

Report Index

	<u>Pages</u>
Executive Summary.....	2 - 5
Selection Matrix.....	6
Background.....	7 – 10
Survey Process.....	11 - 13
Survey Observations.....	14 - 17
Village Observations.....	18 - 24
Exhibits:	
Exhibit 1—YKHC’s Site Survey Summary.....	25 - 33
Exhibit 2—Water & Sewer Rates for Selected Alaskan Communities.....	34
Exhibit 3—Sample Scoring Sheet.....	35 - 36

Executive Summary

Alaska Native Tribal Health Consortium (ANTHC) and the Yukon Kuskokwim Health Corporation (YKHC) are partnering to establish a pilot regional utility cooperative (RUC) to assist villages with utility system sustainability. The villages in rural Alaska routinely lack the technical, financial and managerial capacity to operate water and sewer systems. This lack of capacity is attributed to a variety of factors including very remote sites without road access, extremely harsh climates, low service populations, high operator turnover rates and limited technical and financial skills within the communities. Further compounding the problem, are increasingly complex operation requirements mandated by the federal and state government. The result has generally been utility systems that do not meet current regulatory requirements and generally decline in efficiency before eventually failing. The RUC has a primary goal of sustainability of operations for their villages.

This study's goals are: 1) survey villages interested in joining the RUC to determine the financial and operational status of the villages utility systems; 2) establish a baseline for future assessment of the villages that may eventually join the RUC and those that may not; and, 3) propose an assessment matrix to identify those surveyed villages with highest potential to achieve utility sustainability via RUC membership.

YKHC solicited all the villages in their region with an offer to evaluate with the village systems to determine which ones might qualify for acceptance to the RUC.

Approximately, twenty-five villages eventually responded with a resolution inviting the survey. The first twenty villages submitting the resolution were selected for evaluation.

These villages are located throughout YKHC's region and were visited to assess the current utility systems.

The assessment consisted of financial, operational and maintenance components. The financial system component assessment consisted of reviewing relevant, available demographic information from the federal and state government including financial information supplied by the villages to the State of Alaska in the form of certified financial statements. Inquiries were made to assess whether the accounting systems could generate a reliable financial statements. Further, inquiries were made to determine if the villages have appropriate insurance, existing tax liens or judgments, and other functions associated with the operation of utilities. The operational and maintenance components were assessed in a review of the water and sewer treatment facilities and through discussions with the operators and the utility management. The topics discussed included operator turnover, operator training, water production, adequacy of fuel supplies, residential and commercial billing rates and other delivery concerns.

The surveyed villages have three of the five components to implement and maintain a good financial reporting system: desire or willingness, computer equipment and mental capacity. They lack training and supervision. The villages need minimal technical assistance to develop and install a chart of accounts, the most basic accounting element that will meet the regulatory requirements of the State. The villages will also need minimal routine supervision and training to summarize and report the information gathered. Without reliable, accurate financial data, the most elementary financial analysis is impossible.

The operation and maintenance components were jointly surveyed with staff from YKHC. YKHC and Village Safe Water (VSW) staffs analyze the water and sewer systems periodically. A summary of the systems is presented in Exhibit 1.

An important step in evaluating the raw data is development of performance indicators to operate as reference point in the evaluation. Seventeen performance indicators were developed (pages 8 and 9) from the raw information gathered to measure success. The intent is to update the performance indicators with information available during the next four years. This information is available from public sources or is routinely gathered by YKHC and VSW staff. Comparison of the performance indicators over time will indicate the progression of the villages both RUC and non-RUC villages.

A decision matrix (page 6) was developed using the performance indicators. The matrix purpose is to rank the villages' likelihood of success in operating a sustainable utility system. The ability of the matrix to forecast success is solely dependent upon the weighting of the performance indicators. The stakeholders involved in the formation of the RUC should carefully review the scoring procedure. The outcome of the matrix will change significantly as the scoring formulas are revised. The scoring formula is contained in the matrix should be considered a "first pass" weighting the performance indicators.

Efficient delivery of water and sewer services can likely be achieved via the RUC. Twenty years of financial experience in Alaska taught me that economies of scale are nearly impossible to achieve at the village level; they are likely achievable within regions though. The RUC has the potential to achieve those economies of a scale allowing the RUC villages to have consistent, quality water and sewer services delivered in the most

cost-efficient manner. Some of the significant, quantifiable improvements that I foresee are:

1. Continuity of service—improvements in the physical plant and the improved operator training will sharply reduce the frequency and duration of outages;
2. Quality of product—improvements in the plant and operator training will improve the quality of the water produced. Member villages will meet the state and federal system requirements;
3. Value—user fees may increase over the present rates. The services will become a better value because the products will improve as will the delivery;
4. Member villages will have better trained people and equipment in the villages. Operators will have new skills that can be used elsewhere in the villages;
5. Public health should improve as villagers learn that the water tastes better and is more readily available; and,
6. More accurate, reliable accounting records will be available for the utility systems in each RUC village. The records can be used for rate setting, long range planning and communicating with outside agencies.

The consistent observation from the villages is the need for improvement in the continuity of service, improvement in the quality of water and sewer service and reduction in the cost of the services. The RUC has the potential to efficiently address the first two issues, continuity of service and quality of product, while maximizing the value of the services.

A well functioning water and sewer system are necessary components of all communities. The village staff surveyed had the aptitude, desire and vision to provide their villages with better utility systems today, and systems that will be sustainable into the future.

