EXECUTIVE SUMMARY
FINAL REPORT ON PHASE III AND THE PROGRAM OVERALL

Background
For five years, the Alaska Native Health Board (ANHB) administered a pilot program—funded by the U.S. Environmental Protection Agency—that made grants to small rural communities to help them improve operation and maintenance of their sanitation facilities. The program had three phases, with the final phase ending in 2000, and altogether it made grants to 35 communities. This was a demonstration project, using a new approach to administering small operations and maintenance (O&M) grants—to try to help small communities move toward long-term solutions to rural O&M problems.

The program gave communities autonomy and flexibility. Rather than imposing its own definitions of problems, requiring completion of very specific tasks, setting strict deadlines, and closely overseeing projects, ANHB instead encouraged communities to take on more responsibility for identifying needs, making plans to address them, and getting the projects done. ANHB offered guidance and support as needed, while encouraging communities to make their own decisions about how to proceed with their projects. This approach was more open and flexible than that of other programs aimed at improving rural sanitation.

ANHB contracted with the Institute of Social and Economic Research at the University of Alaska Anchorage to monitor and evaluate the individual projects and the program overall. This report is the final evaluation for the seven Phase III communities (and the four Phase II communities that extended beyond the deadline for the Phase II evaluation) and for the ANHB approach overall. The report is in two volumes. Volume I provides summary and analysis; Volume II describes individual community projects in detail.

Phase III Evaluation
This report assesses how well individual Phase III projects succeeded and what kinds of activities contributed to success. It looks especially at an innovation of Phase III: mentor communities. The original idea was for the project communities to develop relationships with other communities that had previous experience with O&M pilot projects, or had some other experience that could benefit the new project communities. ANHB hoped the mentor communities could largely substitute for ANHB staff, providing guidance, support, and advice during the course of the project. This mentor arrangement did not work out as originally envisioned, but it did lead to some unforeseen benefits.

Project Success
• The most successful communities completed most or all of the tasks they originally planned, expanded and improved their capacity to operate and maintain facilities, and developed long-run community capacity to continue this operation and maintenance with stable finances and an effective management structure.
Successful projects typically had (1) key persons interested in the outcome of the project, with the initiative to see that project activities were done; (2) ability to work effectively with government and non-government agencies and support groups; and (3) broad public support, with homeowners who helped take care of the sanitation systems and who understood the importance of paying their bills.

Projects with narrower success completed most of their tasks, but it is less certain that they will be able to sustain the operation and maintenance of their sanitation systems over the long run—because of financial problems, organizational problems within the community, or problems with the systems themselves.

Less successful projects lacked the key persons and broad community support they needed to sustain changes over the long term.

Project Activities

- By far the most common and successful activity was the creation of partnership teams. The design of the program encouraged communities to interact with state and federal agencies and other communities to complete their projects. All communities developed, to some extent, alliances outside the community to complete the projects.

- The next most common activity was acquiring parts and supplies. Communities reported that one of the benefits of the project was that it enabled them to make needed repairs and get their water and sewer facilities functioning better. But the long-term effects of buying new parts and equipment depended on other tasks as well. Improving collections, changing financial management, training operators, or developing procurement procedures often supported and complemented the acquisition and installation of parts and supplies.

- Almost all the projects provided for some sort of training: training for operators, utility management training, computer training, bookkeeper training, and other forms of training. The projects were nearly always successful in getting people the training they needed, and that training usually had beneficial long-term effects in all the project communities.

- Five of the seven Phase III communities bought new computers, and they universally praised these new computers. Most important, the computers helped communities keep track of financial accounts. In some communities, this was the first time they had a reliable, systematic listing of revenues and expenditures.

- Many of the pilot O&M projects paid for the time of existing utility managers or allowed communities to hire a utility manager. Utility managers often generated a community focus and attention on utilities that did not exist before. However, the dilemma in many communities is how to pay for the utility manager without the funds the O&M project provided.

- Community education about utility rates and the operation of the utility became much more prevalent in Phase III than it had been in Phase II. Many of the Phase III communities planned some form of education, such as handbooks, manuals, door-to-door contact, community meetings, and notices in newsletters. The success of these
efforts, as well as their effectiveness in creating long-term changes, varied by community.

- Communities were glad to share information, but mentor communities did not substitute for ANHB staff. Mentoring and community exchanges had unanticipated benefits, including joint training and sharing of information. The biggest constraint to mentoring seemed to be that people had so much to do in their own communities. The hope that mentors would assist other villages with their administrative burden (accountability) was not realistic. Participants suggested that focusing on specific tasks, establishing a shorter mentoring period, or adding more structure could make the mentor arrangement work more effectively.

**Assessment of the ANHB Program Approach**

In this final report we also assessed how ANHB's more open and flexible approach to grant administration worked over the entire course of the pilot program.

- The ANHB emphasis on partnership helped communities learn, compare, and develop networks outside the community.

- The ANHB emphasis on autonomy—encouraging communities to make their own decisions—may have contributed to several noticeable changes in the communities. Some project participants reported developing pride in their work and their sanitation systems. They took greater responsibility and made more effort to maintain the systems. Other communities emphasized that the council, city staff, and homeowners understood the water and sanitation system better and were more likely to look within the community—rather than outside—for solutions.

- ANHB’s flexibility in revising work plan activities, timelines, and budgets significantly helped communities complete their O&M projects and improve their long-term capacity for O&M.

- Supportive staff and site visits are essential to effective program administration serving rural communities. After money, community administrators said the most valuable component of the ANHB demonstration grant program was staff support to the project communities.

- Learning was the most important program outcome for communities, administrators, and researchers alike.

**What Next?**

We know there is ample room for improvement in the operation, maintenance, administration, and finance of sanitation systems in rural Alaska. Our evaluation can contribute to improvements in a number of ways.

Our evaluation identifies problems in the individual project communities, sheds light on the dynamics of village administration and leadership, and—most important—shows how communities themselves can take an important role in solving their unique problems.
While rural communities share some similar problems, improving operations and maintenance of water and sewer systems in Alaska's villages will require many small, individual solutions rather than a single "one-size-fits-all" solution.

Communities that participated in earlier phases have already reported using our evaluations of their own projects. The reports have helped them see how they got funding for their utilities and how they spent it; whether they accomplished what they hoped; and how they could do better in the future. This written record is especially useful in communities where there was a great deal of turnover during the course of the project. (Agencies will find the written record useful for the same reason: agency personnel also change.)

ANHB also plans to produce a "yearbook" compiling all the ideas and activities from all the demonstration grant communities—and distribute the book so all communities can learn not only from what they did themselves but from what other communities did.

Policymakers can also benefit from the wealth of information in our series of evaluation reports. Earlier reports have been widely distributed among federal and state agencies with responsibilities for rural sanitation. EPA, ANHB, and ISER have also presented evaluation findings to various forums, such as the Governor's Council on Rural Sanitation. We have also learned that various state and federal agency personnel find the reports very useful for illustrating the realities of implementing projects in village Alaska.
Acknowledgments

The authors of this report are Sharman Haley, Eric Larson, Rosyland Frazier, and Patricia DeRoche at the Institute of Social and Economic Research. Nina Miller, project manager at the Alaska Native Health Board, and Joe Sarcone, rural sanitation coordinator at EPA’s Alaska Regional Office, were also invaluable members of the team, providing all the field notes, project documents, and implementation information for this report. We gratefully acknowledge the cooperation of personnel in the demonstration communities, as well as review and consultation by members of the project's coordinating committee.
When I was going to school, they always focused me on product: we’ve got to build this, we’ve got to figure out what we’ve got to do to get there. And I've always resisted process: process is the antitheses of the product, it just gets in the way. But years ago [someone I respected] told me don't focus on product . . . overlay your values on the process and then the product will exceed your expectations. And that's the kind of thing I think we're talking about with [the ANHB O&M pilot demonstration project].

Simon Mawson
June 2000
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VOLUME II. COMMUNITY REPORTS (bound separately)

Phase III Communities

Gulkana
Hughes
Kaltag
Kobuk
Kwethluk
Nightmute
Wales

Phase II Communities with extended projects

Deering
Nunapitchuk
Saint Michael
Shishmaref
Acronyms

ANHB – Alaska Native Health Board

ANTHC – Alaska Native Tribal Health Consortium

AVCP – Association of Village Council Presidents

EPA – U.S. Environmental Protection Agency

IRA Council – Tribal government organized under the Indian Reorganization Act of 1934.

ISER – Institute of Social and Economic Research

LGS – Local Government Specialist (Department of Community and Economic Development)

OIT – Operator in Training

O&M – Operations and maintenance

PHS – U.S. Public Health Service (IHS - Indian Health Service) formerly provided facility construction and other assistance to villages for water and sanitation. These functions have largely been assumed by the Alaska Native Tribal Health Consortium (ANTHC).

RMW – Remote Maintenance Worker; RMWs are circuit-riding employees of the regional health corporations who provide technical assistance and training to water and sanitation operators in their region; the RMW program is coordinated statewide through the Alaska Department of Environmental Conservation.

RUBA – Rural Utility Business Advisors (Alaska Department of Community and Economic Development) provide administrative training and assistance to clerks, managers, and boards or councils responsible for water and sanitation utility management.

TCC/OEH – Tanana Chiefs Conference, Office of Environmental Health

VSW – Village Safe Water (Alaska Department of Environmental Conservation)
Chapter I. Introduction

The Alaska Native Health Board (ANHB) has a multi-year project funded by the U.S. Environmental Protection Agency, Office of Wastewater Management, to administer sanitation facilities operations and maintenance (O&M) demonstration grants in rural Alaska. Nine projects were funded in the first wave, beginning in April 1996. Nineteen projects, including two carryovers from the first wave, were funded in the second wave, which started in April 1997. The third and last wave, with seven projects, started in April 1998.

The Institute of Social and Economic Research (ISER) at the University of Alaska Anchorage is monitoring and evaluating the individual sanitation facility O&M projects and the program overall. EPA initially funded this work; it is now funded by ANHB. The research design and the underlying program design differ somewhat across the three phases. The innovation in the Phase III design was the addition of mentor communities to assist project communities. This report comprises the final evaluation for the seven Phase III community projects and four Phase II projects that extended beyond the deadline for the Phase II report.

Project Communities

In 1998, 27 rural communities prepared grant applications for Phase III project funding. The project’s coordinating committee evaluated applications on whether they were interesting, innovative and well-thought-out; and whether they had the potential to improve the capacity of the community to manage, operate and maintain sanitation systems over the long term. Activities that scored well in the committee’s evaluation included rate review and fee setting, new computer hardware and software, improvements in record keeping, establishing a utility board, and developing ordinances and use agreements. The committee recommended a mix of applications taking into account geographic distribution, population, and type of sanitation system. ANHB selected seven applications for Phase III funding.

Map 1 shows the 1999 sanitation status of 191 Alaska villages, highlighting the seven selected for Phase III O&M projects and the four carryovers from Phase II. The communities and their current water and sewage technologies are further described in Table 1. The communities range in population from 80 to 714. Numbers of households served vary from 12 to 89. The average household size varies from 3 to 8 persons.

The communities also differ in their ability to pay for utility services. The 1990 median household income in the eleven communities ranged from $15,000 to $28,600. In one third of the study communities, a quarter or more of the households had 1990 incomes of less than $10,000. Table 2 shows the distribution of the eleven communities by sewage technology and by percentage of households with 1990 incomes of less than $10,000.
Map
Back map
### TABLE 1. STUDY COMMUNITIES

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</thead>
<tbody>
<tr>
<td>Gulkana</td>
<td>Phase III</td>
<td>Copper River Native Association Tribe</td>
<td>Tribe</td>
<td>563</td>
<td>2.96</td>
<td>$28,611</td>
<td>26%</td>
<td>Community Water System (circulating) (33); Washeteria/watering point</td>
<td>Gravity Main Sewer (No Lift Station) (31); Septic Tank (2)</td>
</tr>
<tr>
<td>Hughes</td>
<td></td>
<td>Tanana Chiefs Conference City -</td>
<td>-</td>
<td>80</td>
<td>3.64</td>
<td>$15,833</td>
<td>7%</td>
<td>Community Water System (circulating) (12); Washeteria/watering point</td>
<td>Outhouse/Pit Privies (29)</td>
</tr>
<tr>
<td>Kaltag</td>
<td></td>
<td>Tanana Chiefs Conference City City</td>
<td>254</td>
<td>4.03</td>
<td>15,500</td>
<td>37%</td>
<td>Community Water System (circulating) (66); Washeteria/watering point</td>
<td>Gravity Main Sewer (No Lift Station) (66)</td>
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<td>Kobuk</td>
<td></td>
<td>Maniilaq Assoc. City City</td>
<td>94</td>
<td>5.22</td>
<td>$20,625</td>
<td>25%</td>
<td>Washeteria/watering point</td>
<td>Honey Bucket (self haul); Outhouses/Pit Privies</td>
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<tr>
<td>Kwethluk</td>
<td></td>
<td>Yukon-Kuskokwim Health Corp. City; School</td>
<td>714</td>
<td>5.62</td>
<td>$16,000</td>
<td>23%</td>
<td>*Traditional sources (131); Washeteria/watering point</td>
<td>Community Operated Honey Bucket haul (30); Outhouses/Pit Privies (85)</td>
<td></td>
</tr>
<tr>
<td>Nightmute</td>
<td></td>
<td>Yukon-Kuskokwim Health Corp. School City</td>
<td>230</td>
<td>7.93</td>
<td>$17,813</td>
<td>21%</td>
<td>Flush Tank and Haul (13 to begin, 41 at end); Traditional sources</td>
<td>Flush Tank and Haul (13 to begin, 41 at end); honey bucket</td>
<td></td>
</tr>
<tr>
<td>Wales</td>
<td></td>
<td>Norton Sound Health Corp. City City</td>
<td>170</td>
<td>3.47</td>
<td>$15,000</td>
<td>24%</td>
<td>*Traditional sources (54); Community Water System (non-circulating) (48)</td>
<td>Community Operated Honey Bucket haul (48)</td>
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<tr>
<td>Phase II Extended</td>
<td></td>
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<tr>
<td>Deering</td>
<td></td>
<td>Maniilaq</td>
<td>City City</td>
<td>158</td>
<td>3.57</td>
<td>$15,208</td>
<td>10%</td>
<td>watering point (44)</td>
<td>honey bucket (44)</td>
</tr>
<tr>
<td>Nunapitchuk</td>
<td></td>
<td>Yukon-Kuskokwim Health Corp. City; Village Council</td>
<td>489</td>
<td>4.34</td>
<td>$17,083</td>
<td>19%</td>
<td>Community Water System (non-circulating) (20); Washeteria/watering point</td>
<td>flush haul (20); Community operated honey bucket haul (78)</td>
<td></td>
</tr>
<tr>
<td>Saint Michael</td>
<td></td>
<td>Norton Sound Health Corp. City City</td>
<td>341</td>
<td>4.28</td>
<td>$23,194</td>
<td>18%</td>
<td>Community Water System (non-circulating) (79); Watering point (36); Haul tank (18)</td>
<td>Vacuum sewer (0 at start, 89 at end); Community operated honey bucket haul (89 at start)</td>
<td></td>
</tr>
<tr>
<td>Shishmaref</td>
<td></td>
<td>Norton Sound Health Corp. City City</td>
<td>542</td>
<td>3.83</td>
<td>$15,625</td>
<td>30%</td>
<td>Watering point; flush tank haul (20)</td>
<td>honey bucket (1), flush tank haul (20)</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td></td>
<td></td>
<td></td>
<td>330</td>
<td>4.45</td>
<td>$18,227</td>
<td>22%</td>
<td>*Traditional water sources include</td>
<td>tundra ponds, streams, melting ice</td>
</tr>
</tbody>
</table>

**Source:** Alaska Department of Community and Economic Development community database and project applications
**TABLE 2. STUDY COMMUNITIES BY INCOME AND SEWAGE TECHNOLOGY**

<table>
<thead>
<tr>
<th>Percent of Households Below $10,000 Income</th>
<th>Sewage System</th>
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<tbody>
<tr>
<td></td>
<td>Piped</td>
<td>Septic Tank or Flush Haul</td>
<td>Honey Bucket or Pit Latrine</td>
<td></td>
</tr>
<tr>
<td>Less than 15 percent</td>
<td></td>
<td></td>
<td></td>
<td>Hughes</td>
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<td></td>
<td></td>
<td></td>
<td>Deering</td>
</tr>
<tr>
<td>15 – 24 percent</td>
<td>Nightmute</td>
<td></td>
<td></td>
<td>Kwethluk</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Wales</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nunapitchuk</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nunapitchuk (Saint Michael)</td>
</tr>
<tr>
<td>25 percent or more</td>
<td>Gulkana</td>
<td></td>
<td></td>
<td>Kobuk</td>
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<tr>
<td></td>
<td>Kaltag</td>
<td></td>
<td></td>
<td>Shishmaref</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shishmaref</td>
</tr>
</tbody>
</table>

Note: Several communities have more than one system. A community name in parentheses under a system type indicates that fewer households use that system.

**Program Implementation**

During May, April, and June of 1998 ANHB staff members visited the Phase III demonstration communities and worked with them to prepare partnership agreements. Before each visit, the ANHB staffers coordinated with the various federal, state, and regional agency staff (remote maintenance workers, public health service engineers, and rural business advisors) who provide technical assistance to each community for water and sanitation management, operations, and maintenance. Over two or three days, ANHB staff talked with community personnel to understand community needs, assess options, and facilitate planning sessions to prepare draft work plans (scope of work) and budgets.

Drafting agreements, work plans, and getting the projects started went more smoothly in Phase III than in prior rounds. All of the communities had completed work plans and budgets and signed O&M Pilot Project Partnership Agreements with ANHB and were ready to start their projects by September 1, 1998. Though they were originally planned as one-year projects, all of them received extensions into the spring of 2000. Most were closed out March 31, 2000. No extensions were granted beyond May 31, 2000, because it was the final year of the demonstration grant program.

Under the terms of the partnership agreements with ANHB, the communities were obligated to submit quarterly reports of their activities. There was also extensive follow-up communication and problem solving by telephone with ANHB. All but one of the communities received second site visits from ANHB staff during the summer of 1999 or Spring of 2000.
The four Phase II communities discussed in this report started their projects in the fall of 1997. They all experienced delays, and received extensions into the fall of 1999 and beyond. They were all finally closed out March 31, 2000.1

The project start and end dates, award amounts, percentage of awards actually claimed, and community matches for the seven Phase III and four Phase II extended communities are shown in Table 3.

<table>
<thead>
<tr>
<th>Community</th>
<th>Project Start Date</th>
<th>Project End Date</th>
<th>Total Award</th>
<th>Percent Claimed as of 7/20/00</th>
<th>Community Match*</th>
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<tr>
<td><strong>Phase III</strong></td>
<td></td>
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<tr>
<td>Gulkana</td>
<td>9/1/98</td>
<td>3/31/00</td>
<td>$34,000</td>
<td>75%</td>
<td>$1,900</td>
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<td>Kaltag</td>
<td>7/1/98</td>
<td>3/31/00</td>
<td>$40,000</td>
<td>88%</td>
<td>$13,141</td>
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<tr>
<td>Kobuk</td>
<td>7/1/98</td>
<td>5/31/00</td>
<td>$40,000</td>
<td>75%</td>
<td>$39,668</td>
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<tr>
<td>Kwethluk</td>
<td>7/1/98</td>
<td>4/30/00</td>
<td>$40,000</td>
<td>100%</td>
<td>$8,588</td>
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<tr>
<td>Nightmute</td>
<td>8/1/98</td>
<td>3/31/00</td>
<td>$48,430</td>
<td>100%</td>
<td>$72,621</td>
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<tr>
<td>Wales</td>
<td>8/1/98</td>
<td>1/31/00</td>
<td>$40,000</td>
<td>50%</td>
<td>$0</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$260,680</strong></td>
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<td><strong>$164,584</strong></td>
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<td>Deering</td>
<td>10/1/97</td>
<td>3/31/00</td>
<td>$34,700</td>
<td>75%</td>
<td>$10,256</td>
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<td>Nunapitchuk</td>
<td>10/1/97</td>
<td>9/30/99</td>
<td>$40,000</td>
<td>100%</td>
<td>$26,392</td>
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<tr>
<td>Shishmaref (2nd yr)</td>
<td>12/1/97</td>
<td>3/31/00</td>
<td>$20,000</td>
<td>96%</td>
<td>$4,045</td>
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<td>St. Michael</td>
<td>11/1/97</td>
<td>3/31/00</td>
<td>$38,044</td>
<td>100%</td>
<td>$8,112</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$132,744</strong></td>
<td></td>
<td><strong>$48,805</strong></td>
</tr>
</tbody>
</table>

*Any non-federal services or funds the community used to manage, operate, and maintain the sewer and water system during the project year. Documentation was supplied by each community.

Mentorships

One of the innovations for Phase III was the addition of mentor communities to assist project communities. The idea was for the communities to develop a relationship with another community that had previous experience with an O&M pilot project or had some experience that could benefit the community. The hope was that mentors would largely substitute for ANHB staff, providing guidance, support and advice during the course of the project. The original idea was that mentors would visit communities, help them structure work plans and budgets, follow up with phone calls, assist with quarterly reporting and self evaluation, and offer technical expertise. For these services they would have signed agreements with and been paid by ANHB.

