SUMMARY OF DATA

From
Survey of Rural
Sanitation Facilities

Number of villages in survey 201

Total population as of June, 1976 - 50,345

I. Domestic Water Use (Data from 190 villages)

Category	Number of Villages	% of 190
1. Haul from undeveloped source(s)	48	25
2. Haul from developed source(s)	63	33
3. Have water service to homes	79	42

II. Industrial and Institutional Use (Data from 141 villages with a total of 358 establishments)

Category	Number of Institutions and Industrial Establishments	% of 358
1. Have an adequate water supply [a]	170	48
2. Have a moderately inadequate water supply	127	35
3. Have a severly inadequate [b] water supply	61	17

a. Adequate means piped service to a building plumbing system, with water of reasonably acceptable quantity and quality.
b. Severly inadequate means water is unreasonably difficult to obtain and/or quality is poor enough to discourage consumption.

III. Planned Improvements in the Water Supply (Data from 158 villages)

Category	Number of Villages
1. Planned	47
2. Under construction	10

IV. Contamination of Natural Waters

Category	Number of Villages	%
1. Garbage Disposal (Data from 132 villages)		
a. Indiscriminate dumping	23	17
b. Controlled dumpsite	50	38
c. Dumpsite present but may or may not be in use	59	45
2. Domestic Sewage Disposal (Data from 163 villages)		
a. Privies and/or honey buckets - dump site unknown and/or inadequate	78	48
b. Honey buckets with adequate and controlled dump site	13	8
c. Have disposal service to homes (e.g. haul, piped, individual on-site system)	72	44
3. Industrial and Institutional Sewage Disposal (Data from 117 villages with a total of 278 establishments)		
a. Privies and/or honey buckets- dump site unknown and/or inadequate	55	20
b. Honey buckets with adequate and controlled dump site	16	6
c. Have disposal service to establishment (e.g. haul, piped, individual on-site system)	207	74
4. To Summarize the Evidence of Contamination (Data from 146 villages)		
a. No evidence of contamination	45	31
b. Severe and hazardous contamination exists	70	48
c. Potential for contamination exists, but no immediate hazardous situation exists	31	21

V. Flood Hazard (Data from 174 villages)

Category	Number of Villages	%
1. Severe flood problem [a]	10	6
2. Moderate flood problem [b]	96	55
3. Minimal flood problem [c]	68	39

a. At least 20% of village floods at least once every five years.
b. Any village not in the severe or minimal categories.
c. Any portion of the village flooded no more frequently than once every 100 years.

VI. Erosion (Data from 195 villages)

Category	Number of Villages	% of 195
1. Army Corps of Engineers indicates erosion problem	89	46
2. Army Corps of Engineers does not indicate erosion problem	106	54

APPENDIX A

MEMORANDUM State of Alaska

TO: The Honorable Jay S. Hammond, Governor

DATE: September 13, 1976

FILE NO:

TELEPHONE NO:

FROM: Ernst W. Mueller, Commissioner, Department of Environmental Conservation

SUBJECT: Village Safe Water Program Planning

On September 12, 1975, we provided you with a briefing on the Village Safe Water (VSW) program. In the briefing we pointed out the need for planning and policy-making with respect to the State's role in providing rural sanitation facilities. This memorandum is a progress report on VSW planning efforts, with recommendations and a description of options to serve as the basis for policy decisions to guide the VSW program.

INVENTORY OF RURAL SANITATION SERVICES

A beginning has been made on a statewide inventory of rural sanitation facilities. The form of the inventory and its current status are best described in Appendix A which contains a report entitled Report of the Task Force on Remote Village Water for the Alaska Water Assessment. The task force chairman, Jerry Sargent, is the current manager of the VSW program. Appendix A also contains a summary of the inventory data gathered.

The inventory must now be passed among the various agencies, organizations and individuals that are familiar with sanitation facilities in individual villages for appropriate additions, deletions, and corrections. Ultimately, of course, the accuracy of the inventory will have to be verified by visiting sample villages and observing how well existing facilities match the inventory data.

Preparing the inventory and keeping it up to date has been, and will continue to be, an enormous task. It appears, however, that the inventory will be well worth the investment. Large sums of State, federal, and other monies are spent on capital projects in Alaska's villages, without the benefit of adequate site data. In fact, a healthy amount is sometimes included in rural capital projects for site investigations - many of which are duplications of previous investigations. Also, the data collected for specific projects are not systematically organized and preserved for use on future projects. More money is probably already

being spent each year to gather village site data than would be needed to set up and maintain a single comprehensive inventory of all rural sanitation facilities in the State.