ANTHC/YKHC

Summary of 20 Village Performance Indicators

<u>Village</u>	<u>Site Visit</u>	<u>4/1/03</u>	<u>10/1/03</u>	<u>4/1/04</u>	<u>10/1/04</u>	<u>4/1/05</u>	<u>10/1/05</u>	<u>4/1/06</u>
Kotlik	250	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Alakanuk	235	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mountain Village	232	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Upper Kalskag	215	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Marshall	210	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Holy Cross	202	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Scammon Bay	200	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Grayling	195	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Toksook Bay	175	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Russian Mission	168	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Anvik	145	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Hooper Bay	121	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Cherfornak	110	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Akiak	83	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Numan Ipaq	81	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Atmautlauk	80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Pitka's Point	80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Tuluksak	80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Crooked Creek	73	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Quinhagak	70	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Purpose of Scoring Matrix

The scoring matrix was developed to determine the relative utility strength of the surveyed villages. Utility operations with higher scores have a better chance of achieving their goal of sustainability through RUC. The utilities with lower scores can use the detailed information to help them with the operational areas needing improvement. As these utilities improve their scores, they may become eligible for inclusion in the RUC. Their low score is an indicator of the amount of change they need to accomplish to achieve sustainability.

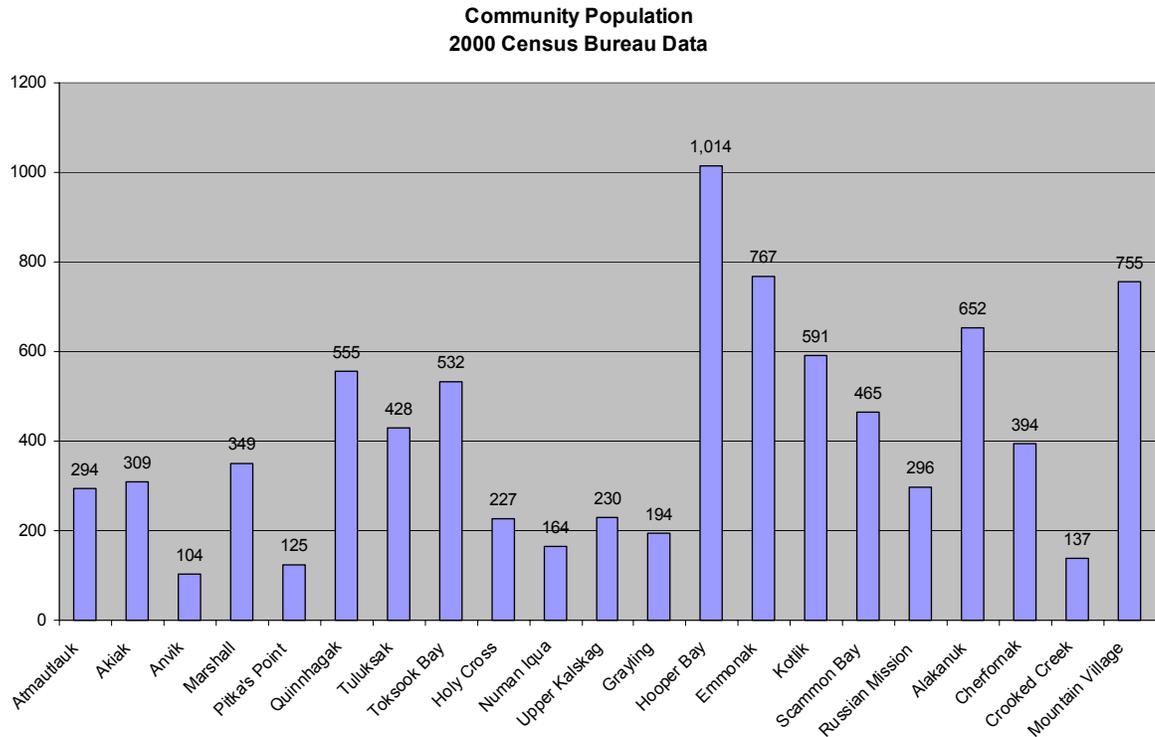
The scores of all the utilities will be measured periodically over time to determine the changes. The utilities that are not included in the RUC will effectively become the control group or the benchmark for the RUC.

Background

Alaska Native Tribal Health Consortium and the Yukon Kuskokwim Health Corporation are partnering to establish a pilot regional utility cooperative (RUC) to assist regional villages with utility system sustainability. The villages in rural Alaska routinely lack the technical, financial and managerial capacity to operate water and sewer systems. The lack of capacity is attributed to a variety of factors including very remote sites without road access, extremely harsh climates, low service populations, high operator turnover rates and limited technical and financial skills within the communities. Further compounding the problem, are increasingly complex operation requirements mandated by the federal and State government. The result has generally been utility systems that do not meet current regulatory requirements and generally decline in efficiency before eventually failing. The RUC has a primary goal of sustainability of operations for their members.

The RUC plan is to survey twenty villages to determine the operating and financial structure in the villages. The surveys goals are: 1) visit selected villages interested in joining RUC to determine the financial and operational status of the utility systems; 2) establish a baseline for future assessment of the villages that eventually selected join the RUC and those that do not; and, 3) propose an assessment matrix to identify those surveyed villages with the highest potential to achieve sustainability via RUC membership.