The Phase III focus on partnering with another more experienced community was included in the application information, and was discussed with each successful applicant when they were notified of selection. ANHB staff shared ideas of what might happen in a mentoring situation and possible ways to go about selecting a mentor. They also consulted with RMWs and others to identify and suggest good candidates. But it was up to the community to choose a

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1 Since Deering never completed the paperwork for its extension, officially the project expired March 31, 1999.
mentor and initiate contact. If the chosen mentor agreed, ANHB followed up with a draft Partner “Mentor” Community Agreement including a scope of work.

Five of the seven project communities lined up mentor communities to work with them. Of these, two—Gulkana/Copper River Native Association and Nightmute/Napaskiak—had formal agreements with ANHB and were compensated. Three communities had active but informal mentoring relationships. Kobuk’s mentor in Noorvik was happy to help but did not want the administrative burden of formalizing a contract or of making travel arrangements. Hughes’ mentor, Tanana, was too busy with its own issues to commit to a high level of involvement, but was pleased to attend joint training and share information as peers. Hughes received additional funding from the mentor budget for that joint training in Tanana. Kaltag and Nulato also had an informal mentor relationship.

Two project communities had no mentors. Kwethluk participants deferred on getting a mentor until after they had conferred management authority to the new utilities commission, and this did not happen until the winter of 1999-2000. Though the record at the beginning of the project shows discussions with Wales’ staff about possible mentors, at the end the project the mayor said she was unaware of the mentor aspect of the program.
Chapter II. Evaluation Methodology

Multiple Case Study Design

For the broad project evaluation, we use a multiple case study research design. This is the preferred design for three reasons: (1) our primary research questions are exploratory and explanatory; (2) the phenomena we are studying are complex and context dependent; and (3) we have many more variables of interest than we have data points. We use similarities and systematic differences across case study communities to strengthen our analytic conclusions.

Research Questions

In this phase of the report we did not look as directly at administrative and finance issues as we did in the earlier phases. (See the reports from phases I and II.) In Phase III we concentrated on looking at project mentorships. Chapters III, IV, and V address research questions qualitatively (as noted). Volume II also addresses the within-case research questions.

The goals of the ANHB demonstration grant program are to:

- protect the public health of rural Alaskans through effective water and sanitation facility operation and maintenance
- protect government and community investments in sanitation facilities
- build community capacity for operating and maintaining sanitation facilities

For all three goals, improving operations and maintenance is the key outcome we use to measure program success. As a secondary measure of community capacity for O&M, we also evaluate improvements in financial self-sufficiency.

The two general research questions we address for all study communities are:

- Has the demonstration community, as a result of this program, improved its operations and preventive maintenance?
- Has the demonstration community, as a result of this program, become more financially self-sufficient in operating and maintaining its sanitation systems?

These general questions can be broken down into many subsidiary questions, as shown in Table 4. We use all eleven community project evaluations from Volume II of this report, plus reference to the Phase I and Phase II reports, to address some larger research questions:

- What interventions work to improve O&M?
- Does community initiative and control contribute to program success?
- Can these models be extended to other rural communities throughout Alaska?
- Was the O&M pilot program successful in moving us toward long-term solutions to rural O&M problems?

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## TABLE 4. RESEARCH QUESTIONS

<table>
<thead>
<tr>
<th>I. Within-case research questions (which are primarily addressed in Volume II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Has the demonstration community, as a result of this program, improved its operations and preventive maintenance?</td>
</tr>
<tr>
<td>1. Did the O&amp;M indicators change over the period?</td>
</tr>
<tr>
<td>a. Was there a change in operator hours or in the percentage of scheduled maintenance activities completed?</td>
</tr>
<tr>
<td>b. Was there a change in policies, procedures, or planning in support of O&amp;M?</td>
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<tr>
<td>c. Was there a change in operator skills or resources for O&amp;M tasks?</td>
</tr>
<tr>
<td>d. Was there a change in operator attitude or perceptions of community support?</td>
</tr>
<tr>
<td>e. Was there a change in the physical condition of the facilities?</td>
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<tr>
<td>2. Did the program interventions cause the change?</td>
</tr>
<tr>
<td>3. What about the interventions caused the change: the intervention itself, or the implementation process?</td>
</tr>
<tr>
<td>4. How did the implementation work?</td>
</tr>
<tr>
<td>5. What were the important factors in determining program outcomes: key individuals? community organization? community composition or social structures? outside assistance or catalyst? program philosophy of community empowerment?</td>
</tr>
<tr>
<td>B. Has the demonstration community, as a result of this program, become more financially self-sufficient in operating and maintaining its water and sewer systems?</td>
</tr>
<tr>
<td>1. Did the financial indicators change over the period?</td>
</tr>
<tr>
<td>a. Have collections increased?</td>
</tr>
<tr>
<td>b. Have savings been realized?</td>
</tr>
<tr>
<td>c. Was there a change in utility finance policies, procedures or planning?</td>
</tr>
<tr>
<td>d. Was there a change in financial management skills or resources?</td>
</tr>
<tr>
<td>2. Did the program interventions cause the change?</td>
</tr>
<tr>
<td>3. What about the interventions caused the change: the intervention itself, or the implementation process?</td>
</tr>
<tr>
<td>4. How did the implementation work?</td>
</tr>
<tr>
<td>5. What were the important factors in determining program outcomes?</td>
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<tr>
<td>C. How might these changes improve public health, protect facility investments and build community capacity?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>II. Cross-case research questions (see Chapters III and IV)</th>
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</thead>
<tbody>
<tr>
<td>A. What interventions work to improve O&amp;M?</td>
</tr>
<tr>
<td>1. Were the successful interventions successful across different types of communities?</td>
</tr>
<tr>
<td>B. Does community initiative and control contribute to program success?</td>
</tr>
<tr>
<td>C. Can these findings be generalized?</td>
</tr>
<tr>
<td>D. Did the O&amp;M pilot program move us in the direction of long-term solutions to rural O&amp;M problems?</td>
</tr>
</tbody>
</table>
Data Collection

Successful operation and maintenance of rural sanitation facilities can be broken into four dimensions: operations, management, finance, and community support (Figure 1). Each of these in turn can be broken into components. To measure improvements in O&M, we attempted to collect information on each of the ten O&M program components shown in Figure 1. We augmented these O&M indicators with information on community context and project implementation to address the other research questions in Table 4. We collected qualitative and quantitative information from the eleven communities and secondary sources:

- **Background information**: community profile, demographics, history and description of water and sanitation systems
- **Project implementation**: plan, objectives, and description of implementation process, problems, and successes
- **Operations**: operator training, turnover, hours and pay, O&M activities, O&M plans and procedures, resources and equipment
- **Management**: manager training, hours and pay, administrative tools and systems, planning and analysis activities
- **Finance**: fees, billings, collections, expenses, record keeping, reporting
- **Community support**: formal policies, community education, and community attitudes

**Figure 1. Program Components for Operation and Maintenance of Rural Sanitation**

- Facilities and Supplies
- Operator Time and Skills
- Manager Time and Skills
- Administrative Tools and Systems
- Plans and Procedures
- Analysis and Planning
- Expenses
- Revenues
- Community Residents
- Local Government
- Water and Sanitation Operation and Maintenance
Table 5 identifies the sources for each of the data clusters in Figure 1. The sources are described further below.

**Community Self-Evaluation and Community Records**

Our data collection design for Phase III was quite different from the prior two phases. In keeping with the philosophy of the O&M grant program, we attempted to decentralize data collection and learning through community self-evaluation. The 1998 project agreements stated:

- The community agrees to submit the pre project evaluation questionnaire within thirty (30) days of the project period start date. The community agrees to submit the post project evaluation questionnaire to ANHB within thirty (30) days of the project period end date… ANHB shall pay the community $200 for submittal of the completed pre-evaluation questionnaire and $200 for the submittal of the completed post evaluation questionnaire within (15) days of the receipt of the evaluation questionnaires.

The pre-project self-evaluation questionnaire walked communities through vision, goals, expected outcomes and measures for their project success, and baseline data. (See Appendix A.) Due to the project extensions, tight timeline for completing the data record, and priorities and preferences of the administrators themselves, the post-project evaluation questionnaires were conducted as telephone interviews in May 2000. The post-project self-evaluation interview referenced their prior statements of goals and measures and asked whether the project had turned out as expected. Follow-up questions detailed changes in specific measures, probed what aspects of the project caused the changes, and asked how the changes might improve public health, protect facility investments and build community capacity. (See Appendix B.)

Five communities completed and submitted pre-project self-evaluation questionnaires and the post-evaluation interview. A sixth community without a pre-project self-evaluation questionnaire completed a modified version of the post-project self-evaluation interview.

These instruments were surprisingly successful. Overall it appears that community leaders were thoughtfully engaged, reflecting on the purposes and results of their projects. As might be expected, they focused on the positive and were not very self-critical. Still, this exercise in strategic planning and self evaluation could only augment the effectiveness of the program itself, building community capacity for effective utility management.

**Mentor Interviews**

Phase III offered another unique source of evaluation data: the observations of the mentors. The mentor interviews described the mentoring relationship and asked whether the mentoring, or the grant program, had helped make long term improvements in O&M. Follow-up questions asked about changes in specific indicators. (See Appendix C.) All five mentors completed telephone interviews averaging two hours each.

**Field Notes, Phone Logs, and Project Documents**

The ANHB staff members who visited each of the communities are key informants in this study. Their field notes are a primary source of information describing project implementation in each community. With the research questions in mind, the staffers were asked to record their
observations and interpretations during their trips to negotiate the partnership agreements, as well as during follow-up contacts throughout the project. Phone logs project staff kept are valuable sources of information on project implementation. Project documents such as the community interest form, the project application, the cooperative agreement, and quarterly reports are also primary data sources.

**State Program Records**

As in prior phases, RUBA quarterly reports were extremely valuable information sources on utility management in the project communities. The Rural Utility Business Advisor (RUBA) program in the Alaska Department of Community and Economic Development offers technical assistance and training for rural communities about the business and financial administration of their utilities. The RUBA advisors are assessing the budgeting, record keeping, and accounting practices in most of the pilot communities, as well as the proficiency of community personnel. Their reports supplement our data on the financial operations of communities and their utilities and in particular the unique training needs of each community.

The Department of Community and Economic Development also maintains an online Alaska Community Database. It includes descriptions of communities and their facilities, data from the U.S. census, and information from other government sources on community economies, employment, schools, businesses, municipal finances, rural grants, and ANCSA land status.

**Overall Evaluation Interviews**

In addition to the above efforts to document project outcomes, we conducted telephone interviews with all community project managers about their experiences with the ANHB grant program. Questions addressed whether and how the program helped them with long-term O&M and how ANHB and other agencies could better serve them. The interviews were conducted in May 2000. A copy of the overall evaluation questionnaire appears in Appendix D.

**ANHB Staff and Coordinating Committee Focus Group**

The ANHB O&M project was on-going for six years, all told. The program implementation underwent steady evolution as managers, advisors and researchers assimilated their experiences with the program. To pass on some of the accumulated learning and self evaluation, we conducted a focus group in May 2000. Participants included ANHB staff and long term members of the coordinating committee. The discussion guide and a list of participants appear in Appendix E. A summary of the discussion appears in Chapter IV.

**Data Analysis**

The numerous sources listed above provide a rich variety of perspectives, observations, ideas, and evaluations of what happened in the communities during the pilot O&M projects. The information comes in many formats and from many people. We used formal methods of qualitative research to analyze it. We converted the data to electronic text and used software specifically designed for this type of analysis.

Qualitative analysis draws on the many detailed descriptions and different perspectives of what actually happened in the communities to synthesize analytic conclusions grounded in the data. Qualitative methods preserve much of the rich narrative and contextual detail available in the data record, providing a story about process (causality) as well as description of complex,
hard to categorize outcomes. Qualitative, case study methods provide greater analytic insight where the primary research questions are exploratory and explanatory, the phenomena of interest are complex and context dependent, and the number of observations for each variable is low.

The first step in our analysis was to convert the written record into electronic format. We compiled the “hard-copy” data collected for each community in three-ring binders. This “hard copy” data included in particular RUBA quarterly reports, communities’ original applications, final work plans, pre-project self-evaluations, quarterly reports submitted to ANHB, ANHB phone logs, and all of the correspondence that ANHB collected over the course of the project for each community. Two analysts read through collected reports, notes, logs, and other hard copy and key entered substantial portions of the documents into electronic files.

ANHB field notes and close-out interviews were recorded and transcribed into electronic files. The ISER post-project self-evaluation interviews and the overall evaluation interviews were key entered verbatim into Excel spreadsheets. (The focus group with ANHB staff and coordinating committee members was also recorded and transcribed, but analyzed separately.)

The second step in our analysis was importing the files into a database called “NUD*IST.” This software is specifically designed for qualitative analysis of large amounts of text. It provides a convenient way to organize, sort, categorize, and rearrange text once it is in the database, and a powerful way to search through large amounts of text for ideas and themes.

We queried the data in three ways. First we sorted all the data for a given community by date, to create a timeline of what happened in each community. Second, we searched for particular themes within each community. The software was invaluable for broad searches across all sources to learn about particular issues in a community – such as operator training, user agreements, or honey bucket systems. Once we collected all the text on particular themes or ideas, we read and analyzed the different perspectives and evaluations. Having all these in one place allowed us to find a consensus among different participants. As our analysis suggested other areas of inquiry, we were able to quickly search the database for corroborating evidence.

After we had analyzed the database for each community, we used the qualitative analysis software to search across communities for common themes. Collecting the information about particular themes in one place let us analyze and consider the common ideas that spanned across all projects and communities. This report distills our qualitative analysis.

Our method of analysis had several advantages:

• Using computer software enabled us to include much more of the written record because it was easier to organize and analyze large amounts of text.

• Qualitative analysis attempts to look at the text from many different perspectives. Instead of assuming that a particular set of categories or indicators will adequately describe the experiences of all communities, qualitative analysis is better equipped to handle exceptions, variations, and unique circumstances in the data.

• Having the text organized in electronic format allowed us to stay “close” to the text. We could use direct quotes and easily check the original meaning and intent of authors and interview respondents. This was especially important when opinions varied or there was confusion about particular outcomes. This type of analysis lets those closest to the project speak about their own experience.
• The original words used by the authors of reports or by the respondents in interviews were directly available to us in the analysis. It was far easier to keep track of who said what and when. In addition, the observations of project participants and representatives from support agencies could be easily incorporated into the final report.
## TABLE 5. DATA SOURCES

<table>
<thead>
<tr>
<th>Data</th>
<th>Community Self-evaluation</th>
<th>Project Docs, Field Notes &amp; Phone Logs</th>
<th>Mentor Interview</th>
<th>RUBA Reports</th>
<th>Overall Evaluation Interview</th>
<th>Community Data Base</th>
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</thead>
<tbody>
<tr>
<td><strong>Background Information</strong></td>
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<td>Record keeping and reporting</td>
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<td>Revenues and expenses</td>
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Chapter III. Phase III Project Evaluation

Volume II describes individually and in detail the project plans, implementation, and outcomes for the seven Phase III project communities and the four Phase II projects that were extended into the fall of 1999 and spring of 2000. This chapter provides cross-case analysis, synthesizing observations, and themes across all eleven communities.

In the first part we look across communities to see what common characteristics of communities contributed to success. We compare the outcomes across communities to see which did and did not complete work plan tasks and achieve long-term changes. This comparison of outcomes gives us a way to roughly classify projects as successful or unsuccessful. We describe in brief what happened in each of these categories of communities to contrast the differences in successful and unsuccessful projects. At this stage, we are particularly interested in the “context” in which the project was implemented, to see if existing conditions in communities shaped success. This sort of perspective helps identify the types of communities that are more able and likely to make long-term improvements in sanitation operation and maintenance, independent of the particular types of interventions considered.

In the second section we investigate whether particular types of project tasks or activities were systematically more successful than others activities across all communities. We look at partnership teams, operator and management training, community education, and other types of activities to identify those that were more consistently successful than others, independent of the community involved.

In the final section of this chapter we examine the success of a new approach introduced in Phase III—having other communities "mentor" the project communities. ANHB hoped the mentor communities could largely substitute for ANHB staff, providing guidance, support, and advice during the course of the project.

Our evaluations throughout are based on the rich detail and descriptions of community experiences found in Volume II.

Comparing Project Success Across Communities

To evaluate the effectiveness of the O&M pilot project, we take a look across all the communities to compare and contrast their experiences. The varied experiences of the communities help us learn what did and did not work in the program. As we look across communities, we are particularly interested in the “context” in which the project was implemented, to see if there are existing conditions that shaped success in communities.

To learn what characteristics were common to successful communities, we first categorized communities by success. We described communities as “successful” if their projects had significant long-term effects and if they were able to develop the capacity to continue O&M after the pilot project ended. After the communities were categorized, we looked for common themes among successful communities and contrasted them with the unsuccessful communities.

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3 This section addresses research questions, “What were the important factors in determining program outcome?” and indirectly addresses "Does community initiative and control contribute to program success?" See Table 4, Chapter II.
Most Successful Communities

The most successful communities completed most or all of the tasks they originally planned, expanded and improved their capacity to operate and maintain facilities, and developed long-run community capacity to continue this operation and maintenance with stable finances and an effective management structure. These successful communities shared most of the following characteristics.

- **Key Persons:** Usually there were one or more key persons who were actively interested in the outcome of the project and took the initiative to make sure the activities of the project were carried out. Without these individual persons, the projects would likely not have been completed.

- **Partnership Support:** These communities also demonstrate ongoing ability to work effectively with government and non-government agencies and support groups. The representatives from RMW, RUBA, IHS, PHS, ANTHC, and others who work in the communities were often cited as crucial contributors to the successful projects.

- **Community Support:** The initiative of key persons kept the projects going. But in most of the successful communities, broad public support was also an important ingredient. Homeowners assisted with operations and maintenance and helped make the facility financial viable by paying their fees. City or tribal governments actively supported the projects. More broadly, the community was usually interested and took an active role in ongoing sanitation facility improvements.

These characteristics of successful communities are similar to those identified in the Phase II report. The report concluded, “Measured by the broad program goals of building long-term community capacity for effective O&M, the four most successful projects were in Shaktoolik, Tanana, Unalakleet, and Shishmaref. What these communities have in common is leadership, commitment, and a broad base of support.” The successful communities that exhibited these same characteristics during Phase III—and during the Phase II extensions—are Hughes, Nunapitchuk, Shishmaref, Kobuk, and Kaltag. In this section we’ll look more closely at how the community characteristics contributed to success.

**Hughes**

In the long term, Hughes wants to move toward a three-phase water, sewer, and solid waste project. The first phase would be a new solid waste site; the second phase, water and sewer connections to older homes; and the third phase would bring water and sewer to the rest of the community. Community leaders hoped the pilot O&M project would help them work toward this three-phase goal by improving their existing water and sanitation facility. To do this, they wanted their water plant to be brought up to good running condition by getting new parts and improving maintenance. They wanted to improve financial management, train their operators, utility manager, and clerk. They also wanted to educate the community residents about the water and sewer system, washeteria operation, and the importance of user fees to utility operation.
Hughes' Implementation

This highly successful project achieved all it set out to do. The community purchased a new computer, the utility clerk went through training to operate it, and the new computer system is helping improve billing and collecting. Both of Hughes' water plant operators are now certified and the community has a preventive maintenance plan. It got extra spare parts and developed an inventory. In addition, village administrators had a couple of community meetings and let people know what they are doing.

The only stumbling block during the project was creating a relationship with the mentor, Too'gha, Inc., the utility operator for Tanana. There was some initial confusion about the role of the mentor community and long delays in setting up the relationship. The communities eventually set up a join training session from which both communities benefited.

Hughes' Outcomes

Those who participated in the project felt it worked out well for the community and identified several particularly important outcomes for Hughes:

- A good system set up for billing and records. Administrators said they learned that a better collections policy, an up-to-date billing system, and community education for users help to stabilize the utility financially.

- Education about user fees. Everyone now understands the importance of user fees. The village increased rates and collections are up in terms of amount and number of households paying. It 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 Hughes is going to make it through the year on budget.

- Joint training with Tanana. Council members were using what they learned at council meetings; their training in city administration helped them run better meetings and manage the city better. These improvements in city administration are likely to create positive repercussions far beyond operation and maintenance of the utility.

- Financial reports produced by the new computer system. Council members said these reports help them make better informed decisions.

- Better training and certification for three operators, enabling Hughes to maintain the plant on its own. “The key to success is to keep operators active and keep them trained. Make sure that operators understand their responsibilities.”

Contributions to Success in Hughes

Several factors in the community contributed to the success of the project, including key persons from both inside and outside the community and broad community support both from the council and from homeowners who paid their bills.

The utility manager went through extensive training in utility management and computer operation 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 clear from the record that she was crucial to the success of this project. She received an award from TCC/OEH as 1998 Utility Manager of the Year.
The community actively worked with outside agencies. Those who participated in the project noted that the RMW was also very important to the success of the project. He provided assistance for water plant operators to keep plants going and to do preventive maintenance. Also working extensively with the community were two RUBA employees, who were in regular contact with the city and provided ongoing training and support.

The community and council were actively involved in the project. They conducted a community meeting in August 1998 and a city council meeting in September 1998, discussing the importance of proper use and maintenance of the utility and the importance of user fees to utility operation. The RUBA also conducted an educational meeting for community residents and utility users in April 1999. Administrators continue to educate the community through monthly notices and inserts in bills. 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.

Aside from the utility manager’s assessment, homeowners showed a willingness to support the system by paying their fees. As mentioned above, even though Hughes had a rate increase, collections went up in both dollar amount and the number of households paying.

