. Water is collected from a surface source and is then treated and stored in a water tank. Residents haul water from the washeteria to their homes. The city has had a honeybucket haul system, but in 1996 PHS funded the first phase of a flush tank and haul system for twenty homes. The planned second and third phases of the project will add the remaining homes to the new system.

Shishmaref participated in both the first and second phases of the pilot O&M project and was extended into March 2000. The Phase II report<sup>1</sup> provides a detailed description of Shishmaref's project activities during Phase I and most of Phase II. This summary will highlight some of the most important findings in the first report and update important changes.

The community's plan remained the same through the second phase of the project. However, this final phase called for the completion of a large number of activities, including the creation of a partnership team, the purchase of needed replacement parts, new pumps for the water plant, community education, monitoring costs and revenues from the sanitation facilities, developing a rate structure, operator training, and a customer survey.

## **Implementation**

### **Parts & Supplies for Washeteria and Water Treatment Plant**

The city of Shishmaref was able to purchase and install the equipment it needed for the water treatment plant and the washeteria. With the assistance of the RMW, the community obtained three washing machines and some spare parts from Gambell. Then PHS staff worked with the RMW to order approximately \$30,000 worth of parts for partial renovation of the washeteria/pump house. Shishmaref also purchased and installed parts for the water treatment plant. The boiler was finally installed during the summer of 1997. City staff reported in closeout interviews with ANHB that these parts had been very helpful and had enabled them to keep the washeteria and water treatment plant operational. They also believe it improved the operation of the water plant.

### **Parts and Repairs for the Flush Tank Haul System**

The newly installed Flush Tank Haul System (FTHS) gave the city a number of problems. During the first winter of operation, (1996/97) the haul operators experienced difficulties with the

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<sup>1</sup> Evaluation of the Alaska Native Health Board's Sanitation Facility Operation and Maintenance Program. Final Report on Phase II Projects. Institute of Social and Economic Research. February 2000.  
<http://www.iser.uaa.alaska.edu/projects/ruralsan/ruralsan.htm>

sewage haul equipment. When full, the sewage haul unit was too heavy for the ATV to pull. During the same period, the city also experienced problems with pipes freezing in the flush-haul units. Even though the contractor came to the village to repair the units, system operation was less than adequate. During the winter of 1998/99, 13 of the 19 flush haul units did not work properly. This created significant maintenance costs for the city and a great deal of frustration for the operator and customers.

At the time of the closeout interview in the spring of 2000, the city continued to have problems with freezing pipes in some of the FTTHS units. It purchased some “mustang jettets” that are intended to help reduce the freeze up. The water operator received training in using the jettets, and because the problem has been so irksome, the city would like to get the haul operator trained as well. The jettets do seem to have helped the situation somewhat, as the administrator reported in the closeout interview that Shishmaref had “not had any [freeze-up] problems lately.”

The RMW investigated to find out why the freeze ups were occurring. He believed it was a design problem. The pipes were installed directly under flooring, where there was no direct heat. As a result, the pipes froze in the extremely cold arctic weather. The city was advised that if it wanted to fix the freezing problem permanently, it would have to tear the pipes out and install them differently.

Aside from freeze ups, other problems are still being rectified. In the closeout interviews, project participants said that a plumber from ANTHC had worked on replacing cracked sewage tanks. Many tanks were cracked and leaked raw sewage out onto the ground. After all these repairs, two units were still not working. The city did little on the inside of the homes, since that is considered the homeowner’s responsibility.

This represents a substantial improvement in the operation of the FTTHS. Before the RMW came in to do repairs, 16 units were not working. According to the participants in the closeout interview, most of the problems with the FTTHS are attributable to design problems—not something that the homeowner had control over. Most problems were attributed to freeze up, but some of the pipes were angled the wrong way, and about 9 or 10 of them had to be changed because of cracks.

## **Community Education**

According to the report from an earlier project phase, the contractor who built the flush haul system was reported to have provided posters, placards, and pamphlets for the houses. But there was no record of other types of community education during the early parts of the project.