The villages selected for review and their size are depicted below:



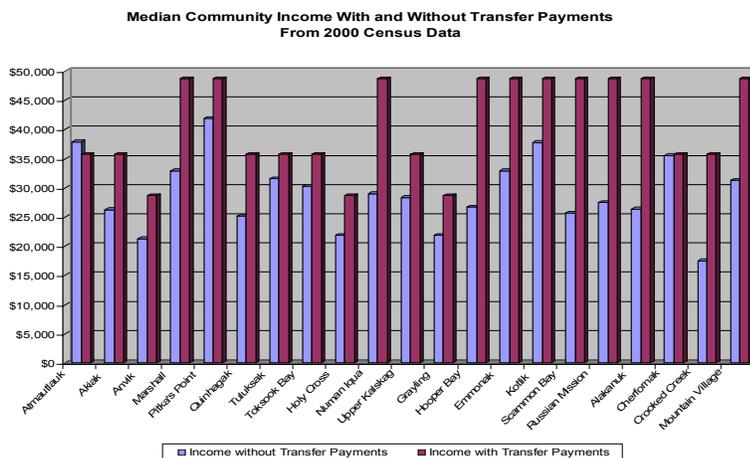
The first step in the survey process was to develop specific performance indicators with the expectation that they will be reasonable predictors of the success of the individual villages as Cooperative members. The surveyed villages that are perceived as having the highest likelihood of success as RUC members can expect to be offered the first Cooperative memberships. The performance indicators for all the surveyed villages will be updated every six months for the next four years. The data trend is expected to demonstrate whether the RUC villages become more efficient in delivering services via the RUC. The performance indicators are:

1. *Appropriate level of operator certification and education*
2. *Percentage of operable connections*
3. *Appropriate insurance for utility operations*
4. *Average cost of labor per hour*
5. *No IRS or Dept. of Labor liens*
6. *Water production*

7. Average monthly residential water & sewer billing
8. Population
9. Fuel cost per gallon
10. Average monthly fuel consumption
11. Average monthly electricity consumption in KW
12. Average cost per KW
13. Utility reserve fund equal to the prior year's operating budget
14. Hours worked by maintenance staff
15. Percentage of water & sewer billings collected
16. Number of connections by type—residential, institutional and commercial
17. Age of the water & sewer plants

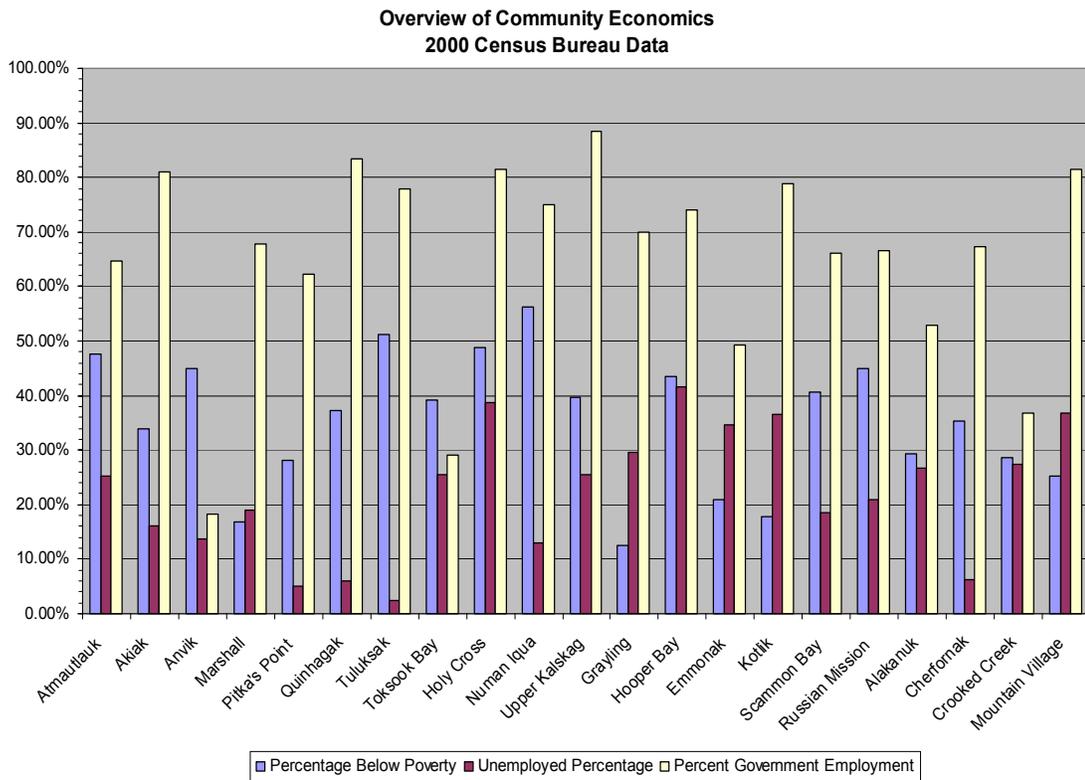
A computer-based program was prepared for each village. The program contains the performance indicators and appropriate charts designed to visually document changes in the communities. This program is intended to be used to measure the individual village performance over time.

A key piece of demographic information that is expected to be a reasonable predictor of success is income. The following chart presents 2000 Census income as reported by the residents and income that is computed by the Census Bureau using government data by census tract. The Census Bureau indicates that most residents do not consider transfer payments (welfare, Permanent Fund Dividend, disaster assistance, etc) when reporting income. Accordingly, the income reflecting these payments is probably a more reliable indicator of actual median income.



The income adjusted for transfer payments in the above chart is reported by US Census tract rather than village. There are three Census tracts in the YKHC service area. The surveyed villages were located within their tracts and the adjusted income for the tract was reported as the income for the village. There may be some distortion between villages within the Census tracts but it is not considered significant for purposes of this analysis.