Hughes' Summary

With capable key people, support from agencies, support from the council, financial support from the community, trained operators, and a financial management system that is effectively collecting fees, Hughes has the capacity to continue operating and maintaining its system in the long term. Hughes definitely built long-term capacity to operate and maintain its water and sanitation facility.

Nunapitchuk

A flush-haul system was recently installed in 33 homes in Nunapitchuk, with water delivery and tank hauling services. Construction continues for the remaining 73 homes. The city was very interested in using ANHB grant money, together with the city's resources, to learn more about the true costs of operating the flush tank and haul system and adjusting the rates to reflect that true cost. The community also wants to have a certified operator, since having a certified operator would help the community secure funds from the state’s Village Safe Water program and from ANTHC.

Nunapitchuk Implementation

The O&M money helped pay for the utility bookkeeper position. The community hopes the user fees it collects from households for water and sewer service will pay for that position, now that ANHB funds are no longer available. Having the bookkeeper helped the utility improve its journals and ledgers and its reports to the city council. The utility had planned to purchase a computer to help with the financial accounts, but never did. It still relies on an older machine, with an accounting system that seems to serves the community’s needs in the short term.
Near the end of the project, Nunapitchuk carried out a rate study and in the process learned more about the costs of operating the new system. The RMW analyzed another village’s costs and provided some guidelines to the council about what rates it should charge. The community studied existing charges versus and costs, including manpower, electricity, and other costs of providing sanitation service. The city council made informed decisions, taking into consideration the public's ability to pay.

As part of the O&M project, Nunapitchuk also got operator certification. Getting that certification was a major accomplishment, since several of the operators had considerable difficulty attending workshops and passing the exams.

Nunapitchuk Outcomes

The O&M 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 the operators, 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. Having a bookkeeper and improving financial management have helped Nunapitchuk keep track of delinquent accounts and determine how much it needs to charge to keep the system running. The council played a role in determining appropriate rates for some parts of the system, and came up with some ways to make sure customers pay.

Comparing RUBA quarterly reports from before and after the project suggests that the project helped improve system finances. At the end of 1999 and in early 2000, the reports summarize the changes:

The city is doing a good job in managing its finances. According to preliminary study, the water and sanitation services are close to breaking even. That can change mainly with labor requirements for hauling. The 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.

Contributions to Success in Nunapitchuk

From the quarterly reports, phone logs, and closeout interviews, it is clear that the city administrator took an active role in keeping the project moving forward.

The community sustained good working relationships with support agencies and groups. It had regular contact with the RMW from Bethel, who helped with the washeteria and maintenance of the new water and sanitation system. A representative of VSW was crucial in making sure the new water and sanitation system was completed, looking for funds, and monitoring warranty clauses. A RUBA checked that the overall financial management was running well and helped with the rate study. Another representative of VSW helped try to find out the range of maintenance costs and time needed for maintaining the system. The community also had contact with another RUBA representative who helped assess their billing procedures and recommended some improvements. A RUBA representative from Anchorage, was helpful with a water rate study.
Even though the finances of the utility are not completely solid, the community, the city council, and utility administrators have developed some long-term strategies for improving the collections and the financial viability of the utility.

According to notes from a discussion between ANHB and the city administrator, the utility has a surcharge policy for nonpayment each month. So if customers fail to pay their bills in a given month, a five percent surcharge is added, to be paid on the next billing cycle. The city council informed residents about this new payment policy in public meetings and also in the notice of billing. After six months, the council will review the surcharge to see if it has worked.

City officials are targeting people who don't pay for sanitation services. Officials report that some customers are very stubborn about paying bills, even though the rates are determined by the cost of providing the service. The council looked for ways to collect that would be effective but would not harm customers. For example, the council considered taking customers to court to force payment, but decided not to since it would only hurt people and not help them make payments in the long run. Instead, the council decided on other collection alternatives like withholding privileges to other city services (like laundry facilities) for those who don’t pay, or not letting them attend city recreational activities. These methods seem to be effective.

Summary of Nunapitchuk

The community made substantial improvements in finances and took the important step of getting a trained operator. The council found effective incentives to make customers pay for services and improved the community’s financial support of the system. While the system is not on completely stable financial footing, the pilot project was a focal point that helped gather the efforts of key people and the community as a whole to make long-term improvements.

Shishmaref

Shishmaref was the one community that participated in both the first and second phases of the pilot O&M project. Its pilot O&M project was intended to help the community prepare to operate, maintain, and finance ongoing operations of the newly installed flush tank haul system (FTHS). The work plan remained the same through the first and second phases. It called for creating a partnership team, buying needed replacement parts and new pumps for the water plant, offering community education, monitoring sanitation costs and revenues, developing a rate structure, training operators, and conducting a customer survey.

Shishmaref Implementation

Shishmaref purchased and installed needed parts for the water treatment plant and washeteria. The new parts helped improve the condition and operation of these systems. With notices and signs, community leaders educated washeteria users about proper loading and equipment use, which helped reduce the need for repairs of washers.

The newly installed flush tank haul system (FTHS) gave the community problems during the project. Several design problems with the new system caused freeze-ups of sewer lines, as well as cracked sewage tanks and pipes. Shishmaref had originally planned to educate the community about costs and preventive maintenance for the new FTHS, but need to wait until the problems with the system were resolved and the operators become more familiar with how the system works.
Part of the work plan was to improve financial management of the utility. Shishmaref straightened out the accounting procedures at the washeteria, and by the middle of the project the washeteria was breaking even financially. It also set up a computer accounting system and separate accounts for each of the components of the water and sanitation utility. This helped the utility track revenues and produce better monthly reports for the city council.

The city clerk (who also served as the utility manager) took three utility management workshops and earned water operator certification. This training helped her improve management of the utility and better communicate with the water operator about needed parts and repairs. Besides the clerk going to training, the mayor and two city council members also attended utility management training. This training helped the council members understand why it is important to monitor revenues and expenditures. The water operators studied hard to get their OIT certification, but as of mid-2000 had not yet passed the exam. The operator is getting daily tutoring from the adult education program and on-the-job training from the RMW.

**Shishmaref Outcomes**

At the close of the project, the project participants emphasized some of the most important outcomes they as a result of the O&M project:

- New separate accounts for the water and sanitation systems. These accounts allow Shishmaref to track expenditures and revenues more precisely, showing how much it actually costs to operate the system. Shishmaref now has a much better idea about how much revenue will be required to support the system. Regular monthly financial reports give the council better information to make informed decisions. The community still faces a revenue shortfall for the new system, and the city council has not yet addressed how to change the rate structure to improve revenue collections.

- Parts and replacement vehicles for the water and sewer system. The community used O&M grant money to buy these items, as well as to fix pumps and buy a new boiler and a dryer for the washeteria. The community also purchased a computer and printers to produce financial reports.

- Better communication between the utility managers and 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 the system needs.

The major delay in the project was getting the new FTHS 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 previously dysfunctional FTHS units are now operational.

**Contributions to Success in Shishmaref**

The focused attention of a number of people—city administrators, the city council, agencies, the contractor, and ANHB—over a prolonged period brought improvements. Their sustained effort over two phases, spanning three and a half years, demonstrates that the community has developed a strong commitment to improving sanitation facilities.

The long project period gave the city and agency staff the opportunity to try some particular approach, learn from it, try again, learn from the second try, and try a third time.
Improving the community capacity for utility management in Shishmaref took longer than one year. Shishmaref needed the second year to consolidate what it had learned during the first year.

The community relied on help from RUBA representatives. When it needed critical parts or help with repairs, two RMWs were there to help. A plumber with ANTHC fixed many of the problems in the FTHS. According to ISER’s Phase II report—as well as quarterly reports from ANHB and RUBA—many different support agencies, including RUBA, RMW, PHS, VSW, and ANHB actively participated in the Shishmaref project.

The project participants praised ANHB staff for their contributions. They appreciated ANHB’s answers to their phone calls, help with finding parts and supplies, and visits to the community. At the close of the project, one participant in the community said, “When things were going real bad, [ANHB was] always there to encourage us and help us along.”

Kobuk

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 plumbed water and sewer in all houses. The community hoped to take over management of the water and sewer system from PHS. The project was delayed considerably because the new water and sewer system had not yet been completed, and management had not been passed on to the city from PHS, until later than expected.

In preparation for taking over the system, Kobuk’s work plan 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.

Kobuk Implementation

Even though there was turnover in the utility manager position, Kobuk was able to set up the position and keep the utility operating. Having someone deal with just water and sewer worked well. The city council members reported that their training went well, but say that they still need more. Their utility operators got the training they needed and they are now fully certified. The city purchased computers and is using them regularly; the computers save time and money. City officials also went door-to-door and met with residents individually to review the ordinance, customer agreements, and the dos and don’ts of the sanitation system.

The main task the community did not implement was creating the utility board. Because Kobuk is small, the council decided that it would oversee the operation and maintenance of the utility until the responsibilities are too much, and then create a utility board.

Kobuk’s basic plan 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. That finding chilled the project and drew the focus away from completing tasks. No one wanted to take the position of bookkeeper, with responsibility for determining if a former city employee had embezzled funds.

Kobuk Outcomes

Perhaps the most significance accomplishment for the community was setting up the utility manager position. Even though there were some uncertainties at the end and a turnover in the utility manager position, the community was able to set up the position and keep the utility
operating. 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 system and gave it the day-to-day management and care that it deserves.

Kobuk was also one of the few communities that reported a generally successful mentor relationship. Several community residents took a trip to Noorvik; that trip got the group interested in making changes in their own community.

**Contributions to Success in Kobuk**

In closeout and overall interviews by ISER and ANHB, community residents singled out their RMW as very helpful. He was readily available, came to help in emergencies, and set up quarterly training for the sanitation system operators. Community residents also praised the RUBA as “wonderful” in setting up books and financial records. They felt that without the RUBA to create some continuity over time, it might not have been possible for the community to implement the project.

As part of the project, city officials went door-to-door to educate homeowners on the utility ordinance, customer agreement, and use of the system. This door-to-door contact proved very useful for improving collections. It helped the homeowners understand that the money they paid in fees went directly to operating and maintaining the system rather than to anything else. City officials also mail out notices with bills, telling customers about water test results.

According to project participants, these community education efforts have helped customers understand why they need to pay on time so the city can keep up the system and pay for its operation and maintenance. As a result, people have been more forthcoming with payments, and a few have even wanted to pay in advance. The utility manager says collections have been pretty good, except when customers are gone for a month or two because of an emergency or some other problem.

**Kobuk Summary**

The pilot project helped the community focus on water and sanitation issues. Creating the utility manager position, visiting the mentor community, and providing community education helped the community improve maintenance and sustain the financial viability of the system.

**Kaltag**

In its application, Kaltag emphasized that it wanted to help homeowners have a better appreciation, understanding, and awareness of their water and sanitation system and to provide quality sanitation service to customers. It 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 to keep track of books; to educate the community about the system; to develop a preventive maintenance program; and to build up an inventory and purchase spare parts.

**Kaltag Implementation**

Kaltag completed nearly all these tasks, which helped the community manage, operate, and maintain the water and sanitation system better. It successfully installed a computer and got training for city staff, so they could keep better track of accounts. The water operator developed
the preventive maintenance schedule. For his work, he was awarded the Small Systems Operator of the Year award by the Alaska Water and Wastewater Management Association.

Kaltag Outcomes

Those involved with the project in Kaltag said that one of the most substantial effects of the project was creating a better understanding of the sanitation system and an appreciation for its role in the community. This better understanding helped with preventive maintenance, since Kaltag knew how to take care of repairs on its own. Understanding the system also helped city officials educate the community and explain the costs of repairs. The mayor emphasized that her improved understanding of the system helped her and other community residents develop a long-term perspective on operating and maintaining the system.

Project participants also felt that the project helped improve communications and cooperation between the city council and those managing and operating the system, making it easier to make good decisions for the community.

Another important project outcome that all participants strongly emphasized was improved teamwork. They attribute much of this improvement in cohesiveness and group communication to their successful visit to Nulato, their mentor community. They visited Nulato to learn more about Nulato’s water and sanitation system. When the group from Kaltag returned home, they reported feeling more like a group that took pride in working together to make a better water and sanitation system for Kaltag.

Kaltag’s major continuing difficulty is in financial management. RUBA quarterly reports consistently note that the system is run on a shoestring, with serious cash flow problems created by a lack of money in the community. There are several reasons for the poor cash flow: 1) lack of an agreement with the school, 2) delinquency problems, and 3) poor cash management. Community officials are looking at financial incentives for individual customers to pay bills, as well as considering the larger picture of how much money is available in the community to support the sanitation system.

Contributions to Success in Kaltag

Several project participants mentioned the water operator as a key to the success of the project. They noted his overall understanding of the system and his willingness to do repairs and buy parts; he also developed, on his own, a maintenance schedule. RUBA reports in 1998 confirm 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 when such matters as rate setting and budgeting come into play. In early 1999 the operator received the Small Operator of the Year award from the Alaska Water and Wastewater Management Association. It is clear from the closeout interviews that the personal attention the water operator gives individual customers is an effective form of community education. He works with homeowners one-on-one, helping them understand how the system works and what is involved in maintaining it.

The Kaltag residents who worked on the project said that all the support agencies were important for success. RUBA training, RMW support and, PHS's work on installing the new system were all important.

While Kaltag still has significant financial problems, it is working hard to educate residents about the importance of paying fees and improving collections. The project helped city
employees better explain to the community the costs of preventive maintenance and repairs. The mayor said Kaltag hopes to continue this community education by including some information about the costs of repairs in a homeowner’s manual. This manual would also include tips on troubleshooting problems and maintaining furnaces to prevent freeze-ups, as well as a list of supplies, where to get parts, suggestions for preventive maintenance, and estimates of what repairs cost the homeowner and the city.

In the meantime, before the manual is completed, the city puts tips on how to conserve water and prevent freeze-ups in the local newsletter. Training for the city council further enhanced community education. Because they know more about the system, council members are able to ask more questions about it and understand problems better when they arise. The mayor believes this probably had an impact on overall community education and 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 city council have a high degree of interest and participation in keeping the community system running smoothly. The reports say the new washeteria is “state of the art” and that the community is tremendously proud of this facility.

**Kaltag Summary**

Both the mentor community and the project community felt the program made long-term changes in Kaltag—changes that would not have occurred without the program. Eventually the community would have learned through trial and error, but the grant helped it set up goals, as well as providing information and support. Kaltag participants said that if they had been on their own, the changes would have taken longer and cost more. As one said, “The push of time constraints does help us to move a bit faster than we otherwise would.” The community still faces substantial financial problems, but it is looking at incentives to improve collections and working hard on community education to improve homeowners’ financial support of the system.

**Moderately Successful Communities**

The next group of projects had substantial success, but the implications of their success were narrower in some respects. They completed most of their tasks, but it is less certain whether they will be able to sustain the operation and maintenance of their water and sanitation systems in the long run—either because of financial problems, political or organizational problems within the community, or problems with operating and maintaining the systems. The communities included in this group are Gulkana, Kwethluk, Nightmute, Deering, and Saint Michael. What these communities have in common is that none had the full complement of key persons and broad community support to sustain changes after the pilot project ended.

**Gulkana**

Before the start of the pilot O&M project, the community’s most pressing need was for replacement parts for its sanitation system. The village had struggled to correct problems with its water treatment plant, and the problem had been exacerbated by a lack of replacement parts. More broadly, Gulkana hoped the project would balance its operations and maintenance budget, enabling the community to become “self-sufficient”—able to pay for operations and maintenance without outside funding. To try to meet these needs, Gulkana’s project work plan
said it would develop a parts inventory, write a homeowner’s manual, and develop a user’s agreement for households.

**Gulkana Implementation**

Gulkana developed the parts inventory and bought the parts, but ended up spending more than the budgeted amount. The parts inventory has enabled the community to make repairs more quickly and save money. The remaining unresolved issue is the need to pay for parts and continued maintenance, now that the O&M grant money has run out. Gulkana hopes to collect more user fees and educate the community about the importance of paying the fees. However, it is not clear from the record that the community has become “self-sufficient,” as it hoped.

**Gulkana Outcomes**

From the perspective of project participants in the community, the program helped them and made possible long-term changes that would not have been possible otherwise. Most important, the community did a complete inventory, determined what it needed for the new system, and used some of the money to purchase new parts and tools. In the closeout interview, project participants identified several instances where having the spare parts on hand saved considerable money. Having needed parts on hand improved operation of the water and sanitation system. The grant also provided support to the operator and improved his ability to maintain the system.

**Contributions to Success in Gulkana**

Project participants and the mentor community praised the operator for caring about the system and making sure the community complied with testing and reporting requirements. Operator job satisfaction increased. He is well trained, enthusiastic about the new system, and interested in training. According to representatives from CRNA, key people within the community also helped the project proceed: “Leadership was key to the success of the project. The council was supportive. Without the utility manager and the water operator, the project would not have been successful.”

Project participants also singled out their RMW for his helpfulness in going through manuals, helping the utility manager get up to speed on the project, and helping with the parts inventory. They praised him for “coming right away” when they needed him.

The remaining unresolved issue is how Gulkana will pay for parts and continued maintenance. It did not become “self-sufficient” in paying for parts and maintenance, as 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.” Gulkana’s mentor community (CRNA) was less optimistic about Gulkana’s ability to raise funds needed to pay for replacement parts in the long run.

To address this issue, Gulkana has developed a homeowner’s manual and is working on a customer agreement. The homeowner’s manual explains the proper care and basic maintenance of the household wastewater and drinking water systems. The manual is intended to help homeowners maintain their own household plumbing and become self-sufficient with repairs, with an emphasis on winterization and preventing freeze ups. It was clear that those who developed the manual had thought carefully about how to reach a broad audience and get the community more involved in maintaining the system. Gulkana is also working on a customer use
agreement that spells out the homeowners’ responsibilities for paying fees and maintaining the system in their homes. By spelling out fees more clearly, Gulkana hoped to increase collections.

There are several indications in the record that the community was aware of and supported the pilot O&M project. Both the participants in the project community and the mentor organization, CRNA, felt that the homeowner’s manual and the customer agreement would go a long way toward improving community support. CRNA’s representative also said that support would likely increase when the new system comes on-line, since water quality is a huge concern. He explained that 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, he says, the community would be more willing to pay fees for water.

**Gulkana Summary**

Gulkana was able to make great strides in developing a parts inventory that has helped improve the operation of its system. The water operator has been praised as a crucial contributor to operation of the system. Gulkana is still finding ways to build community support for the system and hopes the community will provide more financial support in the long run, as a new water system is installed and the customer use agreements are signed.

**Nightmute**

When the O&M project began, a new flush-tank-haul system (FTHS) was being installed in Nightmute, and the ANHB project was intended to help the city take over operation and maintenance of the new system once it was completed. Nightmute wanted to improve the way it collected money for the sanitation system, so the system could stand alone financially if the city government was no longer able to support it.

**Nightmute Implementation**

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

High turnover in the bookkeeper position led to some setbacks. Nightmute currently doesn’t have a bookkeeper for the FTHS system due to a lack of money. An electrical brownout burned out the computer, causing some delays in the project. Recent RUBA reports indicate Nightmute still does not have a functioning printer to produce reports. In the original grant, the community also wanted to create a utility board to manage the new system separately from the city. The utility board was eventually set up and was scheduled to begin meeting in March 1999.

**Nightmute Outcomes**

Finding funds in the long term to do repairs and purchase parts for the FTHS system is an ongoing problem that has not yet been solved. For the system to pay for itself in the long run, community leaders say homeowners will need to 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 are current in their bills.
Nightmute has asked RUBA to help with a rate study, so the community can learn more about the cost of operating the new system and figure out how much to charge customers for the new system. It 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 paying for the time of the water operator and janitor when they do work in the houses. Repairs in the first year were covered under warranty; since then, some homeowners have not been able to afford repairs. To address this problem the city set aside $1,000 a month to pay some of the cost of parts and labor.

*Contributions to Success in Nightmute*

The city administrator noted that the community took great pride in the FTHS system and that residents were happy to get the honey-bucket smell out of their houses. Judging from field notes and phone logs, the first utility manager was crucial in getting the project going and continuing in Nightmute. While he did not stay on the job throughout the entire project, he was instrumental in getting it under way.

*Nightmute Summary*

Nightmute did succeed in getting many of the needed parts and supplies. It was able to develop a fund to pay for some of these repairs in the long term, when the warranties on the new FTHS expire. It has also set up a separate account to manage the FTHS system. However, there are indications that the FTHS is not paying for itself and that only half the homeowners are paying their fees.

*Deering*

When the O&M project began, Deering was undergoing major construction improvements to their new water intake, water treatment plant, storage tank, water haul, and vacuum sewer system. The community is still, in 2000, dealing with repair problems, broken parts, and other issues of bringing the new system online. The ANHB project was intended to help the city be ready to maintain its systems in the long run, once they were up and running.

Construction of the new system and the ANHB project were both delayed considerably due to an archaeological find. Much of the discussion during the project shifted to dealing with these archaeological finds. RUBA assisted the village in trying to find funding to conduct the proper archaeological fieldwork; there was even discussion of contacts with the National Geographic Society to write about the finds. This archeological find demanded more attention than Deering could have anticipated when it applied for the ANHB grant.

*Deering Implementation*

Despite these delays, Deering was able to buy much needed equipment and do repairs—in particular, fixing washers and dryers in the washeteria. The grant helped pay for a bookkeeper and purchase a computer, which helped Deering get its financial accounts more in order. One crucial task that remains undone is that the utility manager has not attended utility management training, due to scheduling conflicts.