During the latter part of Phase II, the city posted notices in the washeteria, because the washers and dryers were routinely being overloaded. The project participants said this was helpful, because customers are now aware of what is required. The notices also made the attendants more aware and now they monitor how people load the machines. Administrators also believe the notices helped avoid damage to the washers and dryers.

There was not much community education undertaken with the new FTTHS installations. Even the city haul operators knew very little about how to operate the system. City administrators tried to arrange training with ANTHC for their haul operators. They were particularly interested in training in the use of the mustang jettets, since they had proved very useful in avoiding freeze ups in the FTTHS units. Once the operators are trained on the new system, they will be able to help educate customers.

The project participants also wanted to educate users about the costs and the need for revenues to run a sanitation system. They feel many residents don't understand how much it costs to operate and maintain the system, but have never done this type of education. They have similar difficulty with the honeybucket system, because customers do not want to pay \$20 a month and don't understand that their \$20 doesn't even cover the actual cost of operating the system.

City administrators do inform council members and keep them apprised of the revenue shortfalls they face. The city clerk has told the council many times that the revenues do not cover costs, and that the city does not have adequate reserves for unexpected repairs. The city considered opening the washeteria only three days a week, but the RMWs suggested raising washeteria prices. The council has been unresponsive to the city clerk's suggestions.

### **Utility Management**

Part of the work plan was improving financial management of the utility by monitoring the revenues and costs for running the sanitation facilities. The city also wanted to review the established rate structure to identify what levels of revenue would be necessary to ensure long-term operation and maintenance of both the water plant and washeteria.

Representatives from RUBA provided the community with guidance on improving financial management and made a number of suggestions to help straighten out the bookkeeping. These suggestions included dealing with IRS taxes on the current payroll, figuring out debts and beginning repayments, and improving revenues while cutting costs. In early 1997, RUBA staff assisted the city clerk and bookkeeper in setting up a separate account for the O&M project. By early 1998 the clerk had tightened up cash receipt procedures at the washeteria. Projections for FY98 showed revenues vs. expenditures for the washeteria were at a break-even point.

The city improved its financial management using a combination of hand ledgers and automated spreadsheets. RUBA staff recommended that the next step for the city was to obtain a good accounting software package and computers so the utility clerk could produce individual account reports more easily.

When asked about the success of these new financial management arrangements, the project participants said the new separate account receives all the revenue collected from the washeteria, water and sewer, and honeybucket haul. The city uses this account to pay for operation of all the water and sanitation facilities. It still does not have a reserve account for emergency repairs, and sometimes needs to draw from the general city account to pay for some items. Project participants also noted that another benefit of the new accounting system is that the council now gets monthly financial reports about the sanitation system. This report includes monthly income and expenditures, as well as year-to-date expenditures. The reports substantially improve the quality and amount of information available to the council, compared with just a year earlier. The community now has a much better idea about what levels of revenue are necessary to support the system.

The city clerk reports continuing frustration that the council has not used the information to make important decisions about how to change the rate structure or improve revenue collections.

## **Utility Management Training**

The city clerk took three utility management workshops. The first one was an Introduction to Utility Management in September of 1998. The second one was Introduction to Financial Management, in January of 1999; and the last one was Utility Organization Management, in November 1999. In February 1999, she also took the OIT training and is now a certified water operator.

In the closeout interview, the clerk reported that she learned a lot from this training. The first two courses helped her understand the finances and general management of utilities. She noted that the last training was particularly helpful. She acquired a better understanding of water operator duties, the parts that are needed to maintain the system, and an appreciation of the testing and water quality reporting requirements. The training also increased her understanding of what the water operators do, so now communication with them is much more effective than in the past.

The mayor also attended the first utility management training, and two city council members attended the later training in financial management and utility organization management. This training helped the council members understand why it is important to monitor revenues and expenditures.

## **Operator Support**

The ANHB grant provided money for operator training. During the course of the project, operators did get on-the-job training from the RMW, as well as study materials from RUBA. The water plant operator took the OIT test in February 1999, but did not pass. At the time of the closeout interview in April 2000, he still had not passed and the city was investigating ways to help him pass the exam, including a request for an oral instead of a written exam. The operator is also getting regular tutoring two hours a day with an adult education teacher to improve his math skills.