The following chart demonstrates the reliance on governmental employment in the villages. The governmental jobs appear to have higher than average compensation. The villages with a higher percentage of governmental employment tend to have higher incomes.



Survey Process

Yukon Kuskokwim Health Corporation's (YKHC) Office of Environmental Health and Environment (OEHE) provide technical assistance to the villages. Given that they are familiar with the villages and the utilities, they were selected to assist in the RUC evaluation process. OEHE notified each village in their region that a regional utility cooperative was being suggested. Interested villages were asked for a resolution requesting inclusion in the survey process. The first twenty villages expressing that interest were selected for inclusion in this study. (Twenty-one villages were surveyed and one elected not to provide a resolution.) An Alaskan map showing YKHC service region and the surveyed villages follows:

Village visits were coordinated by OEHE staff and included interviewing the village clerk, the village mayor or designee, and the water plant staff. The site interview included: 1) reviewing the demographic and financial data with the village administration; 2) requesting operational and financial information; and, 3) touring the physical plant with the operators.

Survey Observations

Financial Conditions Noted

All of the villages had computer hardware and basic accounting software called QuickBooks. The accountants or clerks generally had minimal, if any, formal accounting training. The computer software was, with few exceptions, not properly installed because the clerks lack the skills to prepare a chart of accounts and to set the software options. As a consequence, the villages have not prepared separate accounts to collect operational data of the utilities. Without the separate accounts, the data necessary to prepare a statement of revenue and expenses was not readily available. Accordingly, there is no prompt method to determine whether the utility system is operating at or above breakeven.

There is a State of Alaska agency that is charge with providing technical accounting assistance to the villages. The surveyed villages either did not understand that they needed to request such assistance or the requested assistance was never delivered.

Cities are offered an alternative of supplying the State with audited financial statements or certified financial statements. Certified financial statements are prepared by the cities and include a representation by the cities that the financial statements are correct. All of the cities surveyed elected to supply certified financial statements. Extracts from these statements were reviewed prior to conducting the site visit and many inconsistencies and omissions were noted. The financial statements were discussed with appropriate village staff. The villages were unable to provide information to correct inconsistencies or to complete the omissions because they lack accounting training. Accordingly, financial information provided by the villages, directly or through the State, should not be relied upon.

Another consequence of poor financial information is the inability to prepare a business plan. The basic financial statements are the benchmark used to plan and predict the future operations. Without this benchmark, financial analysis is impossible.

Good financial systems include a system of internal controls. The system of internal controls is designed to ensure that financial transactions are properly recorded in the accounting records. An integral component of the system of internal control is segregation of duties. The small office staff in the village offices precludes segregating duties resulting in increased risk of misstated of financial statements. A formal study of the internal controls and the potential outcomes of the weakness that might have been noted had a study been conducted, are beyond the scope of this engagement.

Cash Collections

The villages with piped systems or with flush/haul systems experienced varying difficulty in collecting for the services provided. The utility staff reports that many villagers discount the need to pay for services provided in the village. The nonpaying villagers assume that the familial relationships of the village would effectively preclude termination of services for nonpayment. The villages report collection rates ranging from 95% of the amount billed to less than 5%. The utility staffs believe that bills from outside the village are more likely to be paid especially when coupled by an effective threat of discontinuing the service for nonpayment.

Taxing Agency Liens

Several surveyed villages report that they are not current with their federal and state payroll taxes. These villages report that they are negotiating either a payment schedule or preparing an “offer-in-compromise” with the IRS. A village with a payroll tax assessment transferred the water utility to a joint venture with the IRA. This tactic will probably only delay the IRS; not eliminate the collection. A legal assessment of the potential IRS risk is recommended prior to offering villages with tax liens membership in the RUC. The potential risk is seizure of the upgraded system or, more importantly, other RUC assets.

Insurance Deficiencies

Several villages do not have worker compensation insurance thus exposing them to unlimited liability in the event of a worker injury. A site visit recommendation was made to these villages to promptly obtain worker compensation insurance. Proof of insurance is recommended prior to inclusion of any village utility system.

None of the villages had flood insurance even though many of the plants are in what appears to be a flood plain. The villages were not aware that flood insurance maybe available through the federal government (FEMA). The villages apparently rely upon emergency grants to replace damaged systems.

Trade outs

Several villages have arrangements in which fuel oil and/or electricity for the water system is traded for water and wastewater services with the school districts. Some of the school districts have notified the cities that they no longer wish to trade services. The cities need to plan for the change in cash flows resulting from the terminations and, if the trades are not terminated, properly account for the trades. The accounting records presently do not include revenues for water and wastewater treatment provided and also do not include the cost of fuel or electricity traded. Reasonable financial evaluation of the system requires proper accounting for trades.

Rate Setting

None of the villages reported setting residential or commercial utility rates using cost data as the basis for the service. The methodology seemed to be the users ability to pay. This system is the default because the villages do not have reliable financial information. The Regulatory Commission of Alaska (RCA) regulations require rates to be based on the cost of the service. Some villages report that they operate the utilities above their direct costs thereby providing a subsidy to the cities. Other cities report that they operate the utilities at a loss. That raises the issue of subsidy in situations where not all of the cities' residents have the same level of service. A

proper study of rates needs to be completed when reliable financial information is available.

Capital Grant Accounting

The villages often account for capital grant receipts as revenues and capital grant expenditures as operating expenses. The improper accounting treatment further complicates even rudimentary financial evaluation and may result in improper grant reporting.

Plant Operator Tenure and Training

Water and wastewater plant operators generally had significant tenure implying that employee turnover was modest. The operators were typically paid \$10 to \$12 per hour with modest increases as the operators received additional certifications. The compensation is low enough that a number of operators are looking for other employment thus leaving the systems with untrained operators especially for systems with no or limited back up operators.