The water operators got much-needed training and earned certification. This operator training is especially helpful for the community: with the new system coming online, the city is taking it over and will rely on the operators to identify problems with the vacuum sewer station and keep it operating. Previously, Deering had outside agencies doing most of the O&M of the
new system. The project prepared the operators—through training and experience—to take over the system.

Community residents say the city council has been pretty good about developing 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: the city manages the water and washeteria but not the new sewer system. This split in management made it more difficult for the city to implement some of the changes it would have liked to make.

Deering completed a homeowner’s manual to tell customers how to care for and maintain household plumbing. It had a public meeting to go over the manual; about 25 percent of homeowners use it. A user’s agreement has been written, but it not all customers have signed it. Due to repair problems and lack of parts for the new system, some of the homeowners do not want to sign the homeowner’s agreement, because they would then be responsible for buying the parts needed to keep their system running.

**Deering Outcomes**

The community’s investment in financial management and community education is paying off. Before the start of the project, RUBA reported that the city had collected about 40 percent of the customer deposits for current year hook-ups. Midway through the O&M project, RUBA reported that the city was collecting fees and that over half of the customers paid three months in advance. At the end of the project, the utility manager reported that about 95 percent of customers pay within two months. (After payment is that far in arrears, the utility may disconnect service.) The training the operators attended was clearly the most helpful aspect of the O&M project. The project prepared the operators, through training and experience, to take over the system when it is operational.

Deering is still dealing with problems of bringing the new system online. The problem in 2000 is whether, with ten new units coming in, the system will be able to handle enough water storage. Deering is also still trying to get some of the new system working properly. Most of the calls for repairs are because homeowners allow the system to freeze.

**Contributions to Success in Deering**

The community was involved in building the new project, through a homeowner’s manual and meetings. The homeowner’s manual describes how to care for and maintain the household plumbing; about 25 about of the households use it. Since a good percentage of the people are paying their fees, there is an indication that they support the system. RUBA quarterly reports confirm that the community is behind the new system.

**Deering Summary**

Progress on this project was delayed by an archaeological find. The community focused on dealing with that find, as well as getting the new system up and running. These efforts occupied most of community leaders’ time during the O&M pilot project. There are indications that Deering will have good community support and collections to pay for the operation and maintenance of the new system.
In Saint Michael, a new sanitation system is under construction to provide holding tanks and water delivery 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 connections were planned for another 37 houses.

To prepare for this new system, the village identified several needs: training the bookkeeper in utility management; educating the public about the new system; providing additional operator training, so the operators could better understand the new technology; and developing 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 this system: would it be the City of Saint Michael or would that responsibility or authority eventually be transferred to the tribal government?

The grant helped Saint Michael get past a potential bottleneck that threatened to delay the completion of the new sanitation system. This was important to the community, because it needed a certified operator to qualify for a VSW grant to continue funding for its water and sewer project.

The ANHB grant also had more specific effects on management of the system. The city administrator focused on administration and maintenance more closely. She said the grant helped the city clerk and bookkeeper organize expenditures and revenues that were coming in for water and honey-bucket haul. The computer helped city employees gather and organize data so it was easier to do monthly reports.

The grant helped Saint Michael get the new washeteria up and running. The monitors for the new washeteria did get some training, but need more. The community purchased a cash register that made it easy to develop separate accounts for the washer, the dryer, the pump machine, and the showers. The grant also helped the monitors go to an automated laundry workshop to learn how to fix washers.

Saint Michael has developed a draft homeowner’s agreement for each household. When it is completed, the city will send an informational packet, including a customer use agreement. In addition, the city has drafted a rate-setting review for water, wastewater, and solid waste. But it is still working on the review, because things are going to be a bit different for collections under the new system.

The grant also helped Saint Michael purchase parts and do modifications and maintenance for the water treatment plant and utility system. In the closeout interview, the community said it would miss the grant because it still needs additional funding for continued operations and maintenance, as well as for education for water operators. As one resident pointed out, “We still need to train two more water operators, because one is not sufficient enough for the community. We still are going to seek funding for maintaining the new system.”

The grant succeeded in helping Saint Michael prepare to manage the new system in the long term. The most important contribution was that the city and the tribal council got together to 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’d understand the bigger picture of putting our water and sewer in.” She said the two organizations now better understand their combined role of managing the system and the importance of the new system for the village. This cooperation has also helped generate community support for the sanitation system, since people in the village see the two organizations working together.

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

**Contributions to Success in Saint Michael**

Saint Michael is not a recognized RUBA community and receives only limited support and advice. The village got in contact with representatives from RUBA to discuss what it needed to do to become a RUBA community and thereby to receive more extensive and regular support. The RUBA representatives noted that important financial activities had not completed (things like unmailed, unopened bills and 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; RUBA representatives provided a checklist of things the community needed to do before it was recognized as a RUBA community. The Community leaders were a bit frustrated by this situation, because they felt they needed some assistance to meet RUBA’s minimum requirements for assistance.

In the closeout interview, the city administrator, Virginia Washington, said that more people are paying for honey-bucket haul service. She estimated it has increased by about 20 percent or more, but was not certain of the exact figures.

**Saint Michael Summary**

As a result of the O&M project, Saint Michael was able to purchase much-needed parts and the city and tribal councils started working together. However, there are two important indications that the community does not yet have the capacity to sustain the O&M of the water and sanitation system beyond the end of the project. RUBA quarterly reports say that the community has not yet met basic management requirements to become a RUBA community. In addition, community residents said in the closeout interviews that they expect to continue applying for grants to pay for parts and repairs, rather than trying to find ways to raise the money within the community.

**Kwethluk**

Kwethluk wanted the O&M project primarily so it could separate management of the utility from the city. The community wanted to set up a new management structure for the sewer and water system, so the utility could eventually pay for itself and be managed independently by a utility board. In addition, the tribal council had just been awarded a large grant for construction of new water and sanitation facilities. The community was trying to anticipate this new system by setting up a utility board and improving utility management.

Kwethluk developed a plan to hire a utility manager and utility board and get them the training and financial tools they needed to operate the system. Kwethluk also wanted to improve finances and management of the water and sewer system. The community hopes that through
these changes, as well as community education efforts, the utility board and the community will gain an increased understanding and appreciation for the water and sewer system and be prepared to run the new system when it is eventually constructed.

**Kwethluk Implementation**

There was some turmoil and confusion during the first part of the project about creating the utility board. The city needed to pass an ordinance creating the utility board, so the board could hire a manager, pass regulations, and establish rates. The city council delayed passing the ordinance, partly because of confusion in the city about the form of government residents want and who should manage 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 project community leaders were still debating about who should actually sit on the board.

While it was resolving the utility board issue, Kwethluk managed to hire a utility manager—but the manager quit soon after completing training. Kwethluk hired another manager who worked with O&M project funds to buy parts and make needed repairs to the washeteria. After considerable delay and numerous closings of the washeteria, Kwethluk ordered parts for the washeteria’s 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.

The community had ongoing collections and financial problems throughout the project. The computer it installed did help organize the books but did not alleviate the financial problems. At the end of the O&M project, the city was considering closing down all but essential services.

**Kwethluk Outcomes**

The most substantial outcome of the O&M project was the purchase of needed equipment and parts for, and repair of, the washeteria. The grant was helpful in purchasing three washers, a suction vacuum pump, and some parts for washers and dryers. It helped pay for some time for the utility manager and operators to do needed repairs as well as to purchase a computer, office equipment, and software.

Without this money to purchase parts, the city would likely have been worse off. However, because of long-term, ongoing financial problems, the grant may have temporarily filled a hole in the repair budget but not changed collections or improved Kwethluk’s ability to pay for parts and repairs.

The other 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. The utility commission and a defined role for the utility manager did not exist before the project.

The creation of this board also stimulated an open discussion in the community about how residents wanted their utility managed. The community emphasized the improved communications that began among representatives of the utility board, the community, and other agencies. This improved communications will likely have long-term effects beyond the end of the project.

**Contributions to Success in Kwethluk**

During the project, the community of Kwethluk debated about leadership. Should the city, the tribe, or a utility board manage the utility? Who should sit on the board? Should the
board be appointed or elected? These issues dominated the project. Now that the commission has been set up and is operating, it may have substantial long-term effects by improving utility management.

In a way, the project helped move this necessary discussion forward. The community needed to determine who would manage the utility before it could address the pressing problem of collections. The ANHB grant served as a catalyst for discussion and debate about how residents wanted their utility managed—and by whom. The project helped stimulate community interest and long-term participation in water and sanitation issues—participation that did not exist before.

The two utility managers also made important contributions to the success of the project. Even though there was turnover in the position, both managers demonstrated a keen interest in getting the project done.

Project participants reported that a lot of community residents have difficulty paying the fees necessary to support the system. When the utility aggressively tries to make collections or educate customers about why it's important for them to pay, utility employees find that water and sanitation are just bits and pieces of the overall needs; local resident say there are more important things they need to take care of.

Part of the problem with increasing collections is related to equitable treatment of customers. Some households have honey-bucket haul services and a lot of households have no service. Before the utility can require collections, it must first address the perception that not all households have the same access to sanitation facilities.

**Kwethluk Summary**

The pilot project in Kwethluk was delayed considerably by a community debate about the appropriate management of the utility. The project seemed to focus debate and develop community support for a long-run solution to utility management. This resolution of management was a crucial step before the community could make other improvements in operations and maintenance. Kwethluk is still working on ways to improve collections, but may need to address some issues of equitable access to sanitation facilities.

**Less Successful Communities**

Only one project was unable to benefit substantially from the pilot project. Project participants attribute part of the difficulty to poor communications within the community and with support agencies. In addition, there appear to be some political difficulties in the community that may have distracted it from implementation of the grant. The community relied on the grant to make emergency purchases of much needed parts and did not see the grant as a way to create long-term changes.

**Wales**

At a brainstorming session with ANHB before the project began, Wales identified a long list of needs: 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 to bins, septic tanks, trailers, and buildings. The community chose to address several of these crucial needs with the ANHB grant. It focused on acquiring equipment (especially bins and
a trailer), getting operator training, improving utility management and collections, and providing community education.

**Wales Implementation**

Wales focused on purchasing needed parts and equipment. It ordered a list of replacement parts for the water system, as well as bins and a trailer for the honey-bucket system. It also bought some parts and equipment for the washteria—but the washteria is still in disrepair.

The community spent money on sending the water operator for training as well as paying for at least three or four bookkeepers to help with the accounts. There was considerable turnover in the bookkeeper position and the operator proved unreliable.

Wales had difficulty in completing several other tasks in the work plan. The community attributed part of its difficulty in implementing the project to a lack of communication between the village and ANHB. The village also said that there was a lack of communication between the utility manager and the bookkeeper. Another ongoing problem that further hindered the project was the inconsistent performance of the water operator.

**Contributions to Limited Success in Wales**

What made limited project 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. PHS was crucial in helping the community order bins and a trailer. Without their help, the project would likely have failed altogether.

Within the community, the new mayor and elders on the council were identified as potential leaders. There is also some consensus that community residents want a new water system. Community leaders conducted two door-to-door surveys to gauge support for the proposed piped water system; the mayor reported that the surveys indicated citywide support for the proposed system. Most people want piped water, and the city council is interested in knowing what is going on. This broad community support will be crucial if they want to install a new piped water system.

However, even though there are indications of community support and leadership, there are indications in the record that several factors could derail a new project. A community member active in local government spoke in interviews about the political divisiveness in the village, noting that divisiveness had contributed to disorganization in the government offices.

RUBA quarterly reports confirm some disorganization in the city government. Those reports indicate that from mid-1998 through the end of December 1999, there were continued problems with getting a quorum for council meetings. When PHS staff were in Wales to discuss the upcoming sanitation project, there was not enough public input and council involvement at the meeting to justify going ahead. RUBA reports also say the city council has a hard time running meetings and does not grasp financial matters. The reports show that during development of a sanitation facilities master plan, it was hard to get attendance at public meetings and that city officials are hard to reach and not forthcoming with information.

**Wales Summary**

Several conditions in Wales indicated an underlying disorganization: the difficulty in getting a consistent operator, disorganized government, ineffective decisionmaking and lack of follow-up, and high turnover in critical clerk positions. In addition, the community seemed
focused on using the grant money to fill emergency needs: most contact that community leaders made with ANHB was for help in expediting emergency purchases of parts and equipment that were needed “immediately.” This crisis management distracted the community from looking at ways to use the money to create long-term changes.
Effectiveness of Particular Activities

The preceding section and all of Volume II identify community characteristics—the context and existing conditions—that helped make projects more successful or less successful. In this section, we take a complementary view, looking at what particular project activities were effective, independent of the community. Examining specific activities, rather than communities, gives us a better understanding of what types of activities may be effective in other communities.

To get a broad overview of the types of activities done for the pilot O&M projects, we have tallied the tasks most commonly included in work plans and most commonly completed. Table 6 summarizes the types of activities undertaken in the Phase II and Phase III communities and whether the tasks were completed. In Table 6, a “Yes” in a particular cell in the table denotes that the task was in the original work plan and was completed. A “No” indicates that the task was in the original work plan but was not completed. A blank cell means that the task was not in the original work plan.

For the most common activities listed in Table 6, we investigated how the activity helped or hindered communities. Using the detail about projects contained in Volume II and in the previous section, we review here how particular activities worked in different communities.

Partnership Teams

By far the most common and successful activity was the creation of partnership teams. The design of the program encouraged communities to interact with state and federal agencies and other communities to complete their projects. All communities developed, to some extent, alliances outside the community to complete the projects.

As discussed in the previous section, the ability of communities to work effectively with outside agencies was critical in determining success in many of the communities. Representatives from RMW, RUBA, VSW, PHS, ANTHC, and others who work in the communities were often cited as crucial contributors to the successful projects.

As summarized in Table 7, the most successful communities listed extensive contacts and interactions with outside agencies. They interacted frequently with many agencies and were able to get the help they needed, not only for the O&M pilot project, but for other projects in their communities.

Some of the communities that were not as successful did not exhibit the same extensive network of support. However, other less successful communities had extensive contact with their partnership teams and still struggled to carry out their projects. So there is no systematic indication that more contact with agencies or more regular contact will necessarily make projects more successful. Partnership teams are an important contributing factor that all communities found useful, but they are not the only ingredient needed for success.

This section directly addresses the research questions, "What interventions work to improve O&M?" and "Were the successful interventions successful across different types of communities?" (See Table 4, Chapter II.)
### TABLE 6. SUMMARY OF TASKS IN WORKPLANS AND TASKS COMPLETED BY COMMUNITIES

<table>
<thead>
<tr>
<th>Category</th>
<th>Phase III Communities</th>
<th>Phase II Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gulkana</td>
<td>Hughes</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Utility Management</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Utility Manager</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Utility Management Training</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Create Utility Board</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Utility Board Training</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>General Financial Management</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Financial Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bookkeeper</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Computer</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Rate Study</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Audit</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Operator Training</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Operator Support</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Purchase Parts</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parts Inventory</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Preventive Maintenance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Create Water Delivery Service</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Water Quality Monitoring</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Operations and Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Community Education</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Homeowners Manual</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Customer Agreement</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**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
## TABLE 7: SUMMARY OF PARTNERSHIP TEAM INVOLVEMENT IN COMMUNITIES

### Most Successful Communities

<table>
<thead>
<tr>
<th>Community</th>
<th>Involvement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hughes</td>
<td>Project participants in Hughes noted that the RMW was important to the success of their project. He provided assistance for water plant operators to keep plants going and to do preventative maintenance. Also working extensively with the community were two RUBA employees who remained in regular contact with the city and provide ongoing training and support.</td>
</tr>
<tr>
<td>Nunapitchuk</td>
<td>The community sustained good working relationships with support agencies and groups. They had regular contact with the RMW from Bethel who helped with the washeteria and maintenance of the new water and sanitation system. A representative of VSW was crucial in making sure the new water and sanitation system is completed, looking for funds and monitoring warranty clauses. A RUBA checked to see the overall financial management was running well and helped with the rate study. Another representative of VSW helped with trying to find out what kind of maintenance costs are associated with producing water and how much time would be involved. The community also had contact with a RUBA representative who helped assess their billing procedures and recommended some improvements.</td>
</tr>
<tr>
<td>Kobuk</td>
<td>Members of the community singled out their RMW as very helpful. He is readily available, comes to help in emergencies, and sets up quarterly training for our operators. In addition, they praised the RUBA as wonderful in setting up books and financial records. Without her presence to create some continuity over time, respondents said it might not have been possible for the community to implement the project. In addition, other representatives from RUBA and ANTHC, and an RMW helped on the project.</td>
</tr>
<tr>
<td>Shismaref</td>
<td>The community received ongoing support from DCED, two RMWs, and ANTHC and VSW. As described in more detail in the Phase II report, RUBA reports, and ANHB quarterly reports, RUBA, RMW, PHS, VSW and ANHB all actively participated in this project.</td>
</tr>
<tr>
<td>Kaltag</td>
<td>The Kaltag residents who worked on the project said that all support agencies were important for success, including Alaska Native Tribal Health Consortium and TCC. RMW and RUBA representatives also helped with the project.</td>
</tr>
</tbody>
</table>

### Moderately Successful Communities

<table>
<thead>
<tr>
<th>Community</th>
<th>Involvement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulkana</td>
<td>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, Alaska Native Tribal Health Consortium, and CRNA also contributed.</td>
</tr>
<tr>
<td>Nightmute</td>
<td>Coordinated with YKHC-OEH&amp;E for utility training and had extensive contact with RUBA on installation of computer and training on site.</td>
</tr>
<tr>
<td>Deering</td>
<td>VSW (the coordinators of the new construction) was one of the major contributors to the project. Summit Consulting and VSW helped. The community also got assistance from RMW and RUBA programs, and from DCRA.</td>
</tr>
<tr>
<td>Saint Michael</td>
<td>The village is not a recognized RUBA community and receives only limited support and advice. The village was in contact with representatives from RUBA to discuss what the city needed to do to become a RUBA community and receive more extensive and regular support.</td>
</tr>
<tr>
<td>Kwethluk</td>
<td>RMW, YKHC, and ANTHC contributed to the project.</td>
</tr>
</tbody>
</table>

### Less Successful

<table>
<thead>
<tr>
<th>Community</th>
<th>Involvement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>The RMW was crucial in getting a list of replacement parts and making sure they were installed. Representatives from PHS were crucial in helping the community order bins and trailer.</td>
</tr>
</tbody>
</table>
Parts and Supplies

The next most common activity among the Phase II and Phase III projects was acquiring parts and supplies. Often one of the primary motivating factors for O&M projects was getting the money to replace worn parts or develop an inventory of parts to handle repairs as needed. Nearly three quarters of the communities included the acquisition of parts and supplies in their work plans. Nearly all of them were able to acquire some or all of the parts. All these communities mentioned in closeout interviews that one of the benefits of the project was that it enabled them to make the needed repairs and get their water and sewer facilities functioning better.

It was common in projects to reallocate funds after the project started, to acquire more parts. In several instances, emergency repairs had a higher priority than other tasks. In roughly 10 to 20 percent of the projects, communities reallocated funds away from tasks so they could spend more money buying parts.

It is not practical to look at just the acquisition of parts and supplies as a stand-alone activity. The long-term effects of buying new parts and equipment depended on other tasks as well. In nearly all the work plans, acquiring parts and supplies was combined with other tasks. Improving collections, changing financial management, training operators, or developing procurement procedures often supported and complemented the acquisition and installation of parts and supplies. For example, improved finances or new procurement procedures enabled some communities to pay for more parts and supplies on their own in the long term. Operator or utility training helped participants understand which parts to order and how to make repairs. Because the acquisition of parts and supplies depends on other tasks, it is important to look at groups of activities that support each other rather than at particular activities independently.

But even in some communities where acquiring parts and equipment seemed to be coupled with complementary activities, it was clear that simply getting parts was their primary goal. Some communities that had listed other tasks—such as community education or financial management—clearly focused on just acquiring parts. Once the O&M project ended, they planned to turn to other outside sources to pay for parts.

Other communities took a much longer-term view and developed a process to regularly replace parts after O&M funding ended. In some cases, they were able to develop procurement procedures and collect sufficient revenues to continue replacing parts on their own. The communities that were able to take this long-term view had existing conditions that distinguished them from others. We discussed these distinguishing characteristics earlier in the chapter, when we looked at how project success varied across communities, and we will again in Chapter IV and in Volume II. Because acquiring parts and equipment had different long-term outcomes in various communities, it is important to consider the conditions in the community before including this activity in future project work plans.

In summary, acquiring parts and equipment was one of the most common and popular activities for O&M pilot projects. However, simply acquiring parts and supplies does not guarantee long-term changes. As was already done in nearly all the project work plans, communities need to look at other tasks that support the acquisition of parts and supplies. Even with these supporting tasks, some communities were more successful than others, due to existing community conditions.
Training

Almost all the projects provided for some sort of training: training for operators, utility management training, computer training, bookkeeper training, and other forms of training. Training took many forms and included scheduled workshops, on the job training, informal training from RMWs and RUBAs, and visits to mentor communities where visitors received tours and informal training.

The projects were nearly always successful in getting people the training they needed. The rather rare cases when the training did not occur were often attributable to scheduling conflicts or personal difficulties. One of the difficulties faced by many communities as they tried to implement training was turnover in positions: after people received training, they quit the job. In most cases, after some delay, the new person in the job got the necessary training. In these cases, turnover increased the cost of training for the project as a whole.