Besides being of value to the State, an accurate inventory of rural sanitation services would also be valuable to other government entities, Native organizations, communities and individuals (e.g., see Appendix B for a copy of a letter from the Bristol Bay Health Corporation dated July 30, 1976).

The Department of Public Works is currently working on an inventory of State facilities as part of a revamping of State construction methods. Part of their data, and perhaps some of their inventory management methods, will be valuable to us.

We suggest that developing and maintaining the inventory of rural sanitation facilities be a top priority VSW activity.

CONSTRUCTION OF VSW FACILITIES

Past Projects

In our VSW briefing to you dated September 12, 1975, we described problems encountered when VSW facilities were constructed through State construction contracts administered by the Division of Buildings. Since then we have completed one facility (Pitkas Point), and nearly completed two others (Beaver and Koyukuk), using the design and construction management techniques described in the September 12th briefing.

We estimate that the Pitkas Point project cost at least 25% less than it would have by traditional State construction methods. Just as important, however, is the fact that the facility was built in less than a year, and both we and the village are happy with it.

The Beaver and Koyukuk projects were delayed several months due to funding entanglements with the Legislative Budget and Audit Committee. But they will be completed around January or February of 1977, at costs comparable to our Pitkas Point experience.

Our latest project is at Kongiganak, where the design and construction methods will be similar to the methods used at Pitkas Point, Koyukuk, and Beaver. A significant difference, however, is that the State is not party to the Kongiganak design and construction management contracts. Rather the State has made a VSW construction grant to the

village, the village has contracted directly with a design and construction management consultant, and we are helping the village administer their contracts.

Future Projects

The political representatives of the people of Alaska (i.e., the legislative and executive branches of State government) passed a bond bill during the Ninth Legislative Session calling for 1.5 million dollars more for VSW capital construction. If Alaska's residents approve the bond bill in November, we will carry out the public's wish and build about three more VSW facilities during FYs77 and 78. Our intention would be to use the same design and construction management methods we used at Kongiganak.

In selecting villages to receive the FY 77-78 VSW projects, we would make a concerted effort to involve the appropriate regional Native organizations. We feel that ultimately any VSW construction the people of Alaska choose to fund should be managed by the non-profit regional Native organizations (see Appendix C for VSW construction options as stated in a draft of the Department's FY 78 budget submittal). Hence the regional organizations should be involved in projects right now to the extent they are able. Over the next several years we must try to develop their ability to manage the VSW construction program.

OPERATION AND MAINTENANCE OF VSW FACILITIES

As we have pointed out frequently in the past, virtually no village in the State has the resources to adequately operate, maintain and manage a VSW facility (or any other utility system) without outside financial, technical, and management assistance. This Department will spend $289,000 in FY 77 to help eight villages operate and maintain their VSW facilities. The total of the operating budgets for those same eight facilities in FY 77 is estimated at $ $470,000.

In FY 78 there will be nine VSW facilities in operation, and the Department has requested $371,000 to assure their successful operation and maintenance. The total of the FY 78 operating budgets for the nine facilities is estimated at $606,500.

A recommendation of the Governor's Management and Efficiency Review was that VSW facilities not be constructed since the villages are unable to operate and maintain them without assistance. Such a question is less a matter of management efficiency than a matter of public policy. In the VSW Act the people of the State said provisions were to be made for water supply, waste disposal, bathing and laundry services

in every village in the State. Providing those services requires public expenditures for both capital construction and operation and maintenance. As the managers of the VSW program, we are obligated to point out the futility of capital construction without adequate provisions for operation and maintenance. Then it is up to the public to decide whether or not the State should provide rural sanitation services as specified in the VSW act.

During FY 76, VSW operation and maintenance support to villages consisted of cash grants to the villages, equipment and materials purchased by the State and given to the villages, and contractual services provided by people and businesses under contract with the State. In order to involve the villages more in managing their VSW facilities, and to avoid the costs and delays attending State and Departmental administrative procedures, VSW operation and maintenance funds will be distributed only as grants to the villages as soon as a grant system to do so is established in FY 77.

If there is to be an operation and maintenance support program for VSW facilities funded by the State in years to come, such a program should ultimately be administered by the non-profit regional Native organizations. As with the VSW construction program, however, the regional organizations are not yet fully capable of taking on management of a VSW operation and maintenance program. Part of our job would be to build such a capability in the regional organizations.

VSW PLANNING

Our planning objectives in the VSW program are still as described in the September 12 briefing. The inventory of existing rural sanitation services has occupied most of our planning attention so far, although we have also made progress in developing a familiarity and working relationship with the regional Native organizations and other agencies with interest and involvement in providing rural sanitation services.