Plant Maintenance

Virtually all the plants are suffering from deferred maintenance thus precluding sustainability. ANTHC and the State's Village Safe Water program make maintenance recommendations that are generally ignored by the villages because they have no maintenance reserves.

Specific Village Observations

Akiak

The IRA operates Akiak's utility system. The most recent financial statements are from 1998 and show a very large deficit of revenues over expenditures. The accounting records need to be reconstructed, a computerized system installed and the clerk better trained to begin resolving their financial operations. The Community has a strong leader.

Alakanuk

Alakanuk is one of the larger villages surveyed and has above average household income. The Village operated at a modest deficit in the most recent year reported. The accounting records are reasonable because the clerk has had some formal training. The utility rates are modest but the collection rate is reported to be 95%. The Village management appears to be quite good. The water and wastewater utility may be partially funding other village operations. The effects of economies of scale are evident in the operation of the utility.

Anvik

This is a very small village with very low household income. The Village apparently had substantial IRS liens in the past and paid those liens in the intervening years. The Village needs accounting assistance both with training of the Village Clerk and installation of accounting software. The Village is reported to be using Quicken and only accounting for cash in and out flows.

Atmautlauk

Atmautlauk has not filed financial statements with the State for several years. The clerk indicates that expenses are recorded on a computer but did not respond to an

inquiry whether a formal accounting system exists. The Village expects to upgrade to a flush/haul system in the next few years.

Cherfornak

Cherfornak's utility system is operated by an informal joint venture between the village corporation and the Village. The structure was apparently developed to circumvent an IRS lien collection effort relating to the City's failure to pay payroll taxes. The legal standing of this joint venture is questionable. Formal billings are not made; the residents directly pay at the utility office. Collections are reported to be 100% because services are immediately terminated if payment is not made. The utility system does not have a formal accounting system. The residents are paying \$60 to \$80 per month for a combination of water haul, solid waste haul and wastewater haul. The Community is anxious for installation of a piped delivery system.

Crooked Creek

Crooked Creek is the second smallest community surveyed and has low household income. The utility provides water at the washeteria using a token system. The Tribal Administrator indicated that there are no financial statements available and because the Community is not incorporated there are no certified financial statements filed with the State of Alaska. There is indication that no accounting records exist beyond payroll records. The utility has no insurance including worker compensation. The Community water system was completed in 1995, operated for several years, shut down due to lack of funds, and then reopened in approximately 2000. The water plant is located near a river that floods each spring. The water plant was isolated, by flooding, at the time of visit.

Grayling

Grayling does not have a functioning accounting system. They use computer spreadsheets to record cash in and out flows. The water plant operator has significant experience and the plant appears to be functioning well. The rate

structure is likely too low to cover the direct expenses. They reported a large IRS lien and report that they are preparing an offer-in-compromise to settle the lien. The Village does not own their fuel supply. The household income for the Community appears to be quite low.

Holy Cross

Holy Cross has a piped system that has been in service for several years. The financial system appears to be functioning reasonably well and the collection rate is reported to be 80%. The rate structure is so low that it barely covers the direct costs. The School is consuming over 40% of the water produced and is being charged \$300 per month for water and wastewater. Low rate structure may also reflect the Community's low household income.

Hooper Bay

Hooper Bay is the largest village surveyed and has fairly high household incomes due to the halibut fishery. The Village's accounting records were reasonable but the clerk is leaving her position. The Village is pressing to implement a piped system and, once installed, expects have utility rates of \$100 to \$115 per month. Continued funding of the piped system is reported to be contingent upon have a 50+% collection rate. The Village has been aggressively collecting for services and is reported to have achieved a 50% collection rate. The general government activities appear to be well managed.

Kotlik

Kotlik is one of the larger communities surveyed and has above average household income. The financial system is working reasonably well because the clerk has received some State training and assistance. She also has thirteen years experience. The City's rate structure is high enough to generate some excess of utility revenues over utility expenditures. The utility and the general village operations appear to be well managed.

Marshall

The City's financial condition appears to be quite good as they have an excess of revenues over expenditures. The utility rates are fairly modest and they have a collection rate estimated to be 90%. The accounting system appears to function quite well as do the overall Village operations. The staff should be commended for their efforts. Marshall also has above average household income.

Mountain Village

Mountain Village is the third largest community surveyed and has one of the highest household incomes. The Village administrator reports that the wastewater system is failing causing a potential health hazard. They also report that the number of homes connected to the treatment plant has tripled without any improvements to the treatment system. The accounting system is rudimentary and Mountain Village's administrator mentioned that they are waiting for assistance from Rural Utility Business Advisors (RUBA) to make accounting system improvements. The residential rate structure is probably too low to cover their costs. The commercial structure, the School District, is being charged \$.12 per gallon of water and so is probably subsidizing some other operations. The collection rate is reported to be 80 to 85% of annual billings. There seems to be no separate accounting for utility revenues and expenses and no attempt to allocate expenses thus making any analysis impossible.

Numan Ipaq

Numan Ipaq is a small community formerly known as Sheldon's Point. The Village has fairly low household income. The accounting records are reported to primarily consist of a cash receipts and disbursements journal and a payroll ledger. They are uncertain whether worker compensation and general liability insurance was in place at the time of the site visit. The School District water is metered and the Village charges the School District \$.12 per gallon. This water charge appears to be the major source of revenues for the utility. Grant funds are reported to be available for a significant upgrade to the water system.