Training usually had beneficial long-term effects in all the project communities. Trained operators were able to better maintain systems. Utility managers with training could manage systems better. Bookkeepers and clerks trained on computers said they kept better accounts and produced better reports. City or tribal council members who got training in utility or city management said they ran better meetings, asked better questions, and understood more about how they could support the utility. In some cases, having trained operators enabled communities to qualify for grants that would not have been accessible to them otherwise.

One interesting type of training that benefited a few communities was joint training with other communities. The utility manager from Nightmute and a representative from Nightmute’s mentor community, Napaskiak, were able to attend the same training session. The city council and other project participants from Hughes had joint training on management in second-class cities with their mentor (the tribal council from Too’gha Inc., the utility operator in Tanana). In both of these cases, the mentor relationship did not turn out as expected. However, the communities considered the joint training beneficial because it helped them develop an understanding.

Overall, training was beneficial for individual people, because it improved their job performance and their self-confidence. Training helped improve the operation and maintenance of utilities, since individual employee learned more about how to maintain, operate, and manage the systems. There were also spillover effects in the community, since council members and utility staff could make better long-term decisions and inform the community about the importance of their systems.

Computers

During Phase III, buying computers was a very popular activity among communities, with five out of seven buying them. In many cases, they purchased the same types of computer and software, based on the advice of RUBA representatives. They usually used the computers to install financial software to keep the books for the utility. Most of these communities received training in computer use from either RUBA or a private company.

There was almost universal praise of the new computers. Most important, they helped communities keep track of financial accounts. In some communities, this was the first time they had a reliable, systematic listing of revenues and expenditures. Some had used written ledgers before and having a computer was a substantial improvement in bookkeeping. With the
improved financial information system, they could get a handle on whether or not their system was paying for itself. Other communities used the computers to collect and organize data on the costs of operations. Some used this information for rate studies. Computers helped keep track of delinquent accounts and improve collections. They helped the staff generate timely and reliable financial reports for the city councils, thereby improving council oversight and decision making.

There were some rather rare reports of hardware failure or difficulties in getting the computers to work. One computer had a burned-out processor due to a power outage. Another had an incompatible printer and could not print out reports for several months.

Most of the new computers purchased by communities are the same brand (Gateway) with the same software (QuickBooks). Most of them got advice from RUBA representatives who apparently have standardized the computer advice they offer to communities. This standardization makes it easier for RUBA representatives to install, troubleshoot, and train bookkeepers on the new software. The other advantage is that bookkeepers and computer operators in different villages can offer support to each other, since they are familiar with similar (if not identical) computers and software. In addition, if someone trained on a computer in one village were to move elsewhere, they could work in the new village.

Utility Board

Some communities sought to create utility boards that would manage the utilities separate from the city councils. In some cases, they wanted to move management of the utility to a board because the existence of the city council was tenuous. In other cases, they hoped a utility board would be able to devote more attention to the utility and improve its management. Several communities included stipends for utility board members to attend meetings, as well as time for utility managers to supervise and support the boards. Experiences of communities with utility boards are varied, so it is best to look at them as separate case studies.

- **Kwethluk** wanted to create a utility board to manage the utility separate from the city council. It hoped that separating the utility from the city would help make the system self-supporting. This desire to separate the utility from city management stirred up an active and constructive debate that took much longer than expected. The city needed to pass an ordinance recognizing the utility board and giving it authority to manage the system. The city delayed passing this ordinance, causing some confusion about whether the board had any authority to act. The city eventually did pass the needed ordinance and started to create the board in March 1999. However, the debate continued, since the utility board felt it could not be financially viable on its own and needed to technically be part of the city.

Added to this debate was a long discussion about whether residents wanted the utility managed by the city council or the tribal council. The city had managed the utility in the past, but it made sense to transfer it to the tribal council, since it had been awarded a grant to construct a new water and sanitation system.

Eventually, the utility was incorporated as a non-profit organization called the Kwethluk Utilities Commission, which the new utility board administers. The community is now addressing the issue of who should sit on the board. The original ordinance that created the utility board said the mayor would appoint the board members. This original proposal
was eventually replaced by an agreement whereby the community will elect the board members. The first election for board members is scheduled for fall 2000.

The desire to create a utility board in Kwethluk was the catalyst for a community debate about how residents wanted their utility managed and who they wanted to manage it. This discussion helped settle many issues that needed to be resolved before they could proceed to address other problems.

- **Nightmunte** created a utility board as part of its pilot project. Stipends for board members were partially paid with O&M project funds. The utility board consists of two members from the traditional tribal council, two from the city council, two from the community at large, and one from the high school. The board started meeting in March 1999 and took over management of the utility. Project phone logs roughly one year later document some discussion about adjusting the stipends for the board members. Unfortunately, there is not much information in the written record about the board’s activities.

- **Kobuk** originally planned to create a utility board. However, due to the small size of Kobuk, the council decided it would oversee the operation and maintenance of the utility until the responsibilities became too much.

**Utility Manager**

Utility managers often generated a community focus and attention on utilities that did not exist before. Many of the pilot O&M projects paid for the time of existing utility managers or allowed communities to hire a utility manager. Having someone actively monitoring and tracking the utilities helped in nearly all the communities that hired utility managers. However, the dilemma in many communities is how to pay for the utility manager without the funds the O&M project provided.

- **In Hughes**, the utility manager was so outstandingly effective in her job that she was awarded the 1998 Utility Manager of the Year award from TCC/OEH. She was invaluable to her community in carrying through the project. The community currently has the finances to continue funding the position.

- **Kobuk** hired two utility managers during the course of the project. They both received utility management training and were effective in managing the utility. They both observed that having one person specifically responsible for managing the utility helped the community. It alleviated a lot of the work previously done by the city staff. With some of their time freed up, city staff could spend time writing grants and continuing their training. There are plans and funds to continue Kobuk’s utility manager position, but residents are thinking of combing the utility manager position with another position to make a single, full-time position.

- **Kwethluk** benefited from having a utility manager. The project has helped to departmentalize the watering point, as well as the sanitation and laundry facilities, away from the city administration. Before the project, the city manager addressed problems with the sanitation services and laundromat. It was a bit of a headache for the city manager to be distracted by these issues. Having a utility manager has helped focus attention on water and sanitation issues.
However, getting to this point was a struggle. The city hired one utility manager who stayed for less than a year. Soon after he completed utility management training, he quit the job because the city delayed passing the ordinance to create the utility board.\footnote{He had previously been the city administrator, and that position was not filled after he became the utility manager. He was in still doing the administrator's job while he was the utility manager, so the city lost both functions at once.}

About a month after the first manager quit, the board passed the ordinance and nine months later hired a new utility manager. The pilot O&M grant paid for the utility manager’s salary, and as of spring 2000, the city was not certain it would have the funding to continue paying his salary. Because the new utility commission is a non-profit corporation, Kwethluk was investigating whether it could get a permit to establish a pull-tab operation, as a means of raising funds.

- **Saint Michael** paid part of the utility manager’s wages with project funds. The utility manager said having this funding helped her focus on operation and maintenance. It also gave her the time to get finances more in order.

### Community Education

Community education about utility rates and the operation of the utility became much more prevalent in Phase III than in Phase II. Many of the Phase III communities planned some form of education, such as handbooks, manuals, door-to-door contact, community meetings, and notices in newsletters.

Customer education had several different motivations. In some cases, the plan was to educate customers so they would help with preventive maintenance and reduce long-run repair costs. In other cases, utilities wanted to educate customers about particular financial difficulties so they understood the importance of paying their bills. In other cases, education was focused on keeping customers informed about the ongoing operation of the utility (such as hours or operation or rate changes). In nearly all these cases, the applications or work plans for the O&M projects anticipated that more educated customers would help create more support for sanitation systems.

The success of public education efforts, as well as their effectiveness in creating long-term changes, varied by community. This section offers some examples of the most successful community education efforts.

#### Homeowner’s Manual

Several communities included development of a homeowner’s manual in their work plans. Often the manuals were delayed because they were not the highest priority item in the work plan or because construction of a new water and sanitation project was not yet complete. A few communities completed such manuals and may offer examples useful to others.

- **Deering:** This homeowner’s manual, describing how to care for and maintain the household plumbing, went fairly well. Deering had a public meeting to go over the manual; about a quarter of the homeowners now use the manual. Unfortunately, there are not many other details in the written record about this apparently successful manual.

- **Gulkana:** Part of Gulkana’s work plan was to develop a homeowner’s manual explaining the proper care and basic maintenance of the household wastewater and drinking water.
systems. The manual was to help homeowners maintain their household plumbing and become self-sufficient with repairs, with an emphasis on winterization and preventing freeze-ups. Gulkana has completed the homeowner’s manual and plan to deliver it door to door. It was clear from descriptions of project participants in the closeout interview that they had thought carefully about how they could use the manual to reach a broad audience and get the community more involved in maintaining the system. The manual is loosely formatted in a three-ring binder, so it can easily be appended with new tips and suggestions. It incorporates pictures and visual descriptions, to make it more accessible to elders in the village.

- **Kaltag:** As of early 2000, Kaltag was still in the process of developing a homeowner’s manual. The manual will describe how preventive maintenance would save homeowners’ money. Community leaders would like to spell out the costs of problems left unrepaired, so homeowners get a better appreciation of why it is important to take care of the system in their homes. The homeowner’s manual would also include tips on troubleshooting problems and maintaining furnaces to prevent freeze-ups, as well as a list of supplies, where to get parts, suggestions for preventive maintenance that saves money, and estimates of the cost of repairs for the homeowner and the city.

Most of these communities started writing their homeowner’s manuals by collecting examples of manuals from other communities. It might be useful to develop a list or gather a collection of these manuals into a library that is accessible to communities and support agencies.

**Customer Use Agreements**

Many work plans called for developing customer use agreements that would spell out the responsibilities of the city and the homeowners. The agreement are a form of customer education, because they lay out who would be responsible for repairs, how much they would cost, and what the homeowner’s responsibilities are for maintaining the system and paying fees.

In several communities, the customer use agreements were not signed because there were delays in completing the construction of the new system. In other cases, the agreements were not signed because there was still some uncertainty about who—the contractor, the homeowner, or the city—would be responsible for repairs to the new system.

Examples from several communities offer some insights, but there were too few communities implementing customer use agreements to draw general conclusions about this particular activity.

- **Kobuk:** In Kobuk, city employees went door-to-door to educate homeowners about the new utility ordinance, customer agreement, and use of the system. Project participants said this door-to-door contact and community education proved very useful for improving collections. They explained to homeowners why they needed spare parts on hand to make repairs. The homeowners got a better understanding of the need for emergency funds. It also helped for them to explain to homeowners that the money they were collecting would be used for operation and maintenance of the utility and not anything else. Because of these community education efforts, customers understand better why they need to pay on time so the city can keep up the system and pay for the operation and maintenance. As a result, people have been more forthcoming with their payments. Collections have improved, except in the case of emergencies or when
customers are gone for a month or two. Aside from these exceptions, most customers make timely payments.

- **Deering:** As part of its pilot O&M project, Deering developed a draft use agreement to clarify homeowners’ responsibilities for maintaining the new sanitation system. Not all homeowners have signed the agreement, because customers are concerned about repairs and replacement parts associated with the new system. There are some design problems that many customers would like resolved before they sign the agreement. The city council hopes to have a final homeowner’s agreement signed by all homeowners this fall (2000), because the one-year warranty period on the new system will have expired by then.

- **Gulkana:** This community is also currently developing a customer use agreement spelling out customers’ responsibilities for paying fees and maintaining the system in their homes. The agreement will tell customers that the city will cut off services if they do not pay their bills on time. The aim of the agreement is to increase collections so the city has enough money set aside for preventive maintenance. The RMWs and mentor community have been helping draw up the agreement. They plan to get a resolution from the village council supporting the agreement and then take a copy of the new homeowner’s manual and the user’s agreement door-to-door to gather signatures.

- **Shishmaref:** This community wanted to develop a customer use agreement for the new FTHS, spelling out the customer’s and the city’s roles and responsibilities for operation and maintenance. A customer use agreement was developed but not all homeowners signed it. Design flaws in the system made some customers reluctant to sign the agreement. The contractor needed to iron out these problems before the city and customers could agree on who would be responsible for ongoing maintenance.

- **Saint Michael:** The planned homeowner’s manual and customer use agreement were delayed because the new system was not yet completed. When the new water and sewer system is completed, the community plans to send homeowners an information packet, including a customer use agreement.

**Newsletters**

Another way communities provided education was through public notices in newsletters. Kaltag ran notices in the local newsletter, providing tips on how to conserve water and prevent freeze up. Kaltag’s water operator wrote special winter maintenance tips for the newsletter. Kwethluk used community newsletter to describe different aspects of the water and sewer utility each month. In particular, the mayor tried to explain the sales tax expenditures for support of local sanitation services. In addition, the newsletter has also included notices from the city and the utility commission about washer and dryer rates and washeteria hours; other notices let community residents know how their taxes were being spent.

**Personal Contact**

One of the most effective ways of community education during the project was personal contact—most commonly, city staffers going door-to-door to meet and talk with homeowners. As already mentioned, Kobuk sent employees door-to-door to explain new ordinances, the user agreement, and use of the system. In Kaltag, the water operator became well known for going door-to-door to get to know the problems and needs of customers. In both these instances, community leaders emphasized personal contact with the customers as one of the most effective
ways to learn about customers’ problems customers and explain to them new responsibilities, new sanitation systems, or fee changes.

Other Community Education

Communities experimented with a couple other forms of community education that may be useful to others.

- **In Kaltag**, the city staff felt that the training they received helped them improve community education. The things they learned about their system made it much easier to communicate to the community the importance of preventive maintenance in their homes. They could explain how much repairs would cost, why the homeowners needed to pay additional monthly fees for a new system, and how their money would be spent. In the past, the city had taken it for granted that customers were just “supposed” to pay their bills. With a better appreciation of their system, the city staff was able to explain to customers why it was in their interest to pay and how it benefited them personally.

- **Shishmaref** had the idea of combining community education and a customer use agreement in a customer survey. The survey would ask questions about customer satisfaction and also request that customers abide by the city’s rules for running the washeteria equipment and be responsible for helping repair and maintain the equipment. The city started this survey but has not completed it. Community leaders learned that other communities conducted similar surveys that did not generate much interest or response. Few people took the time to fill the survey out. Before they did a similar survey in Shishmaref, city staff wanted to find ways that would encourage more people to fill it out.
Effectiveness of Mentorship

One of the new activities added during Phase III was the mentor or partner community. The original idea was for the communities to develop relationships with other communities that had previous experience with O&M pilot projects or had some other experience that could benefit the new project communities. ANHB hoped that the mentor communities could largely substitute for ANHB staff, providing guidance, support, and advice during the course of the project. Mentors would visit the new project communities, help them structure work plans and budgets, follow up with phone calls, assist with quarterly reports and self-evaluation, and offer technical expertise.

The idea of having a mentor program was first presented to the Phase III communities when ANHB staff described the benefits of mentoring and possible ways to select a mentor. Interested communities were then on their own to initiate contact with another community or several communities to investigate whether any would be interested in being a mentor.

This mentor arrangement did not work out as originally envisioned. However, the new project communities did experiment and try different forms of partnerships with other communities. The innovations and variations led to some unforeseen benefits. In this section, we categorize the communities by their success in creating mentoring relationships and describe their experiences in more detail. After looking at all the communities, we summarize the common themes and experiences for all the communities.

Most Successful Mentoring Programs

The communities most successful with the mentor program were Kobuk with its mentor Noorvik, and Kaltag with its mentor Nulato. In both of these cases, community residents visited the mentor community and learned about its system. They used what they learned to improve their own project as well as to encourage long-term changes in their systems.

Kaltag and Nulato

The most successful use of the mentor relationship was between Kaltag and Nulato. During the spring of 1999, after numerous delays and scheduling problems, a group from Kaltag visited their partner community, Nulato. Participants described the trip as educational and interesting. Much more important, it created pride in the group when it returned to Kaltag. The participants reported feeling more like a team, working together to operate and manage an improved water and sanitation system in their community.

Members of the city council, office staff, washeteria attendants, and the water plant operator from Kaltag visited Nulato. In Nulato the water plant operator and the city administrator made an introductory speech and showed the visitors the new laundromat. The group learned a lot from the Nulato water operator about how Nulato operates and maintains its system. The city clerk from Kaltag said that this visit was different from other times Kaltag residents had been to Nulato. Many of them had traveled to Nulato before, but felt like tourists and had never seen the actual workings of the water and sewer system.

The effects of the visit were far more reaching than just learning about Nulato’s sanitation system. The rest of the story emerges when those who went to Nulato looked back on

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6 This section addresses research questions IA and IB5 and IIA-D, as listed in Table 4 in Chapter II.
their experience almost a year later. They found the visit very valuable and particularly emphasized the sense of community and ownership that it created in the group that went on the visit to Nulato. 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’s needs and our goals and it just created a new cohesiveness.

The city clerk liked the sense of community the visit created among Kaltag staff:

We like to think of ourselves as independent, you know. I think it's an Alaskan thing, and more so in the villages, especially when you have village rivalries going on—you're better than somebody else. Then you come to [visit the sanitation plant], 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 here in Kaltag 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.

The primary drawback of the partner community arrangement was the long delay before the visit. The Kaltag staff suggested that putting more structure in the partner agreement might improve it so both communities would know more what to expect from each other.

**Kobuk and Noorvik**

In the first quarter of the project, the utility manager, water plant operator, and mayor of Kobuk visited Noorvik for about two and half days to see Noorvik’s vacuum sewer system and to learn more about Noorvik’s billing system. Their host was the city administrator of Noorvik.

The visiting group considered their trip very interesting and helpful. In particular, the bookkeeper from Kobuk got some ideas on improving billing. Kobuk’s water operator was impressed by Noorvik’s water plant and was able to look over how Noorvik kept maintenance records. He implemented a similar recording system in Kobuk and kept it going.

The visitors invited Noorvik's administrator to visit Kobuk and attempted to schedule a visit, but it never happened due to scheduling conflicts. The other impediment was that Noorvik's administrator didn't provide ANHB with any document—such as a contract, work plan, or budget—to formalize his role in the project. He was never paid for the support he offered.

In the ISER overall interview, the administrator explained that he was happy to assist other communities that needed help, but that he did not want the hassle of making all the transportation arrangements. He said it would have helped if either ANHB or Kobuk had made the travel and scheduling arrangements. He said he would still be available for consultation, if they made the arrangements and if his schedule allowed.

**Moderately Successful Mentoring Programs**

Several other communities developed mentor relationships with other communities. They benefited from those relationships, but the effects were not as long lasting and notable as in Kaltag or Kobuk.
Nightmute and Napaskiak

Individual city administrators—one from Napaskiak and one from Nightmute—developed a mentoring relationship closest to what ANHB originally envisioned. They were in regular contact, with the mentor from Napaskiak offering ongoing technical support and advice to Nightmute about getting the project done. Early on in the project, Nightmute decided on Napaskiak as the partner community. Community residents scheduled a visit to Napaskiak, but it was delayed or postponed due to scheduling conflicts. No visits took place during the project.

The two administrators did have an opportunity to meet when both of them went to Bethel for utility management training. An ANHB staff member noted in his trip logs that this was a very good opportunity for the two to meet and get to know each other.

According to phone logs at ANHB, the representatives of Napaskiak and Nightmute stayed in contact after this initial meeting and discussed various aspects of the project in Nightmute. When the mentor from Napaskiak spoke to ANHB staff, he reported that things were going well in Nightmute and that he knew about their progress on the work plan. He was clearly communicating with Nightmute and discussing the project.

Contacts between the two communities were mostly about technical assistance and grant reporting. The Napaskiak mentor got copies of Nightmute’s progress reports and financial statements. He reviewed them and sent them back to Nightmute. He helped with technical questions about Nightmute’s vacuum haul system, computers, and accounting problems.

This relationship between Nightmute and Napaskiak worked well while the original administrator was in his position at Nightmute. But the mentor relationship seems to have ended when he left his position: those who were administering the grant in Nightmute at the end did not know about the mentor in Napaskiak and could not remember the name of their mentor community in the overall interviews. So while the mentor relationship had many benefits early in the project, the benefits were not sustained after the first manager left and, as a result, were not sustained after the end of the project.

Hughes and Too’gha, Inc. in Tanana

The mentor community arrangement between Hughes and Too’gha, Inc. (the non-profit entity operating the sanitation system in Tanana) was a stumbling block for some time. Hughes made contact with Tanana, but there were repeated delays in putting together the work plan and budget, as well as confusion about what was expected of the partner community.

Because they were not able to put together a mentor relationship as originally intended, these communities revised the work plan to sponsor joint training. Hughes organized joint training for both the Hughes city council and the Tanana city council with a RUBA representative. The training was designed for newly elected council members and included discussions of council responsibilities and differences between first- and second-class cities. Too'gha, Inc. board members and Tanana’s city council participated in training. The budget for the partner community in Hughes’ original work plan was spent on this joint training.

Both communities found the joint training very useful. Ironically, it turned out that some staff at Too'gha were new and were 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 to the job.
From the perspective of the mentor community, the training was also valuable. The utility manager from Tanana said the training helped his utility develop technical and problem-solving skills. He considered it important to get together with others, hash things out, and learn from each other. He said it motivates groups to pitch in and work cooperatively rather than getting mired in personal issues.

**Gulkana and the Copper River Native Association (CRNA)**

Gulkana’s mentor was not a community but rather an organization. The relationship between Gulkana and its mentor, the Copper River Native Association (CRNA), started long before the pilot O&M project. As a result, it is hard to separate how much of the relationship was a result of the pilot project and how much was part of their ongoing relationship. The other confusion about this relationship is that the community perceived getting far less support from the mentor than it wanted, while the mentor believed it helped the community in many ways.