Aside from operator training, the city also wanted to make the operator's work environment safer. There were concerns that operators might be exposed to infectious organisms from the wastewater they worked near. The city was not able to thoroughly investigate the situation, but it did order rubber suits for the operators to wear on the job instead of their regular clothes, and it allows operators to take free showers at the washeteria once they are done working.

## **Customer Agreement**

The city wanted to develop a customer use agreement for the new FTTHS, spelling out both city and customer roles and responsibilities. In the closeout interview, the city clerk recalled that a customer use agreement was developed and signed by some of the homeowners. Part of the difficulty in getting all the homeowners to sign the agreement was that design flaws had created so many problems with the system. These problems needed to be ironed out by the contractor before the city and customers could agree on who would be responsible for ongoing maintenance.

## **Customer Satisfaction**

One of the unique aspects of this project was the idea of improving customer satisfaction by conducting a survey. The survey included a request that customers abide by the city's rules for running the washeteria equipment and be responsible for helping repair and maintain the equipment.

City staff started writing this survey but have not completed it. Early on, they learned that other communities conducted similar surveys that generated little interest or response. Few people took the time to even complete the survey. Before conducting a similar survey in Shishmaref, they wanted to find incentives for people to participate.

## **Community Support**

The city clerk reported that some customers have observed things running a lot better. For instance, they noticed the newer haul vehicles, and that fuel was available for purchase at the washeteria. Customers also became more supportive of the new system after the RMW went around to many homes and fixed the problems with the FTTHS.

The city still faces a revenue shortfall in several segments of the water and sanitation program, but it hopes that educating consumers about the costs of operating and maintaining the system will continue to improve community support and collections.

## **Outcomes**

The previous reports for Phase I and most of Phase II summarized the major outcomes of the project:

The City of Shishmaref worked on all of the workplan tasks and fully completed three of the six tasks. The project outcomes include: improved financial management, improved maintenance of the washeteria, improved the water treatment plant, increased collections, and improved relationships among the city and agencies.

At the close of the project, participants emphasized some of the most important outcomes they saw in their community.

- **Improved monitoring of costs and revenues.** The new separate account for water and sanitation allows the city to track expenditures and revenues more precisely, and shows how much it actually costs to operate the system. It also provides the council with better information to make informed decisions. The city is now aware now that expenditures on the system are greater than revenues, and that it either needs to adjust rates or reduce operations to balance their accounts. The city clerk is frustrated by the council's lack of action to change rates or improve collections. However, she is hopeful that further work with the council and community education will encourage people to support the system, pay their fees, and improve collections.
- **Parts and Equipment:** The ANHB grant gave the city money for parts and replacement vehicles for the water and sewer system. Money also went to fix pumps as well as buy a new boiler and a dryer for the washeteria. Shishmaref also purchased a computer and printers to produce financial reports.
- **Operator Support** The project helped the utility managers communicate better with the operators. This communication was especially improved when the city clerk attended water operator training and got a better understanding of what the operators are doing and what parts are needed for the system.

The major delay in the project was getting the new FTTHS operational. Most of the problems were eventually attributed to design problems. With the help of the contractor and the RMW, the community has managed to correct most of these problems so now all but two out of sixteen of the FTTHS units are operational.

**TABLE 23. SUMMARY OF CONTEXT, FACILITIES, AND EXPECTATIONS FOR SHISHMAREF**

<b>Context</b>	<b>Facilities</b>
<p>Shishmaref is a traditional Inupiat village located on Sarichef Island, in the Chukchi Sea. The villagers live a predominately subsistence lifestyle, depending on fish, walrus, seal, and other subsistence foods. There are two forms of government: the City of Shishmaref, a municipal second class city, and the Native Village of Shishmaref, a federally recognized tribe. The city operates the water and sewer facilities.</p> <p>In October 1997 a storm caused severe erosion, washing away an estimated 30 feet of beachfront in front of the village. This erosion caused the evacuation of eleven homes, of which only four could be saved by moving to safer ground.</p> <p>In 1997 the village population was 542. The 1990 median household income was \$15,625.</p>	<p>Water is collected from a surface source, treated and stored in a water tank. Residents haul water from the washeteria to their homes. The city has been on honey bucket haul. In 1996 PHS funded the first phase of a flush tank and haul system in twenty homes and a building retrofit to store haul vehicles. The second and third phases will add all existing homes to the haul system.</p>

Source: Alaska Department of Community and Economic Development, Community Database, and Phase II, Volume 2 ISER report for O&M pilot project.