Pitka's Point

Pitka's Point is the smallest community surveyed. The accounting records are insufficient to determine whether the utility is operating above breakeven. Presently, the accounting records consist of a check register. They purchased a computer and software and are waiting for the RUBA to assist in the software installation, conversion of the existing records, and basic computer training. The rate structure needs to be evaluated because the School District apparently uses 50+% of the water production and pays \$300 per month.

Quinhagak

The IRA engaged a contract bookkeeper using Multiledger software and a Macintosh computer to reestablish the accounting system. The contract bookkeeper reports that the collection rate is nearly 100% because an ordinance exists allowing termination of service. A trade out agreement exists with the School District and no data was presented that would allow meaningful analysis of agreement. A piped system is presently being designed for the Community. A dispute between the Village and the IRA, operator of the utility system, may adversely effect installation and operation of the system.

Russian Mission

The Village has been unable to convince the residents to pay for water and wastewater services. They report having stopped sending billings several years ago because the payment rate was less than 10%. The Village Council is considering implementing a Village sales tax to pay for village services including utility services.

Russian Village also has a trade out arrangement with the School District that trades water for fuel oil. The agreement is being terminated by the School District. The Village is expected to be in a severe cash crisis if they must purchase fuel to operate the system this summer or fall.

The water plant condition is very poor. The building has holes in the roof near the flues and the water plant equipment is reported to be at the end of its operating life. In addition, the tank farm is owned by the School District and is not ADEC compliant. The piping from the School District tank farm to the water plant is exposed thereby subjecting the Community to the risk of a significant oil spill. Considering the scope of the issues, inclusion in the RUC may help resolve these utility issues.

Scammon Bay

Scammon Bay has above average household income in part due to the halibut fishery. The accounting system appears to be functioning reasonably well and the clerk reports receiving several accounting classes and past assistance provided by the State. They appear to be over budget on a capital project and the result is delinquent accounts payable. The utility billings are sent every two to three months by mail. The collection rate has historically been 10-15%. The Village government appears to function quite well and is eager to improve the water and wastewater system.

Toksook Bay

The financial records appeared to be in better condition despite the limited formal training of the clerk. The City's utility rates are quite low and are supplemented from the proceeds only of Monday night bingo. They estimate their collection rate at 85% of annual billings. They report concern whether they can meet the new arsenic standards without additional equipment. The Village is very eager to join the RUC.

Tuluksak

The Community has limited accounting records. A copy of financial statements with a CPA's report was supplied. The CPA disclaimed an opinion because there were insufficient records. A large payroll tax liability is reported and an offer-in-compromise is being prepared. The School District appears to trade out electricity and fuel for water. Water storage is insufficient for demand. The trade out

agreement needs to be reviewed to determine if the School District is paying an appropriate amount given that they are consuming 70-80% of water production.

Upper Kalskag

The Village reported to the State that they had a deficit for the most recent year reported. The accounting system is manual and being converted to computerized operations. Upper Kalskag has individual wells and a community wastewater system. They report collections of approximately 85% of annual billings despite continual community dissent over the system.

Exhibit 1—YKHC’s Site Survey Trip Report Summaries

The YKHC trip reports, prepared at the time of the site visits, provide a general indication of the water and sewer system condition. These trip reports, where available, the Community Sewage Survey, and the Community Water System Survey are summarized below:

Akiak

The Community uses a combination of the individual septic systems, honeybuckets and a vacuum truck to provide sewer systems. The last survey of the septic system was in 1992 and subsequently a new lagoon was constructed. A piped system is presently planned.

The potable water system consists of a well and water treatment system. The system is approximately one year old and needs several small repairs or improvements. An individual whose operator certificate expired is presently operating the system. Documentation of the water testing is incomplete.

Anvik

Anvik’s sewer system is primarily a piped system with some individual septic systems. The system appears to be in good repair. The recommendations consisted of repairing the fence surrounding the lagoon and locking the lagoon gate. There were several other relatively minor recommendations relating to maintenance.

The water system consists of individual wells for the residents and a small water loop from a well for the watering point, city office and the washeteria. The only maintenance recommendation was to better insulate the loop to preclude freezing in extremely cold weather.

Alakanuk

Alakanuk's water treatment system was constructed in 1999 but the distribution system is approximately twenty-five years old. The water system evaluation mentions several minor recommendations. The water system does not extend to fifteen houses across a slough and connection of these houses is a priority of the Village.

The sewer system connects ninety percent of the residences and the remaining homes use a sewage holding tank that is pumped on a routine basis. There are seven homes that use pit privies. Use of such privies is strongly discouraged.

The sewer system is reported to be in good repair. Recommendations addressing the waste handling procedures and operator certification were made. There were several sewer repair and maintenance recommendations.

Atmautlauk

Atmautlauk has a self-haul honeybucket system in which the residents haul their waste to collection bins located in the Village. The sewer system operators empty the collection bins frequently, usually every day.

The sewer problems noted surround the collection and disposal of waste from the collection bins. The four-wheeler and the snow machine used to pull the pump and collection tank are broken. The Village is renting equipment infrequently. The result is that the collection bins are not being emptied as often causing overflows. In addition, the bins are deteriorating causing leaks. The sewer collection staff is not using appropriate handling procedures and has not been immunized. Several other maintenance items were noted.

The water system is reported to be in good repair. There are several repair and maintenance items noted for follow-up. In addition, testing and documentation variances were noted as were suggestions to resolve them.

Cherfornak

Current water and sewer treatment surveys are not available for Cherfornak. A survey conducted in 1999 found a number of deficiencies in the design and operation of the septic system that present significant health risks.