Gulkana had a long-standing relationship with its mentor before the ANHB project. CRNA provides technical and support services for water systems in five villages in the area, including Gulkana. CRNA employs four water operators, all of whom have their OIT-certification in either water treatment or water distribution. Although CRNA does not operate and maintain the water and sewer system in Gulkana, it does provide backup operators.

The village was not completely happy with the frequency of contacts it had with the mentor organization. There was some confusion in the beginning, with the first utility manager apparently under the impression that ANHB and CRNA would be doing much of the work on the budget and work plan for the community. Phone logs show that Regina Renard, the village administrator, did try to contact the mentor, but there were considerable delays in making contact. She elaborated in the closeout interview:

> Well, when we could meet, whenever we did set a date, there was something that had come up from that end. So whenever we did meet, we tried to accomplish things. The village waited for assistance from CRNA, particularly on the homeowner’s manual and agreement, but eventually we sat down on our own and got it done. We waited and we shouldn't have waited, but we did. And we got it done.

The mentor relationship seemed to improve after an important meeting in June 1999 when the RMW, the water operator, the village administrator, an ANH staff member, and a CRNA representative sat down in Gulkana to discuss the project in detail. According to ANHB trip notes, the meeting covered many topics, but most important, it helped define the relationship between Gulkana and CRNA.

In the post-project interviews the community and its mentor assessed the outcomes of the relationship very differently. The village administrator in Gulkana said the primary contribution from CRNA was reviewing the user’s manual and helping develop the homeowner’s agreement. According to her responses in the closeout interview, she believes Gulkana ended up doing most of the work on the manual with only cursory review by CRNA.

The mentor organization took a much broader view of the relationship. CRNA likely included in its assessment many of the ongoing support activities that CRNA had been providing to Gulkana even before the O&M pilot project began. A 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.” He listed numerous support activities, including developing an inventory, designing the homeowner’s manual, providing training and technical support, and coaching and advising the utility manager.

**Least Successful Mentoring Programs**

Two communities did not develop mentor relationships for very different reasons. Wales and Kwethluk were diverted by other tasks and problems in their communities that made the mentor relationships impractical.

**Wales**

Wales did not pursue a mentorship. Early in the project, ANHB talked to a representative of the Indian Health Service about Elim or Gamble as partners for Wales. They considered Elim since Elim’s utility management, billings, and collections well organized. But after that discussion, there are no records of further discussions about a partner community. In an ISER overall interview, the mayor of Wales said Wales did not know about the partner community arrangement.

Part of the problem in Wales was with communication. There were communication breakdowns between Wales and ANHB, as well as within Wales between the utility manager and bookkeeper. This breakdown of communication may partly explain why Wales did not have a mentor. These difficulties are described in more detail in Volume 2 of this report; they had more effects than just on the mentoring task.

**Kwethluk**

Kwethluk did not get a partner community because it was waiting for a utility ordinance to be adopted. The ordinance would have recognized the authority of a utility board and allowed it to contact a mentor community for the project. The city had authorized the utility manager to contact a few villages about partnering early in the project, even though the ordinance had not been passed. The ongoing confusion in the community between the utility manager and the city council over the utility board seems to have distracted Kwethluk from getting a mentor community.

Even though Kwethluk did not have a formal mentor relationship, it did contact other communities to get information and learn from their experiences. For example, it contacted Bethel to ask about rate structures. The community used this information when drafting its ordinance and rate structures. The community did not formalize this contact with a work plan or budget.

**What Did and Did Not Work with Mentor Communities?**

ANHB staffers had hoped the mentor program would allow them to take a more “hands off” approach, with the mentors providing more guidance and direction to communities. Only in the case of Napaskiak mentoring Nightmute did this traditional form of mentoring actually develop. Gulkana received this type of mentoring help from CRNA, but that relationship already existed before the project —so that mentoring cannot be directly attributed to the pilot project.
Even though the mentor communities did not behave as expected, there were several benefits that neither ANHB nor the communities anticipated. In some cases, these unforeseen benefits may help solve operation and maintenance problems.

**Group Visits**

Residents of Kaltag and Kobuk visited their mentor communities. In both instances, the visits were delayed for a long time; however, when they did visit, both groups were pleased and found their experience very helpful. They learned about operations, billing, financial practices, and management issues—information they could take back to their villages. As part of their broader mentor relationship, administrators from Nightmute and Napaskiak, also went through joint training in Bethel and benefited from their meeting.

Face-to-face meetings helped the communities, because they could learn about particular technical problems that might arise. Kaltag residents in particular also found that a group visit galvanized them to take pride in their project. This group identification carried through the rest of the project and helped Kaltag become one of the most successful projects in Phase III.

Other participants in the joint meetings, especially the Noorvik administrator, commented that meeting with others from the community helped them focus on common tasks. It is a way of networking and learning about each other that has long-reaching benefits. Knowing who to call for help in another village will help the next time a water operator needs to ask for advice. Knowing what type of systems other communities have, and what parts they have on hand, will help one community know who to call for suggestions about particular operation and maintenance problems. Learning about other systems and each other creates a network of support among the communities. While the mentoring program did not immediately create the type of support ANHB hoped for, it started the creation of a network that largely did not exist before. Future mentoring programs may consider scheduling visits among communities so they can just discuss what they have in common, rather than trying to fill out entire work plans.

Visits to the mentor community also worked well for the mentors. Several of the mentors commented that part of their difficulty in helping other places was they were already very busy with existing responsibilities in their own villages. When residents of another community came to visit, the mentors could show them around while still being on call to deal with problems. They could continue some operation and maintenance while they demonstrated it to their visitors. It was less disruptive and time consuming to talk with visitors than to travel to another community. It was also less disruptive than trying to find the time to answer phone calls or reply to written reports from another community.

RMWs and RUBAs in the project focus group (discussed in Chapter IV) said that the biggest constraint to mentoring seemed to be that people have so much to do in their own communities. Taking on the task of mentoring another village—and that village’s operations and maintenance project—to the extent that ANHB had hoped was not possible. Visits to the communities got around these problems by concentrating the contact within just a few days and disrupting the mentor’s work as little as possible.

**Joint Training**

This network was strengthened when the communities went through joint training. Both communities then learned some of the same things and in the future will be able to turn to each other with questions. Hughes went through joint training with Tanana’s Too’gha Inc. Nightmute
and Napaskiak attended the same utility management training. Having the same language—the same background—will enable these villages to better communicate about their systems and problems. Providing joint training may be an effective way to start mentor relationships at a slower and more familiar pace. Joint training allows people to meet and discuss common issues about management, operations, or other matters without the expectation that one is going to be a mentor to the other. The mentoring would then happen much more informally.

Adding Another Perspective

Another unforeseen benefit of the mentor relationships was the perspective of the mentors at the close of the projects. These mentors offered another view of the success of the O&M project in communities they mentored. Some of the mentors were able to corroborate and elaborate on what happened in the communities. But sometimes the mentor community knew few details and referred us to the project community for information about project effects.

Regular Contact

Phone logs from those communities that tried to have regular contact (Nightmute with Napaskiak and Gulkana with CRNA) do indicate that they were in touch, offering suggestions and guidance. ISER’s overall interviews also indicate that these communities were in regular contact. Most of the communities, however, did not have regular contact. They struggled with making contact and coming up with some agreement about what they would be doing together.

In all cases, there were long delays while communities figured out what the mentorship arrangement meant. The mentor communities often delayed in getting in touch with each other and following through. There was confusion about who should be doing the budgets and work plans for whom. There seemed to be a general confusion about what was expected of the mentors and what they should be doing when they had regular contact. Simplifying the arrangements and focusing on single visits on particular dates might be more useful.

Potential Changes and Improvements in Mentoring

Specific Tasks

One suggestion to improve future mentor projects was to have one village work with another village on a single specific activity, rather than taking on the role of doing everything with the community, as had been planned in Phase III of this project. The utility manager in Hughes said:

It was hard to get together with the mentor communities. They didn't know what they were expected to do, I guess. [ANHB] could improve it by explaining more on the mentor program and what is expected. Offer different suggestions so maybe [the communities] won't be so hesitant. It seemed to come together when we had a specific activity like workshops.

The RUBAs and RMWs offered the same suggestion in the focus group ISER held (see Chapter IV). They had a new idea for structuring mentor opportunities. As one put it:

I don’t think having somebody sign a contract or an agreement to provide service to another village for a certain amount of time would be as effective as having a pot of discretionary money . . . that you would [use to] encourage communities to mentor and partner with each other. When people [want to get together for a
specific task], make the funds available to them. [For example], if two councils
wanted to get together to discuss utility management there [would be] money to
do that . . . . I think if you had that [discretionary money and] you made it known,
you’d have a lot of mentoring going on and you would have better and more
effective mentoring.

Shorter, Focused Time

Another suggestion was to have mentoring over a shorter time. This is in effect what
happened with the joint training and site visits. The mentors attended one joint training session or
hosted one visit. Their responsibilities for the project extended only as long as the visit or
training.

Role of ANHB

ANHB definitely encouraged the mentor relationship. ANHB phone and trip logs
document many occasions when ANHB staff talked to community representatives about finding
mentors. Once a community found a mentor, ANHB had much less contact with it. ANHB
responded when it needed to administer the grant. Staffers called regularly for follow-ups and to
ask about quarterly reports; they also responded to all inquiries from the communities about the
grant; they worked with the communities to shift funding when needed. However, there are long
gaps of time in some records, indicating that ANHB was trying to give the communities and their
mentors the time and space to administer the projects on their own. We talk more about this
flexibility in the next section. The reason ANHB even considered this flexibility a possibility
was that the communities were to have mentors to guide them in place of ANHB.

But the mentors did not take the place of ANHB. They did not have the expertise,
training, or experience at administering grants. Many of them also did not have the broader view
of what was going on in other communities that ANHB could provide. The mentor communities
had their own unique experiences. It may not have been reasonable to expect them to help with
administering projects in other communities. Rather, they could help with operations and
maintenance problems on a one-on-one basis—for example, a water operator calling another
water operator or a council member calling another for help. This sort of person-to-person
contact (like that observed between administrators from Napaskiak and Nightmute) is hard to
institutionalize and formalize in a contract. It is instead formed by personal contact through
visits, joint training, and shared activities.
Chapter IV. Lessons from the Pilot Program: Agency and Community Views

The O&M pilot program was a demonstration project, in three phases over five years. It involved dozens of small rural communities. ANHB and communities tried a new way of administering small O&M grants, to learn if that change would help communities move toward long-term solutions to rural O&M problems. This chapter describes what agencies that work with sanitation issues in the project communities have to say about the pilot program—and how the project communities themselves assess it, now that it is over.

The first part of this chapter summarizes comments ANHB staff and members of the project’s coordinating committee made at an ISER focus group. The participants talked about what they had learned about administering this type of a program. The second part summarizes the views of the participating communities, as recorded in project closeout interviews, on the effectiveness of the ANHB program overall and what they had learned.

ANHB Focus Group Observations: What Have We Learned?7

In June 2000, the Institute of Social and Economic Research (ISER) led a focus group attended by program staff of the Alaska Native Health Board (ANHB) pilot demonstration project, three members of the project’s coordinating committee, and the ISER evaluation team. Participants discussed what ANHB, the coordinating committee, and ISER had learned about program design and implementation over the five years of this project. Participants were asked what they felt was important to pass on to future program managers. For any given program element, they were asked to discuss what was well designed; what could be improved on; and what had been learned. Specifically, they discussed:

- Work plans—purpose, process, product, and accountability
- Flexibility
- Partnership, mentorship, and community involvement
- Role of ANHB staff
- Project coordinating committee
- Evaluation

Project Work Plans

Purpose of Work Plans

Work plans were key elements for planning, monitoring, accountability, and evaluation in each of the community demonstration projects. Once completed, the work plan became the scope of work and part of the written contract between ANHB and the community. The plan for each community identified needed improvements in management, operations, and maintenance of local water and sanitation systems. To meet those needs, the plans listed tasks and activities to be accomplished over a 12-month period. Each community then determined how much money it

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7 This discussion addresses, from the agency perspective, research questions IA and IB3-5 (from Table 4, Chapter II) and questions IIB-D, with respect to the administering agency.
would need to accomplish the work plan goals. ANHB and each community then drew up a budget showing the level of ANHB demonstration grant funds and the community contribution.

**Work Plan Process**

The work plan process began with a field visit by an ANHB staff person or consultant, who helped community members lay out how they wanted to improve water and sewer O&M. Initially the community might produce a long list of issues or needs for water and sanitation improvements, but ANHB staffers helped community members narrow the list down to produce the objectives, tasks, and timeline described in the work plan. Often the timeline represented the “best hope” of community residents about what they could accomplish in a given time. But both community residents and ANHB staff recognized that village life is dynamic, with the potential for unpredictable weather and subsistence activities to affect the program timeline. During the course of the project, economic disasters like poor salmon runs and devastating weather greatly affected some villages’ O&M projects.

The process of developing the work plan and budget worked best when the same community residents who had submitted the application to ANHB also met with the ANHB staffer during the initial field visit. It also helped when the community members who would ultimately be involved with O&M activities were also there.

The process did not work as well in communities where there was a lot of turnover—when, for example, the person who had submitted the application was gone—had either left the job or left the community—before the ANHB staffer’s initial field visit. Other problems arose when the community residents who met with ANHB and helped develop the work plan were gone a few months later. This turnover often led to the community as a whole not being well informed about the project or not invested in the work plan. As one focus group participant observed:

> If you only work with one person to develop the work plan and one person to implement the activities and the project, then the outcomes of the project aren’t as far reaching for the whole community. Whereas, if you work with a number of people, there’s more people that [remember] putting the work plan together, so even if you have turnover in a position or two, you have other people that provide some consistency.

ANHB staffers did not insist on certain people being at the initial field visit, because they felt it would hinder the project by forcing the village to comply with an outside request. As one focus group participant noted, “[Allowing the community to decide who would meet with the ANHB person during the initial field visit], worked for the most part, but in some cases it didn’t due to the turnover.”

**Work Plan Product**

Community residents generally liked the structure of the work plans, particularly during project implementation, because activities were linked to outcomes. Focus group participants also said future programs should tie the budget to tasks and link the disbursement of funds to the completion of these tasks. The ANHB project budgets were line item. ANHB initially advanced a portion of the funds to get the projects started, then made two disbursements after it received quarterly reports, and made the final disbursements contingent on the communities’ completion
of the closeout paperwork. Some communities were able to accomplish multiple tasks in different areas—such as community education or operator training. Other communities required lots of effort to complete one task in their work plans. Also, some communities could get a lot of things done quickly and others needed extensions. Making disbursements contingent on completion of tasks would improve administration of the projects.

**Accountability for Work Plans**

The focus group discussed two kinds of accountability for the project. The first is regulatory and financial accountability—that is, accountability to the federal government as the funding agency for the ANHB project. This accountability is often discussed in terms of grant management requirements. The second form of accountability is the community’s accountability to itself for accomplishing the project activities and goals.

**Regulatory and Financial Accountability**

*Multiple Funding Sources*

There are several sources of EPA funding available to villages. Often these are small projects administered either directly by the EPA or through other organizations. Many of the smaller villages have few people with the skills or the desire to keep up with the reporting required under most federally funded projects. As a focus group participant pointed out:

> In fact some communities have decided not to take grants . . . because it wasn’t doing [anything to substantially help the community]…They wade through [the grant requirements] and put [so much] energy and effort into just trying to keep up with the accountability and reporting that they don’t get as much out of the grant [as originally intended].

It appears that the federal government’s concept of financial accountability and the accounting system, when required of small villages, eventually works counter to the idea that by taking on these federal grants the villages are building capacity to meet the grant management and reporting requirements.

*Grant Management and Reporting Requirements*

Federal funds have some fairly stringent grant management and reporting requirements. Grant recipients must report to the funding source how the money was used and what was accomplished. EPA funding was provided to ANHB for the village O&M projects. As a focus group member described it:

> …The villages receiving the funds became sub-recipients of federal grants. There was a certain level of accountability that the village had in reporting the way the money was spent and how [it accomplished certain activities]. That all becomes part of the accountability factor and whether or not [the community has] accomplished what it set out to do.

The ANHB project staff recognized the need to meet the EPA reporting requirements. Yet they were also sensitive to the fact that many villages could not take full advantage of this funding opportunity if it were administered the way federally funded projects have traditionally been administered. The ANHB staff learned that to make it easier for the villages to concentrate
on the O&M projects, ANHB staff had to take on more of the administrative responsibility and (therefore accountability). As one staffer described it:

If you’re going to provide [a] participatory approach and outreach . . . when funds go directly to the villages and they have to account for them, a lot of the administrative responsibility then falls back to the [funding] organization. And it takes a lot of work to do that . . . . In fact, to the point where there were times when I was out in villages for a day or two actually going through financial records helping people to make copies and understand the budget.

I know very few programs [like that], other than the RUBA program, and that's their primary responsibility to make that kind of effort. If the money goes directly to the village, then it's the village's responsibility to report back and account for those funds, and if they can't then there are penalties they can get. Whereas in [the O&M] project, when that happened we spent more of our time, administratively, to get out and engage the community and try to assist them with producing that information so that we could all comply with these requirements. [This was] resource intensive . . . . I don't know any way to get around that, other than to know that if you're going to engage your communities in this way that you take on that added responsibility and you plan for that administratively. It's really important to know that, otherwise what happens is, like us, [you] get blindsided a little bit. We could not get to everybody in the timely manner that we had hoped to do and we were caught short on our project management.

Requirement for Written Reports

Another issue in accountability was that written reports were required. A coordinating committee member at the focus group pointed out that many people do not feel as comfortable with writing as with speaking. The group suggested that it might be useful to try to allow oral reporting—and to record it for the reporting process. Determining how to do that will require additional consideration and discussion.

This group had a long discussion about the descriptive, rich detail found in the closeout interviews (an oral reporting format) as compared with the content of the quarterly reports (a written format). Interviews and telephone contact records provided broad-based information on the progress of the projects. ANHB staff at the focus group proposed a process to link the work plan more closely with the quarterly report, and to change the quarterly report to incorporate an oral format as well as the written reporting of financial information.

Accountability to the Community

The final level of accountability is the community’s accountability to itself—to its own original purposes and goals. The negotiation process (i.e., the field visit to help facilitate community discussions) emphasized getting people in the village to say what they felt was important and how they would be willing to be accountable for a project aimed at improving their water and sanitation systems. The work plan was intended to keep the project focused on meeting the objectives and tasks communities identified.

One of the ANHB project managers noted that when some one in a village told him there was a problem with the work plan and that it needed to be changed, that represented
accountability of the community residents to themselves: the community member identified a problem and talked about an action to address it. The ANHB manager went on to say “. . . our role is to be flexible enough to accommodate that kind of process so that people can be accountable for the things that are important.” Ultimately, it seems that ANHB staff felt their role was “to provide enough buffer between them [the village] and outside regulatory and financial accountability. To be essentially the buffer, to take on some of the responsibility, take some of the weight off their shoulders.”

Project Flexibility

The focus group agreed that a project like this has to be able to adjust to what the community residents see as their needs and what they want to do. If not, the project would risk forcing the community to do things simply to keep a funding agency satisfied. Knowing right up front that they could extend the project if they needed to helped communities make better use of the funds. Villages did not just try to spend the money before the end of the grant period.

Flexibility in Revising Activities and Timelines

The flexibility ANHB program staff showed in revising work plan activities, timelines, and budgets significantly helped communities complete their O&M projects. One focus group member observed:

You have to be able to adjust to what people perceive as their needs and what they want to do, or you risk forcing people, at certain times, to just comply with what you think they should do. Having flexibility to adjust work plan activities and budgets was critical . . .

But although community residents appreciated that flexibility, in practice the changes were often difficult to track. Many changes were made informally, over the phone, when ANHB staff called to talk with local people involved with the O&M grant. The work plan was set up so that a task or activity was linked to a timeline, and that structure was not easy to amend. It was difficult to track and keep up with the changes, as one focus group member said,”. . . [other than] drawing lines through [the work plan] and rewriting all of . . . [our] notes." When new people came onto the project, it wasn’t easy for them to get a complete picture of what had happened, what had changed, and what remained to be done.

Another difficulty the focus group noted was that the work plan was separate from the quarterly narrative and the financial reports communities submitted to ANHB. One participant suggested that the work plan and quarterly reports be combined “so it is one document and . . . when a task has been dropped or (changed) . . . the community could just [write on a single document], this task has been dropped or this has been added and just keep running.”

Flexibility in Extending Projects

A lot of the project extensions were related to grant administration. Sometimes the project period had to be officially extended so that funds were not expended outside the grant period. Often the villages let ANHB know when they needed extensions. Sometimes communities needed extensions to recast the work plan or change the timeline. Other times the initiative for extensions came from ANHB:
There were communities that the whole idea of extending the project was [perceived as] a burden. I said, let’s look at what you guys really need to do; we don’t need to do anything on the work plan. If they weren’t asking for an extension, it took one of us to do it. I don’t think there were any [communities] where we said that’s it [we won’t grant an extension]. If the community chose not to do any additional activities we pretty much let them peter out. [The community would say] we don’t want the rest of the money . . . we’re done.

By the middle of the projects, many communities had asked about extensions and they became routine. As time went on, explaining extensions became part of the process of signing partnership agreements with villages, because often this was the time local residents would ask, what if we don’t spend it in a year? ANHB would respond “we frequently extend,” so the village would not be overly concerned about this.