**TABLE 24. SUMMARY OF IMPLEMENTATION FOR SHISHMAREF**

<b>Task</b>	<b>Plan</b>	<b>Implementation</b>
Partnership Team	The City will form a partnership team with: David Nairne & Assoc., Chuck Eggener & Assoc., the Alaska Native Health Board, the Dept. of Community and Regional Affairs, the city clerk, the city council, the water and sewer operators and the finance director.	DCED representatives; RMW; Norton Sound Health Corporation representative; ANTHC and VSW representatives. As described in more detail in the Phase II report, RUBA reports, and ANHB quarterly reports, RUBA, RMW, LGS, PHS, I.H.S., VSW, ANHB actively participated in the project.
Parts and Supplies	The City will purchase needed replacement parts and new pumps for the water plant.	In the fall of 1996 the operator provided the city clerk with a list of parts to purchase. In the spring of 1997, the RMW assisted with a compilation of a list of critical spare parts for the washeteria and water plant. By the summer of 1998, the operators had ordered spare parts from the list developed by the RMW.
Community Education	The City will work with the community to educate its residents on the operation and maintenance of the water plant and washeteria by posting signs on the proper way of handling equipment and machines in the water plant and the washeteria.	They posted notices in the washeteria about the washer and dryers because a lot of the washers were being overloaded. The project participants said this helped a lot because people were more aware of what was going on. With the new FTHS they didn't do much community education because their own haul operators did not know very much about how to operate the system yet.
Utility management	The City will continue to monitor revenues and costs of running all its sanitation facilities. It will review the established rate structure to identify what revenue will be necessary to ensure the long-term operation of both the water plant and washeteria. The city will deposit funds in a separate bank account. The grant will contribute to funding operator wages.	They have a new separate account that receives all the payments from the washeteria, water and sewer, and honey bucket bins. They still don't have the reserve account for emergency repairs, as they'd like and sometimes they need to draw from the general city account to pay for some of the water and sanitation operating costs. The council now gets much better financial reports about the sanitation system. The council has not yet used the information to make important decisions about how to change the rate structure or how to improve revenue collections.
Operator Training	The city will send its water plant operator and assistant to training to achieve certification. The city will also improve the safety of the working environment for operators.	The water operator is not yet certified. The city clerk did get OIT certified and is now better able to communicate with the operator. The haul operators now have special clothing for their work and can take free showers at the washeteria.

**TABLE 24. SUMMARY OF IMPLEMENTATION FOR SHISHMAREF (CONTINUED)**

Customer Agreement	The city will develop a customer agreement that spells out the responsibilities of the city and the customer for operation and maintenance of the new FTHS	One of the earlier utility managers developed a customer use agreement. Some of the homeowners signed the agreement. There were delays because of design flaws in the new FTHS.
Customer Satisfaction	The city will ask each customer to complete a survey prior to commencement of flush haul service. The survey will include a description of rules the customer agrees to and that they will be responsible for the repair and maintenance of those parts that have been misused.	The survey was not completed because they are looking for ways to ensure more people will fill out the survey.
Budget	<p>The project began September 1, 1996, was granted one extension and was granted a second year of funding starting December 1, 1997. During the second year the city was granted four extensions: the project is due to be completed December 15, 1999. They were granted an additional extension, and the project was due to be completed by March 31, 2000. In the first year grant the city used \$40,000 (100% of the grant award), with a community match of \$39,603. In 1997, the City of Shishmaref applied for a second year of funding (Phase II) and received \$20,000 to continue the workplan tasks described above.</p> <p>In the second year grant (including extensions) the city used 96% of the grant award, with a community match of \$4,045.</p>	