Cherfornak's leaders expressed a strong interest in obtaining a piped water and sewer system during the site survey in May 2002.

Crooked Creek

Crooked Creek provides water to the Community via one watering point at the washeteria. The two thousand gallon water storage tank is too small for the Community. There were several noncritical operating deficiencies noted that could be addressed with the assistance offered. The water sampling plan was not available as required by the State and federal governments. The water plant is located across Crooked Creek from the Community. Spring flooding causes the water plant to be inaccessible typically during break-up.

Grayling

The potable water system draws water from an infiltration gallery on Grayling Creek. The water is treated and pumped into a 60,000 gallon storage tank for distribution throughout the Village via a pipe system. Several maintenance issues are addressed in the Water System Survey including a 5,000 gallon per day leak in the system. There are several repair and maintenance issues addressed in the report also.

Grayling has a fully piped sewer system. The system is reported to be in good repair with minimal recommendations made regarding the operation. Waste handling procedures and insufficient operator certification are the two major apparent problems.

Holy Cross

Holy Cross has a fully piped sewage collection system pumping into a two-cell treatment lagoon. The sewage system needs minor maintenance to the security fence and the removal of some brush. There is insufficient security at the sewage treatment plant resulting in a potential health hazard for unauthorized visitors.

The water treatment plant is in poor repair. The boilers used to raise the temperature of the water entering the distribution system are near the end of their life cycle. There are also problems with the meters used to measure water flow. In addition, the chlorine injection system is not being properly monitored causing a potential health hazard from either too high or insufficient chlorine concentrations. Consistent with the monitoring problem, a coliform testing program has not been initiated to comply with water regulations.

Hooper Bay

Hooper Bay obtains its potable water from a well near the town site. The water is treated and made available to the residents from one year round watering point and several summer watering points. The City is out-of-compliance with the water system surveys.

There are no current sewer system surveys available.

Kotlik

The potable water system draws water from the Kotlik River and is treated to remove contaminants. Approximately, one-fourth of the buildings in town are not served via the pipe system. Water is available at the washeteria for those residents.

Several repair, maintenance, documentation and certification issues were raised in the review. Assistance was offered to resolve a majority of these issues.

The sewage system has pipe connections to all but thirty-five buildings including thirty residences. Those residents use honeybuckets. The recommendations included several addressing documentation and minor maintenance. The other issue was proper waste handling procedures and operator immunizations.

Marshall

The water system is reported to be in reasonable repair. The improvements needed consist of maintenance items, small repairs and improvements in the operating procedures.

Marshall has a hybrid sewer system consisting of an older piper system combined with a honeybucket system for twenty-eight homes. Honeybucket hoppers for bunkers should be installed to avoid honeybucket users dumping their waste into sewer system manholes. There are several issues addressing deficiencies in the operating procedures with a goal of improving safety to the Community.

Mountain Village

The potable water system consists of three wells, one water treatment plant and two circulating loops. Several operating recommendations were made that will increase reliability.

The sewer system serves approximately two hundred families. There are several operating deficiencies addressed including one that allowed untreated sewage to run on the surface during the past winter.

Nunan Ipaq

Nunan Ipaq has a hybrid sewage pipe system connecting the clinic and the water treatment plant. All of the other buildings use honeybuckets with curbside hoppers that are emptied three times weekly. Operation of the system is reported to be efficient with only small

maintenance items being reported. The Community applied for grants to replace the current lagoon and to install a causeway across Swan Lake. The causeway is intended to carry the water and sewage lines.

The water plant has one mechanical defect that needs addressing. Relocation of the stream current detector is not expected to be expensive but will result in less turbidity. There are several reporting and training regulations that are not being addressed presently. Suggestions were made to assist the Community in implementing the necessary changes.

Pitka's Point

The Village uses a combination of honeybuckets and a package plant system for the washeteria, school and teacher housing. The residential portion of the Village relies upon honeybuckets, collection haul hoppers, and a sewage lagoon approximately 200 feet higher than the Village. The road to the lagoon is reported to be impassable during winter months and needs to be graded regularly. In addition, the lagoon is unfenced thus allowing children and animals to access the site.

The Lower Yukon School District had a fuel line burst in 2000 contaminating the Village well. Water is being provided to the residents via a series of truck hauls from St. Mary's. This system will probably not be operable during winter months causing the residents to carry water in buckets.

The possibility of obtaining funding for a new water system is reduced because the water plant operator lacks formal certifications that would allow the Village to receive grant funding.

Quinhagak

Quinhagak uses a honeybucket system for their sewage. Several disposal hoppers have been abandoned because they were in poor repair. Several others have been repaired several times and are near the end of their service life. YKHC noted four significant health

hazards for the plant operators that may be the result of untrained operators. They also noted that a formal, well-designed lagoon needs to be developed and proper hauling and handling equipment purchased.

Quinhagak's water system was noted as having several operating and maintenance problems that can be corrected at minimal cost. One of the deficiencies has the potential to cause inconsistent treatment of the water with chlorine thus posing a health hazard.

Russian Mission

Russian Mission has a piped sewer system for the entire town. There were four problems including warning signage, fencing and system design. ANTHC will continue to work with the Village to address the design defects.

The potable water is delivered via a piped system to all the residences and most of the commercial buildings. The condition of the water plant is very poor. The equipment is at the end of its life cycle and is exacerbated by a lack of maintenance. The building roof needs major structural repairs. The pumps, boilers and chlorination equipment either do not operate or are not being used. There is no documentation of water testing for the Community.