ANHB made the extension process as simple as possible.

When we went through the . . . [extensions] for some communities . . . the extending was seamless. [We knew] something [had] happened in the community, [there had been] a six-month pause and then the contact resumed. Or they would call and say, hey, we’re ready to do that part now. Basically what [the communities] ended up with was $40,000 to spend over two years, but it wasn’t structured like that in the beginning. It was $20,000 with one year of specific tasks. I don’t know how we can incorporate that [simplicity in extending] into the beginning [of the project]. We need a way to let the structure of the project reflect our flexibility and . . . give the communities trust. The money is here. We tell them that it’s not going to go away so don’t do a task if it needs to wait. How do you incorporate that [flexibility]? I mean, we tell them on the site visit, but yet we do the work plan that is a one-year structure.

The focus groups emphasized that project flexibility can be institutionalized—that any project or program can be more flexible and give communities more time. Most project funds come from legislation that provides multi-year funding. Focus group members emphasized that this flexibility needs to be acknowledged and that villages should not be forced into a tighter time frame. If the money can be spent over a longer time, let the community know and work with them on doing so.

**Examples of Flexibility**

The focus group discussed ANHB’s flexibility in developing work plans, budgets and timelines, but did not cite specific examples. To illustrate how ANHB’s flexibility worked in specific instances, we drew a few examples from the community project reports in Volume II.
**Example: Budget Flexibility**

The most common type of budget reallocation was spending more money on parts and equipment for much-needed repairs. For example, during the first part of its project, Wales used some of its O&M money to buy two or three new washers, a boiler for the washeteria, and other parts and equipment. As the project progressed, the RMW discussed the critical need for a pump for pumping sludge from the septic tanks of the few buildings with water hook-ups. This pump was not on the list of equipment included in the grant. ANHB discussed the reallocation of funds and authorized purchase of the pump.

Later in the project, the community was very concerned about the health hazard posed by leaking honey bucket bins. At the time, the snow was melting and kids were playing outside near those leaking bins. But if Wales bought new bins, it would also need a new trailer, because the new bins would not fit in the existing trailer. The community worked with ANHB to reallocate funds for the bins and trailer. With the help of PHS, Wales acquired the trailer, but as of mid-2000 it is still waiting for the bins.

**Example: Time Flexibility**

Nearly all the communities in Phase II and Phase III requested and received extensions for their projects. There were many reasons why the projects took longer than expected, but the two most common were delays in construction of new water and sanitation facilities and delays in getting needed local government consensus and action.

**Construction Delays**

Many of the pilot O&M projects were geared toward managing, operating and maintaining new water and sanitation systems coming on line. When construction of the new projects slowed for any number of reasons, some of the pilot project activities stalled. Since communities had the flexibility to extend the times of the project, they could wait until construction was finished and then complete the pilot project tasks. Without this flexibility to defer work on tasks until later, several projects would have been stymied by construction delays.

In Deering, construction of the new system was delayed considerably due to an archaeological find. This find delayed not only sanitation system construction but also the pilot O&M project. Much of the effort of city staff shifted to dealing with this archaeological find, which demanded more attention than the community could have anticipated when it applied for the ANHB grant. Deering requested and received extensions so it could complete project tasks after it had dealt with the archaeological find and construction on the new system had resumed.

Shishmaref prepared its finances and got training to get ready to take over its new flush tank haul system (FTHS). Because of persistent repair problems and design flaws in the FTHS, the city could not devote the attention it wanted to the pilot O&M project. Shishmaref received several extensions, as well as funding, in both Phase I and Phase II of the program. These extensions and continued funding gave the community time to resolve most of the problems with the FTHS and to complete its pilot O&M project work plan.

**Delays in Government Action**

Another common delay was getting needed local government action and community consensus. For some projects to proceed, the local city or tribal councils needed to pass ordinances, create utility boards, or decide how to raise revenues. In other cases, the local governing bodies needed more time to learn about the utility system finances and operations before they could make decisions. These actions, decisions, and learning by local governments
took time. When they took longer than expected, the flexibility of the pilot O&M grants let communities request extra time.

In Hughes, for example, the city clerk commented that the community needed the extra time to educate the city council on the water and sanitation system: “It took almost a whole year for the council to get a basic understanding of the system. [We were figuring out how to] administer the system and make policies and ordinances regarding a water and sewer system that we had no understanding of.” She suggested that two years might be a better time period for pilot O&M projects, since two years would give communities time to learn about their water and sanitation systems.

Kwethluk worked for about a year to come up with a community consensus on who should manage its utility system. The original work plan called for creating a utility board. The city council delayed in creating the needed ordinance for months. Even after the ordinance was passed, the community continued discussing whether the city or the tribal government should manage the utility.

Eventually, Kwethluk created a utility board to manage the new non-profit utility commission. At the close of the project the community was still debating who should actually sit on the board. While Kwethluk 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 the responsibility for the system from the city to the utility board.

Having the flexibility to request extensions gave Kwethluk the time it needed to have a constructive debate about management of its utility. Even with these extensions, Kwethluk had not spent all the funds for its project by early 2000. The community would have benefited if there had been further extensions (which were not possible in the final year of the program).

**Partnership, Mentorship, and Community Involvement**

**Partnerships**

Partnerships are part of the participatory process used throughout the ANHB project, and they were included in each community’s project agreement. Focus group participants agreed that all the agencies providing services to villages in an area need to be involved in this process. The group also said that a good way to encourage partnership is simply talking to each other:

Partner agencies and communities have to be informed and we’ve learned ways to do that. [However] . . . there’s no better way to do that than to just get on the phone and talk to somebody.

**Mentorship**

Mentorship was the key new element introduced in the third phase of the O&M demonstration project, as discussed in Chapter III. Focus group participants cited several things the project had shown about communities mentoring other communities in O&M projects:

- Money didn’t seem to make any difference in motivating communities to be mentors.
- People would naturally mentor others when and if they had the time.
• The idea that mentors would assist other villages with their administrative burden (accountability) was not realistic.

• The biggest constraint to mentoring seemed to be that people have so much to do in their own communities. It was not possible for community residents to take on the task of mentoring another village—and that village’s operations and maintenance project—to the extent ANHB had hoped for.

A focus group suggestion to improve future mentoring projects was to have one village work with another village on a single specific activity, rather than to try to do everything with the community, as ANHB had hoped for in the third phase of this project. Also, the group suggested that mentoring over a shorter period would be better and just as useful as trying to mentor over a longer period. The focus group had a new idea for structuring mentor opportunities:

I don’t think having somebody sign a contract or an agreement to provide service to another village for a certain amount of time would be as effective as . . . having a pot of discretionary money . . . that you would [use to] encourage communities to mentor and partner with each other. When people [want to get together], make the funds available to them . . . [For example], if the [community] councils wanted to get together to discuss utility management, there [would be] money to bring the council [from one village] over to [another] village. I think if you had that [discretionary money] and you made it known, you’d have a lot of better and more effective mentoring.

Finally, ANHB staff was probably a key player in mentoring throughout the five years of the project, by providing information and referral among communities. ANHB staff knew the work plans and projects in each community and would let one community know where it could find help from another community doing or having completed a similar activity. For example, they would let a village that was planning to write a homeowner’s manual know which of the communities had already completed manuals. They provided names and telephone numbers to encourage contact between communities. There was no means of documenting this type of information sharing, but we know it went on throughout the five years of the project.8

Community Involvement

Focus group participants reported that the more community residents took part in applying for the grant and developing the work plan, the more likely that the planned activities would be completed and the less likely that turnover would impede the project.

Role of ANHB Staff in Project

The focus group talked about the role ANHB staff had played through field visits, telephone support, quarterly reports, and closeout interviews. ANHB also used all these activities to help monitor the projects.

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8 Sometimes ANHB staff did note this information sharing in telephone logs. They also invited project participants to share project success stories during conferences.
ANHB Field Visits

During their first field visits, ANHB staff helped communities develop their work plans. While the projects were underway, ANHB staff made at least one and often two more visits to each village; in a few cases, they visited more than twice. These additional visits were for monitoring and providing technical support as needed. What made field visits useful throughout the pilot program was the quality of the interactions ANHB staff had with community residents. As one staffer observed:

It’s not just a matter of how many visits you make, it’s a matter of the quality of the visits, the amount of time you spend, the number of people that you come in contact with, your availability, your interest in being available to the village . . . and whether or not you have…sincerity [and] respect for the village.

ANHB Telephone Support

During telephone calls to the communities, the ANHB program staff encouraged and supported communities to help keep them on track with their work plans. ANHB listened to what the villages said were problems and what they needed to do to accomplish their work plans. Based on the comments of the focus group participants, it seems that the telephone contact records were key in documenting events in the community that affected the implementation of the projects, establishing the context in which the operations and maintenance projects were carried out.

Quarterly Reports to ANHB

The quarterly reports were developed to meet grant management requirements and to provide information to ANHB about progress on the work plan. They were meant to provide a process to help the villages develop analytical skills. The ANHB staff’s role was to review the reports and provide feedback on the reported activities.

But ANHB staff came to realize that these reports were not effective in helping the communities build their analytical skills, and they gave a great deal of thought as to how the reports, and the process for their completion, could be revised to make them more useful—to ANHB and to the communities. We talked about their suggestions for change in the earlier section, Work Plan Product.

ANHB Closeout Interviews

Initially, the role of ANHB staff in closeout interviews was completing data collection for evaluation of the projects. But the staff role expanded to helping the villages understand the extent of their accomplishments with these projects.

The focus group discussed broad characteristics of effective project management staff, including:

- Attributes of those who do well in projects with a participatory process
- Education role of management staff
- Flexibility
ANHB Staff Skills

Management staffs on projects like these need to be hired or trained to engage local residents, particularly in cross-cultural settings. One focus group member cited things that are absolutely essential: “respect, patience, flexibility, and trust.” Focus group members pointed out that patience is not something federal agencies typically see as a premium when working with communities. People are under tremendous pressure to get projects done so they can move on to the next project.

To support a given project, local residents need a reason or an explanation they can relate to. The role of the project staff is to educate—as one focus group member put it, “to lead by example. I know that seems trite to say, but, the more we provide information to people . . . the better.” The focus group noted that a person who is sincere, respectful, and genuinely interested in improving the village’s ability to manage its water and sanitation system stands a much better chance of engaging local residents.

Role of Project Coordinating Committee

The project coordinating committee was a reservoir of expertise and acted as a consulting group throughout the project. When the project began in 1995, the committee had a lot of say about the research design for the data collection, and it provided feedback on some of the data collection instruments.

The committee also had a very active role in determining the direction and implementation of the project. It helped identify the program criteria and the objectives. It screened grant applications to establish priorities for selecting projects for each phase. The coordinating committee provided feedback on the summary reports. Committee members looked at the information that was collected and the write-up. Their review provided the fine-tuning for the report and was incorporated in the reports.

Focus group members noted that in the coordinating committee everyone was open to learning. That there were no agency-based agendas was remarkable. The committee served as an opportunity for people working in different areas of operations and maintenance to get together. The focus group observed:

There was learning and communication going on with the coordinating committee and communication back to the program communities about what [had been] learned. . . . [The coordinating committee was] a mirror of the evolution in thinking and of the learning process and changing focus [during the project] . . . it was a mirror of the evolution of thinking in the larger policy community about [improving the management, operations and maintenance in water and sanitation in rural Alaska].

Role of Project Evaluation

The role of evaluation in this [project] has been . . . the learning process, [throughout the] entire five years, regardless of how implementation changed. . . . The product [of the evaluation] is the learning that has gone on in the process of doing [the evaluation].
For EPA, ANHB, the coordinating committee, and ISER, the project focus was on learning. A focus group member pointed out that the evaluation “provided others (for example, members of the coordinating committee) with learning that allowed them to take a better look at their own programs.” It gave them a more knowledgeable evaluator to call on—and gave the evaluator a chance to increase its capacity for evaluating sanitation projects.

One participant asked, “Who else is taking advantage [of this evaluation]? . . . Look at your own program and some of the self-evaluating you’ve done of your own program . . . . I think that maybe some of the ways you look at your own data might have come from—or at least been stimulated somewhat by—the discussions that [came from] being involved in this project.”
Evaluation of Program by Phase II and III Communities

Administrators in each of the seven Phase III communities completed an overall project evaluation—by telephone—with ISER, shortly after ANHB closed out each community project. In addition, administrators in four Phase II communities, Deering, Nunapitchuk, Saint Michael, and Shishmaref, also completed overall evaluations with ISER. In this section we summarize the administrators’ views on the effectiveness of the O&M demonstration project.

Did the ANHB Program Help?

When asked if the ANHB demonstration grant program “helped their community make long-term improvements in sanitation operation and maintenance,” administrators from all Phase II communities and six of the seven Phase III project communities, said “yes.”

Administrators from the remaining Phase III project community, Wales, felt the ANHB grant did help them make improvements in sanitation operation and maintenance, but they were reluctant to characterize these improvements as long term. Throughout the course of the grant, Wales had difficulty with communication and complying with ANHB reporting and record-keeping requirements. By the time the grant ended, Wales had not fulfilled its part of the grant requirements, and had only used half its ANHB funding. The unfortunate result was that Wales was required to return the unspent portion of grant funds.

How Did the Program Help?

When we asked administrators “How did the ANHB grant program help you?” their unanimous response was that financial support for community projects was the most valuable component of the program. Rural communities are small and generally do not have a broad economic base to generate money needed to build or maintain large-scale community projects.

While each project community developed its own plan to use the ANHB funds, there were, not surprisingly, several areas of common need. Three needs in particular stand out across nearly all the project communities: (1) acquiring computers, (2) training and certification, and (3) establishing inventories of critical parts and supplies.

Nearly every administrator in both Phase II and Phase III communities mentioned acquiring new computers and upgrading the capacity of older computers as an important use for ANHB funds. All the communities are working to improve their accounting, billing, collection, and reporting systems, and they need an efficient, systematic way to handle their information and incorporate it into community operations.

Administrators frequently mentioned training and certification as another use of ANHB funds. They reported that training their employees to use computers and setting up accounting, billing, and collection systems to keep track of customers’ payments and delinquencies were very important. Communities also used ANHB funds for training water and sewer utility operators, utility managers, utility clerks, administrators, and council members.

Establishing critical inventories of parts, supplies, and tools was the third most frequently mentioned used of the ANHB grant funds. Administrators pointed out how inconvenient, costly,

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9 This section primarily addresses research question IID (see Table 4, Chapter II) from the perspective of the participating communities.
and potentially dangerous it is to wait until something breaks down and then have to order it on an emergency basis. Memories of such experiences were undoubtedly one reason that some administrators chose to acquire a parts inventory with their ANHB funds.

Other uses of ANHB funds included testing water supplies and purchasing ATVs, washers and dryers, and even a boiler for a washeteria.

The second most valuable component of the program, according to village administrators, was ANHB staff support for the project communities. Both Joe Sarcone and Nina Miller were acknowledged at various times throughout the survey for being strongly supportive. Both listened to what people had to say, helped them think through problems they were experiencing, and worked with them to correct those problems.

Administrators praised ANHB staff for making contacts on a regular basis, providing “outstanding staff support and technical assistance,” helping with ideas and suggestions, and being sensitive to individual community needs. The ANHB staff also traveled to a number of villages to better understand local conditions and circumstances and give hands-on assistance. Administrators appreciated that help. Joe Sarcone was particularly instrumental in helping communities develop their mentoring programs. He also met with village councils to address many of their concerns. At these times, he also explained to the councils the need to make sanitation a priority and the importance of rate setting.

ANHB staff also assisted in some unique situations. For example, they helped the community of Deering develop a memorandum of agreement to deal with various agencies who were constructing the village's new sanitation system. While building the new system, contractors uncovered an ancient archaeological site dating back to 800 A.D. Deering wanted to preserve the archaeological integrity of this native historical site, but at the same time wanted to proceed with the construction of its new sanitation system. ANHB provided support and assistance, helping the community navigate through this uncharted territory.

The tribal administrator in Gulkana summed up much of her community’s appreciation for ANHB staff when she said, “Nina Miller was very supportive and helpful to me throughout the project. I am a new administrator, and when I first came on I knew nothing about sanitation. She has helped me to learn everything!”

What Did You Like And How Could The Program Be Better?

When asked what they liked best about the ANHB program, Gulkana administrators responded that they liked being able to acquire an inventory of spare parts and tools all at one time, instead of having to obtain them piecemeal. They also felt that Gulkana's new utility operator was better able to learn his job because he was given the responsibility for ordering all the parts and supplies and then taking an inventory of all the new equipment.

Administrators in Hughes cited simply receiving ANHB funds, which enabled them to do a number of things that they would not otherwise have been able to do.

Kaltag administrators said they liked a number of things about the ANHB program:

First, it gave us a better understanding of our system and its costs. For years the city has been subsidizing the system, and we were really not realistic about how much this would cost. Now the community is paying almost 100% of the cost and maintenance.
Second, it helped create a closer bond with our council and so it was easier to make decisions for the city. Third, our office staff benefited by getting a new computer and computer training. Also it helped the wellhouse operator with parts and inventory and keeping track of tools, water usage, and repairs.

In Kobuk, administrators reported that ANHB funds enabled the council to hire a utility manager rather than just using someone already working for the city. The community also used the funds to obtain computer training for office staff and to get the water plant operator trained and certified.

What the Kwethluk administrator liked best about the program was Nina Miller of ANHB. “Nina Miller helped us by giving her personal time, helping us establish the Kwethluk Utilities Commission. I also liked her level of responsiveness to any request we had.”

Nightmute was quite pleased with its ANHB program but the administrator declined to comment on a favorite feature. Wales liked having the ANHB funding, as well as “being able to decide how to use the money.”

When asked how satisfied they were with the ANHB grant program overall, administrators from five of the Phase III project communities reported being “very satisfied,” while another reported being “satisfied.” Wales, which was required to return the unspent portion of its ANHB funds at the end of the project, said it was “neutral” about the program.

The Phase II communities also spoke of what they liked best about the ANHB program. In Deering, administrators reported that learning to develop a realistic O&M budget was most valuable to them. Before developing the budget, the city was always subsidizing. Now, the city only subsidizes with sales tax and no other revenue. Any remaining sewer debt is billed to customers. Water customers continue to pay on a cash basis.

In Nunapitchuk, the funding itself was what administrators liked best, and they expressed the wish that funding for new projects could continue every year.

Administrators in Saint Michael reported that training was the most valuable part of the ANHB program, particularly training on use of the computer. They learned the Quick Books Pro program to help them keep track of finances, and they developed a recordkeeping system for the washeteria and the water plant, which they found to be very helpful.

In Shishmaref, administrators also noted ANHB’s financial support for training as a very important part of the program. However, they considered the effort of ANHB staff to educate the village council about sanitation issues to be the program's most valuable contribution. The council is now much more aware of the importance of sanitation and how Shishmaref’s system works. In the words of one administrator, “Now that they understand [the system] better they seem to care more, and they make better decisions for the community.”

When asked overall how satisfied they were with the ANHB grant program, administrators from three of the four Phase II communities reported being “very satisfied”, and one reported being “satisfied.”
Would The Community Have Made Changes Without The Grant?

When administrators were asked, “Do you think your community would have made any long-term improvements in operations and maintenance without the ANHB grant program?” none of the Phase II communities felt they would have made changes without the help and support of ANHB. The majority of Phase III communities felt they would have made changes even without the grant program—but they were quick to note that it would have been more difficult and would have taken more time.

In Gulkana the tribal administrator said: “It would have taken us a long time. Years! With this project we were able to get everything at once.”

The city administrator in Hughes remarked: “It would take time and money we did not have. The sooner the utility gets up and running the better it will be in the long run and the less it will have to rely on subsidies from the city.”

The mayor of Kaltag offered these observations: “Eventually we would have learned through trial and error, 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.”

In Kwethluk the tribal administrator and the chairman of the utilities commission offered these insights: “It would have been pretty tough for our community to make advancement without ANHB. We would have looked into other things, but it would have been difficult because we have no economic base. We have to rely on federal transfer of funds. We still want to put the honey bucket in the museum!”

What Have You Learned That Could Help Other Villages?

When asked, “Is there anything your community has learned from this project that might help other villages?” administrators in every village reported that yes, they had. For instance, the tribal administrator in Gulkana recommended:

If other villages have no supply or inventory sheets that they can mark off to keep track they should develop them. It would be helpful, and in the long run save them the money and the grief of having to rush in supplies. Also, communication with different agencies is a good thing. If you need something start calling people. That’s what we did. Go for the O&M project if you have the opportunity!

The city administrator in Hughes reported:

We learned that better policies, an up-to-date billing system, and community education for users help to stabilize the utility financially. The key to success is to keep operators active and keep them trained. Make sure that operators understand their responsibilities.

In Kaltag the mayor commented:

We learned a lot of things. Things like, it is important to take ownership for these services. That helps to make it more
economical, because then people take pride in their system and maintain it better. Also the overall management [is important]. Keeping better track of things, and being better organized, help to control costs. All this knowledge also goes a long way toward preventive maintenance.