Scammon Bay

The Village obtains its water from a creek flowing from a spring near the town site. The water system is currently being renovated and the renovations are incomplete. The Boil Water notice is still in effect from February 2001. There are several significant operational deficiencies including potential over chlorination of the water supply, lack of chlorine residual in the water, discovery of small black bugs in the water and damaged water supply piping. The Boil Water notice will not be lifted until all deficiencies are addressed.

The Village is served by a pipe system. One section of the Village is subject to sewer freezing and needs to be reengineered. The system is reported to be in good repair. The major deficiencies appear to be waste handling and operator certification.

The financial collection rate for the water and sewer utility is very poor causing significant financial distress to the Village. Funds necessary for repairs and maintenance will not be available unless steps are taken to address the delinquencies.

Toksook Bay

The potable water system consists of a well and water treatment system. The system is reported to be in reasonable repair. Approximately, ten maintenance items were noted for follow-up. In addition, the testing and documentation of the water is not current. Better testing and reporting is needed to ensure safe water.

Toksook Bay has a piped sewer system and a single cell sewage lagoon. The system appears to need some minor maintenance and a back-up operator to operate at peak efficiency.

Tuluksak

The water is drawn from a well, treated and pumped into a 10,000-gallon tank. Water is available at the school, teacher housing and washeteria. The storage tank is developing leaks indicating that it is near the end of its service life. There are many significant deficiencies in the design, repairs and maintenance of the water system. Some of these deficiencies constitute a potential health hazard to the Community.

The septic system consists of honeybuckets, collection bins and a sewage lagoon. The collection bins were noted as freezing, making pumping impossible. Further, the collection staff is not wearing proper safety gear and is using a six-wheeler intended for potable water delivery to pull the septic pumping cart. These present significant health hazards to the Community.

Upper Kalskag

The Village residents obtain water from individual wells. There are no testing requirements of the individual wells. The residents complain of bad water taste and brown coloration. There are attributed to the high iron content in the water. Residents have been advised of water treatment systems that can be purchased at the resident expense to reduce the iron content.

The sewage lagoon is approximately seven years old and is in good repair. There are several repair and maintenance issues that need addressing. One of these issues is the lack of operators using proper protective gear and not having appropriate immunizations.

Exhibit 2—Water & Sewer Rates for Selected Other Alaskan Cities

<u>City</u>	<u>Population</u>	<u>Water</u>	<u>Sewer</u>	<u>Total</u>
Ambler	332	\$ 42.50	\$ 42.50	\$ 85.00
Buckland *	416	\$ 180.00	\$ 30.00	\$ 210.00
Deering **	141	\$ 120.00	\$ 55.00	\$ 175.00
Kiana	415	\$ 40.80	\$ 30.60	\$ 71.40
Kivalina	349	-----no service-----		\$ -
Kobuk	80	\$ 57.50	\$ 57.50	\$ 115.00
Kotzebue	3138	\$ 62.32	\$ 15.59	\$ 77.91
Noatak	413	\$ 37.50	\$ 37.50	\$ 75.00
Noorvik	631	\$ 45.00	\$ 45.00	\$ 90.00
Selawik	665	\$ 20.00	\$ 70.00	\$ 90.00
Shungnak	260	\$ 25.00	\$ 25.00	\$ 50.00

*Assumes 40 gallons per day per household and 1 septic tank emptied per month.

**Assumes 40 gallons per day per household.

These rates are provided to offer a point of reference. The rates were current as of 1999.

Exhibit 3--Sample Scoring Sheet
Scoring Explanations

	Time Periods		
	<u>Site</u>	<u>Score</u>	<u>Explanation of Scoring</u>
	<u>Visit</u>		
Appropriate level of operator certification.			
Specified--WT		0	If the actual level of operator certification is equal to or greater than the specified level (State of Alaska standards), ten points is awarded. If the actual level is less than specified, no points are awarded.
Specified--WD		0	
Specified--WWT		0	
Specified--WWC		0	
Actual--WT			
Actual--WD			
Actual--WWT			
Actual--WWC			
Percentage of operable connections.		0	The percentage of operable connections is multiplied by 100.
Appropriate insurance for utility operations. No = 0; Yes = 1		0	Ten points are awarded if appropriate insurance exists. If not, no points are awarded.
Average cost of labor per hour		0	
No IRS/AK Dept of Labor liens. No = 0; Yes = 1		0	If liens exist, ten points are deducted. If not, no points are awarded or deducted.
Water production.		0	Ten points are awarded if the water system produces at least 50 gallons per person per day.
Average monthly residential water & sewer billing		0	
Population		0	If the population decreases from the previous survey, ten points are

Fuel cost per gallon	0	deducted. Ten points are awarded if the fuel cost per gallon is less than the average for all villages survey.
Average monthly fuel consumption	0	Ten points are awarded if the water production per gallon of fuel is less than the average of the villages surveyed.
Average monthly electricity consumption in KW	0	
Average cost per KW consumed	0	
Contingency equal to one years operating budget. No = 0; Yes = 1	0	Ten points are awarded if there is a contingency fund equal to one years operations.
Hours worked by maintenance staff	0	Ten points are awarded if the maintenance staff work more than thirty hours per week.
Percentage of water & sewer billings collected	0	Point award is equal to the percentage of collection times 100.
Age of water and sewer plants	0	Ten points are awarded if the plant was constructed or had major renovations in 1992 or later.
Operator on EPA's System Non Compliant (SNC) list No = 0; Yes = 1	0	Ten points are deducted if the village is on the SNC list. Otherwise, ten points are awarded.
Total	0	