The new city administrator in Kobuk reported a number of good things her community learned from having the ANHB project:

1. Coordinate with other agencies that are more knowledgeable in water and sewer, like the RMWs, water plant operators, Alaska Native Tribal Health Consortium, or Village Safe Water program—people who can help you learn what you need to know.
2. Stress to your staff how important it is to be trustworthy. Tell them that there will be audits to track every cent. The council has to be on top of this to hire the right person for the job. Honesty is important!
3. Always have at least two certified water plant operators because they quit and leave town. We also learned that it is good to have an ‘alternate’ for your ‘alternate.’ You may also want to consider an alternate for your manager.
4. Go over your ordinance with the council periodically. [This is] for the benefit of all, but particularly for new council members. We learned that some of ours did not realize about the late fee charges.

In Kwethluk, where three administrators were interviewed via speakerphone, all felt they had learned things from the project. The tribal administrator and former utility manager said, “I’ve learned a lot. The most important aspect is to have a utility board that you can communicate with to help establish policy.” The chairman of the Kwethluk utility commission noted, “It is very important to have good communications. Have the utility manager communicate with the board, the public, and other agencies. That is one of the most important things.” Last, but not least, the Kwethluk utility manager reported one of the most valuable things he had learned was, “The ongoing education is important for both the managers and the community.”

In Nightmute, the new city administrator said he had already learned a number of things from this project that will help his community and keep it prepared:

We need to have the homeowners pre-pay before their tanks are pumped out. I’ve noticed that a number of people are falling behind on their payments and that makes it very difficult to buy needed parts and supplies. We also learned that you need two or three people on the paperwork that is involved to keep up the inventory. Also, keep spare parts and supplies, extra flow jets, and an extra sewage tank.

In Wales, where the project period ended before the project was completed, the mayor felt that her village learned how important it is to have good communication.

In the Phase II project communities, the administrator from Deering felt that her community learned several things from their experience. In particular, when a new system is planned, it is important to have an engineer prepare a detailed operation and maintenance plan, and fully explain that plan to the community, before the system is built. She also recommended
. . . that ANHB be involved with communities right from the beginning. That way, there would be a third party to advise from a different perspective. Review the plan and the design of the system, and review the O&M cost to the city and the consumer, while still looking at quality. [Get] an independent review where they explain the various systems to the community, and explain the various O&M costs.

Administrators in Nunapitchuk said that they had learned it is very important for communities to keep track of their finances. It is also important to record information in the prescribed way, and in a timely manner.

In Saint Michael, administrators reported learning “the importance of developing partnership teams all the way from the village to the state.” They explained this recommendation to their village and the IRA council. They also felt: “when villagers understand the bigger picture it helps [things run more smoothly] at the local level.”

As a result of experiencing some initial start up difficulties, the Shishmaref administrator advised:

Don’t give up! There are people out there who can and will help you when problems arise, or funding is needed. Also, communities need to be more aware of how their utilities are operated and maintained.

Which Programs Help Your Community?

Administrators in every village were quick to respond with praise and appreciation for the many agencies, in addition to ANHB, that helped them improve sanitation in their communities. They believe all the programs are important and necessary, and village administrators noted that each agency has its own particular strength and fills a niche.

Village administrators in both Phase II and Phase III communities reported that the following agencies were very helpful to their communities: the Remote Maintenance Workers (RMWs); the Alaska Native Tribal Health Consortium (ANTHC); the Rural Utility Business Advisors (RUBAs), who are with the Alaska Department of Community and Economic Development (DCED); the U.S. Public Health Service (PHS), Norton Sound Health Corporation (NSHC), the Office of Environmental Health at NSHC, and the Village Safe Water (VSW) program, which is administered by the Alaska Department of Environmental Conservation.

In the words of a Shishmaref administrator:

All of them play a role in how our utility is run. They all have their areas of expertise. They have funds for different things. They all contribute and work together to help our community have better sanitation.

How Can Community Service Be Improved?

The final evaluation question asked of administrators was “How can regional, state, or federal agencies improve their service to your community?”
In the Phase II communities, Deering felt that during planning phases, agencies responsible for building sanitation systems should be required to explain to the community, in detail, what the impacts to the homeowner and consumer will be.

Nunapitchuk administrators felt that it is important for regional, state, and federal agencies to address local needs. They hoped that agencies would provide more funding, but most important, listen to the local people describe their situation, so the projects are tailored to the needs of the individual community.

In Saint Michael, the administrator felt that additional funds would help, but that training people in grant writing was also important. “Training in how to apply for grants, as they are becoming more difficult because of regulation changes. We need to be kept updated on the new regulations.” Agencies were also requested to “decentralize and come closer to the villages.”

The Shishmaref administrator felt that agencies should be aware that a number of programs are necessary to help communities in rural Alaska. All are important. “They can help us get rid of our honey buckets, and make us a happier, healthier village.”

In the Phase III communities, the village of Gulkana wished the state or federal government would prohibit the dumping of RV holding tanks and other waste and toxic materials—including fish waste—in the rivers. Village administrators said, “Fishermen dump RV holding tanks right in the [Gulkana] River, we have seen it! They also dump all their fish waste in the river. The [government] could help us by passing a law to stop this.”

The communities of Hughes and Wales echoed often-heard pleas when they requested more frequent contact, and better communication, with government agencies. One administrator said: “There is not enough contact. I am not talking only about one agency. This is true in general.” Two other suggestions were that to save time most paperwork be exchanged via fax machine, and that agencies invest more time meeting with village councils.

Kobuk and Kwethluk also echoed frequent comments when they requested more funding and training. “We always have a high turnover in the villages because people are moving on, and have often just been waiting here for other jobs to open up in Prudhoe Bay or in Anchorage.” Other suggestions in the same vein included this commentary:

The U.S. government could provide grants and low-interest loans for rural utilities, like through the Department of Agriculture and Rural Development. Many times these agencies are so busy and they have so many communities to work with that they are overworked. They need to have more people so that tribal governments can talk to someone who can help us with our self-determination. It has taken us over 40 years to get this system going and it shouldn’t take that long.

The Kaltag mayor summed it all up in a very positive way when she said:

It is happening already. We are becoming more educated and aware, and understand how important it is to work together, not to provide more services, but to more provide them effectively! At the state and federal level we need to be close to them so together we can create programs that address the way things are here. So many people do not realize what it is like in the villages.
Chapter V: Discussion and Conclusions

Our evaluation of ANHB’s operation and maintenance demonstration grant program draws from multiple data sources. For the individual projects in Phase III, we have project documents, field notes, and phone logs from ANHB; closeout interviews with community administrators conducted by ANHB; overall evaluation interviews with community administrators conducted by ISER; community self-evaluation questionnaires and interviews, pre- and post-project; mentor interviews; and RUBA reports. All these provide a very rich qualitative data set, including three or more independent sources, on each project. We used state-of-the-art methods in qualitative analysis to integrate and distill this information for each community and across all eleven communities in this report.

Major Project Findings

Most of the O&M pilot project communities were successful in improving their long-run capacity to operate and maintain their water and sewer systems.

In the Phases I and II combined, 14 out of 22 communities had some success in improving conditions and capacity to operate and maintain their facilities. The Phase III report found that 10 out of 11 communities made some form of improvements in long-run operation and maintenance. By “success” we do not mean to suggest that their O&M problems have been solved—only that these communities have made some discernible progress in their capacity to manage, operate, and maintain their water and sewer utilities.

It appears that there may have been increasing project success over time. It is hard to say whether this reflects some larger trend in rural Alaska or is idiosyncratic to these groups of communities or this data. It could be some sort of selection bias. For example, perhaps Phase II extended and Phase III communities had some sort of inherent advantages over Phase I and II communities—perhaps they were not similar to begin with. Or the Phase II extended communities had the advantage of more time to work out their problems and complete their projects—or they were extended because they showed promise of success.

The apparent difference over time could also be measurement error. Different analysts at ISER may have read the qualitative record differently. Also, the original Phase II and Phase I communities had the disadvantage of a long time lag between project close and post-project data collection—time and turnover may erode the gains and measures of success.

But for a variety of reasons it could also be true that there is an improving trend. It could be that rural residents are tired of their sanitation problems and are ready to do something about them. It could be that incentives work: the VSW point system for construction grants, which rewards community capacity for O&M, reinforced by the mantra of agency personnel, has focused the attention of rural communities seeking new sanitation facilities. It could also be that the RUBAs and others assisting communities became more sophisticated in leveraging the O&M grant program. It could be that ANHB improved its program delivery over time and was therefore more effective in helping communities. Or it could be that Phase III communities learned a few things, directly or indirectly, from the Phase II communities and their successes. It could be a combination of all these things.

10 Addresses research questions IA and IB (see Table 4, Chapter II.)
11 Shishmaref is counted as Phase II extended in this report.
There was also a trend in project activities toward buying computers and carrying out community education. Only three of fifteen Phase II communities purchased computers and software with their grants, while eight of eleven Phase III and Phase II extended communities purchased computers. Seven of fifteen Phase II communities had some type of community education in their work plans, while eight of eleven Phase II extended and Phase III communities did. Computerization alone offered big improvements in communities’ timeliness, accuracy, and cost efficiency in record keeping, billing and collections, and financial reporting. Better information improved management oversight and decision making. Community education also snowballed as communities learned from each other new strategies for user’s manuals, door-to-door education, newsletters and more.

When administrators were asked if their community would have made long term improvements in O&M without the ANHB grant program, the majority felt they would have, but were quick to note that it would have been more difficult and would have taken longer. One administrator said, “It would have taken us a long time. Years. With this project we were able to get everything at once.” Another commented, “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 major factors for project success were a combination of key people, community support, and agency partners.**

Usually there were one or more key persons who were actively interested in the outcome of a project and took the initiative to make sure project activities were carried out. Without these individual persons, the projects would likely not have been completed. While the initiative of key persons kept the projects going, broad public support was also an important ingredient. City or tribal governments actively supported successful projects. Homeowners assisted with operations and maintenance and helped make the facilities financial viable by paying their fees. More broadly, the community was usually interested and took an active role in ongoing sanitation facility improvements. Successful communities also demonstrated ongoing ability to work effectively with government and non-government agencies and support groups. The representatives from RMW, RUBA, PHS, ANTHC, and others who work in the communities were often cited as crucial contributors to the successful projects.

These findings are similar to our Phase II findings that leadership, commitment, and broad community support were critical ingredients. Conversely, turnover, administrative turmoil, and lack of follow through were the prime obstacles to project success. RUBA focus groups during Phase II drew the same conclusion: strong and continuous community leadership was key to success.

**Activities that were most likely to lead to long-term improvements in O&M included purchasing computers, hiring utility managers, training personnel, and carrying out community education.**

A definitive comparison of long-term outcomes by activity is not possible from the present data set. Still, the data suggest some tentative findings.

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12 Addresses research questions IA and IB5 (see Table 4, Chapter II).
13 Addresses research question IIA.
Seven of eleven communities in the final project phase purchased computers and trained people to use them. The most frequent application was accounting. There was almost universal praise for this use: it was faster, more reliable, more self-explanatory, and gave staff more self-confidence. In some communities, this was the first time a reliable, systematic listing of revenues and expenditures existed. With the improved financial information system, communities could get a handle on whether their systems were paying for themselves. Other communities used the computers to collect and organize data on the costs of operations. Some used this information for rate studies. Computers helped keep track of delinquent accounts and improve collections. They helped the staff generate timely and reliable financial reports for the city councils, thereby improving council oversight and decision making.

The four communities in the final phase that used project funds to hire utility managers all had positive results. Having someone actively monitoring and tracking the utilities improved management. Utility managers generated a community focus and attention on utilities that had not existed before. One of the new utility managers went on to be recognized as Utility Manager of the Year by Tanana Chiefs Conference. However, the dilemma in many communities now is how to pay for the utility manager without the funds the O&M grant provided.

Six of eleven communities taking part in the final phase completed utility management training for their staffs or boards. Training usually had beneficial long-term effects. Utility managers with training could manage systems better. Bookkeepers and clerks trained on computers said they kept better accounts and produced better reports. City or tribal council members who got training in utility or city management said they ran better meetings, asked better questions, and understood more about how they could support the utility. One administrator reported, “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; we went over the organizational chart for the city; we discussed personnel policy. We also went over the utility ordinance and user agreements.” The earlier Phase II report also found that utility management training increased collections significantly.

Ten of the eleven communities included some form of community education activity in their work plan. There was considerable variation, however, in completing this task and in creating long-term changes. The most effective form of community education was personal contact, particularly door-to-door. For example, explaining one-on-one the new utility system, the ordinance, the user agreement, the cost of operations, the cost of repairs, and procedures for in-home maintenance increased collections in Kobuk. Improved information and training for staff and council members helped them be more effective in their role as ambassadors for the utility. Homeowner’s manuals and public notices in newsletters were also popular ways to promote water conservation and winter maintenance and to keep the community informed. These strategies helped homeowners commit to supporting and maintaining their water and sanitation facilities.

While purchasing parts and supplies was a popular activity—undertaken in nine out of eleven communities—by itself it did not improve O&M capacity over time. Only communities that coupled their parts purchases with improvements in their finances, procurement, and inventory procedures realized sustainable benefits.
Communities were glad to share information, but mentor communities did not substitute for ANHB staff. Mentoring and community exchanges had unanticipated benefits.\textsuperscript{14}

Money didn’t seem to make any difference in motivating communities to act as mentors to other communities. People would naturally mentor others when and if they had the time. The biggest constraint to mentoring seemed to be that people had so much to do in their own communities. The hope that mentors would assist other villages with their administrative burden (accountability) was not realistic.

Face-to-face meetings not only helped the participants share information about their systems, it also helped them forge supportive, long-term relationships and adopt new perspectives. Some project participants commented that joint meetings helped them focus on common tasks. Others said getting together to hash things out and learn from each other motivated them to pitch in and work cooperatively rather than getting mired in personal issues. Kaltag residents found that a group visit to tour the facilities in their mentor community galvanized them to take pride in their project. This group identification carried through the rest of the project and helped Kaltag become one of the most successful projects in Phase III.

The innovative mentorship arrangement did not work out as planned, but participants had many suggestions for improving it. Focusing on specific tasks, establishing a shorter mentoring period, or adding more structure could make the mentor arrangement work more effectively.

\textbf{Assessment of the ANHB Program Approach}

In addition to the project outcomes summarized in Chapter III, we have program documents, the reflections of the ANHB staff and coordinating council, and the direct observations of the evaluation team over time for our assessment of the ANHB demonstration approach as a whole. We summarize here several major points raised by focus group participants and supported in the record and community interviews. We highlight the role of program flexibility and supportive staff.

The ANHB emphasis on partnership helped communities learn, compare, and develop networks outside the community.\textsuperscript{15}

One innovation of the program was encouraging communities and agencies to work collectively to find common solutions. The partnership teams (and to a lesser extent, the mentorship arrangement) helped communities interact with other communities and support agencies so that they could learn, compare, and develop networks outside the community. These alliances helped them find examples, common experiences, and solutions to problems that might be applicable across communities. Some communities in particular actively sought help and developed contacts and alliances with others. They started to learn about the common problems shared by a number of communities and saw how lessons could be applied to their communities.

\textsuperscript{14} Addresses research questions IA, IB4, and IIA (see Table 4, Chapter II.)

\textsuperscript{15} Addresses research question IIA.
The ANHB emphasis on autonomy—encouraging communities to make their own decisions—may have contributed to several noticeable changes in the communities. The pilot O&M program was designed to give communities autonomy and flexibility. Rather than imposing its own definitions of problems, requiring completion of very specific tasks, setting strict deadlines, and closely overseeing projects, ANHB instead encouraged communities to take on more responsibility for identifying needs, making plans to address them, and getting the projects done. ANHB offered guidance and support as needed, while encouraging communities to make their own decisions about how to proceed with their projects. This approach was radically more open and flexible than that of other programs aimed at improving rural sanitation—for example, RUBA, RMW, construction, or the former Local Utilities Match Program.

In the end, some project participants were proud of their work and their sanitation systems. They took greater responsibility and made more effort to maintain the system. Other communities emphasized that the council, city staff, and homeowners understood the water and sanitation system better and were more likely to look within the community for solutions rather than outside. Others described how they developed a long-term view of how their water and sewer systems fit into their communities. Participants in one of the most successful communities emphasized that they felt more like a “team”—working together to improve operations and maintenance. These changes in attitudes and perceptions likely helped these communities build capacity to continue operation and maintenance of water and sanitation systems in the long term. Programmatic autonomy may have been one of several factors contributing to these changes.

ANHB’s flexibility in revising work plan activities, timelines, and budgets significantly helped communities complete their O&M projects and improve their long-term capacity for O&M.

The pilot O&M program gave communities a great deal of latitude and support in implementing their projects. Project participants could decide what and how tasks were executed. They could adapt their projects to the changing circumstances in their communities. One focus group member observed, “. . . You have to be able to adjust to what people perceive as their needs and what they want to do, or you risk forcing people, at certain times, to just comply with what you think they should do . . . having flexibility to adjust work plan activities and budgets was critical . . .”

This flexibility took many different forms in individual communities. Flexibility allowed communities to align the projects more closely to their needs and to adapt projects to changing conditions. Some communities excelled at using the autonomy and administrative flexibility built into the program. Others were not prepared to use it to their advantage. In general, those communities with an existing management structure, leadership, community support, and a network of support agencies were able to take on more.

16 Addresses research question IIB.
17 Addresses research question IIB.
Supportive staff and site visits are essential to effective program administration serving rural communities.

After money, community administrators said the most valuable component of the ANHB demonstration grant program was staff support to the project communities. ANHB staff listened to what people in the community had to say, helped them think through the problems they were experiencing, and helped them make plans to correct those problems. ANHB staff was praised for making contacts on a regular basis, providing “outstanding staff support and technical assistance,” helping with ideas and suggestions, and being sensitive to individual community needs. This finding was reinforced when administrators were asked how outside agencies in general could improve their service to communities. The most common response was a request for more frequent contact and better communication; in particular, that agencies invest more time meeting with village councils.

The focus group felt that personal attention and a unique commitment from individual persons at ANHB and other support agencies helped the projects succeed. People who are respectful and genuinely interested in improving a village’s ability to manage its sanitation system stand a better chance of engaging local residents. The quality of the interactions between ANHB and community residents made field visits useful throughout the project.

Learning was the most important program outcome for communities, administrators, and researchers alike.18

One mayor commented that, “We learned a lot of things. Things like, it is important to take ‘ownership’ for these services. That helps to make it more economical, because then people take pride in their system and maintain it better.” Another administrator reported “We learned that better policies, an up-to-date billing system, and community education for users help to stabilize the utility financially. The key to success is to keep operators active and keep them trained. Make sure that operators understand their responsibilities.”

In a third community, three people interviewed via speakerphone all felt they had learned things from the project. A tribal administrator and former utility manager said, “I’ve learned a lot. The most important aspect is to have a utility board that you can communicate with to help establish policy.” The chairman of the utility board added that good communications among the board, the public, and other agencies is one of the most important things. The utility manager emphasized that “on-going education is important for both managers and the community.”

The ANHB staff focus group documented their learning over time as program administrators. Other participants in the focus group noted that in the coordinating committee everyone was open to learning; the committee served as an opportunity for people working in different areas of operations and maintenance to learn together. There was evolution in their collective thinking that reflected back on the program design, the project communities, and the larger policy community. The evaluation component was a major catalyst for reflection and learning by all participants—community and agency alike. The pilot O&M program was designed to give communities great flexibility. ANHB encouraged communities to take on more responsibility for identifying needs, making plans to address them, and getting the projects done.

18 Addresses research question IID.
Where Do We Go From Here?

Identifying the problem gets you halfway to solving it.

John Dewey
U.S. philosopher and educator

This evaluation of ANHB's pilot demonstration project helps take us to the "half way" point of solving problems with operating and maintaining village sanitation systems. It identifies problems in the individual communities, sheds light on the dynamics of village administration and leadership, and—most important—shows how communities themselves can take an important role in solving their unique problems.

Improving operations and maintenance of water and sewer systems in Alaska's villages won't be easy and will require many small solutions rather than a single "one-size-fits-all" solution. Small rural communities face some similar problems in operating and maintaining their sanitation systems, and we've seen (throughout our multi-year evaluation) that some activities may be broadly effective in helping them deal with problems. But we've also seen that no single approach stands out as effective in all of Alaska's diverse villages.

A critical part of ANHB's approach to this demonstration grant was asking communities themselves to identify what they wanted to fix and how they would go about fixing it. Communities like this approach—determining for themselves what needs to be done and then getting it done. We also know that some communities are already applying what they've learned from earlier phases of this project evaluation. So the project has provided practical help, specific to individual communities.

Understanding more about the administration, leadership, and other factors at work in each community can also help agencies better understand how to help solve problems individual communities have with operating and maintaining their sewer and water systems.

We know there is ample room for improvement in the operation, maintenance, administration, and finance of sanitation systems in rural Alaska. We believe what we learned in this evaluation can help policymakers and communities in a number of ways.

Communities, as we noted above, have already used our evaluations of their own projects. The reports have helped them see how they got funding for their utilities and how they spent it; whether they accomplished what they hoped; and how they could do better in the future. This written record is especially useful in communities where there was a great deal of turnover during the course of the project. (Agencies will find the written record useful for the same reason: agency personnel also change.)

Also, ANHB plans to produce a "yearbook" compiling all the ideas and activities from all the demonstration grant communities—and distribute the book so all communities can learn not only from what they did themselves but what other communities did.

Policymakers can also benefit from the wealth of information in our series of evaluation reports. Earlier reports have been widely distributed among federal and state agencies with responsibilities for rural sanitation. EPA, ANHB, and ISER have also presented evaluation findings to various forums, such as the Governor's Council on Rural Sanitation. We have also learned that various state and federal agency personnel find the reports very useful for illustrating the realities of implementing projects in village Alaska.