Our ultimate goal is still to design a comprehensive program for achieving sanitation services in Alaska villages. That design should suggest what role the State (and all other appropriate groups) should play in providing rural sanitation services. It could take at least another year or two to develop the comprehensive program.

We recommend that only a limited number of VSW facilities be constructed from now on until long term provisions are made for their operation and maintenance, and until we have developed the comprehensive program for rural sanitation services. If the people of the State want some VSW construction to take place in the mean time, we suggest no more than two facilities per year.

SUMMARY OF RECOMMENDATIONS

1) A complete inventory of rural sanitation services should be developed and maintained as part of continuing VSW program activities.

2) A top priority activity in the VSW program should be comprehensive planning to develop a statewide program for providing rural sanitation services (see specific objectives in the September 12 briefing).

3) Construction of new VSW facilities should be limited to no more than two projects per year until a comprehensive program for rural sanitation services is developed, and until adequate provisions are made for operation and maintenance.

4) The State must accept the responsibility of making provisions for successful operation and maintenance of VSW facilities. Hence State funds to support VSW facilities already constructed and to be constructed (if the people of Alaska call for any) must be provided every year unless other provisions are made as part of the comprehensive program for rural sanitation services called for in (2) above.

5) Assuming there is a place for the VSW program in the comprehensive program for rural sanitation services called for in (2) above, the VSW program (both capital construction and operation and maintenance) should ultimately be administered largely by the Native regional non-profit organizations. Since those organizations are not yet ready to take on such a program, the State should help develop their ability to do so.

APPENDIX B

BRISTOL BAY AREA HEALTH CORPORATION
P. O. BOX 233
DILLINGHAM, ALASKA 99576

PHONE: (907) 842-3322

July 30, 1976

Dr. J.W. Sargent, PH. D.
Sanitary Engineer
Dept. of Environmental Conservation
Village Safe Water
Pouch O
Juneau, Alaska 99811

Dear Dr. Sargent:

Please find enclosed the village information sheets required for your inventory of sanitation services. I have included information available from BBAHC village files and from the OEH files of Kanakanak Service Unit. In your letter, you did not list the particular agencies asked to participate in the inventory in the Bristol Bay region. If you have not included Regional School Districts 6 and 7, (formerly Alaska Unorganized Borough School District), I recommend that you do so; the school district personnel have accurate information on the village schools and are aware of community conditions as well. To clear up some confusion, the Bristol Bay Area Health Corporation is a non-profit health entity, its service area covers the combined boundaries of the Kanakanak Service Unit/IHS and Bristol Bay Native Corporation, the for-profit corporation formed under the Native Land Claims Settlement Act. I am enclosing a list of villages served by the Bristol Bay Area Health Corporation for your information in the future. The detailed update on Dillingham was obtained from the planning office of Choggiung Limited, the Dillingham Village Corporation.

The reaction from all of us working on the inventory is that it is long overdue and that we could all use a copy of the completed survey for our own planning files. Please send us a copy when you are finished.

Sincerely,

BRISTOL BAY AREA HEALTH CORPORATION

Nancy Knoohuizen

Nancy Knoohuizen
Planning Officer

NK:slc

cc: Robert J. Clark, Executive Director
Ron Perkins, Environmental Health Services, Kanakanak
Tom Hawkins, Choggiung Limited

Enclosures: List of BBAHC Board Members & Village Information Sheets

APPENDIX C

VSW Construction Options

Excerpts from Draft of FY 78 Budget

Written in a Draft of Department's FY 78 Budget

The alternatives for construction of VSW facilities are essentially the same for FY 78 as they were for FY 77 (see the following list of alternatives A, B, C and D for Objective 3 as listed in the Department's FY 77 budget s submittal).

The latest VSW project (in Kongiganak) is being designed and constructed by about the same methods as described in Alternative A, except that the state is not party to the consulting contracts. Rather the state has a separate grant agreement with the village.

Alternatives A, B, C, and D for Objective 3 as listed in the Department FY 77 Budget

Alternative A - Construction Management by ADEC through Consultants

The three most recent VSW projects (Beaver, Koyukuk and Pitkas Point) are being designed and constructed under three way contracts among ADEC, the villages, and a consulting engineering firm. There is one contract for design and one for construction management. The design contract specifies the scope of work to be performed by the engineering consultants, sets the compensation rate for design services, and prescribes the procedure by which the village pays the consulting engineer with VSW grant money from ADEC. Under the construction management contract the consulting engineer agrees to manage all activities necessary for construction of a VSW facility, including ordering, scheduling, and expediting all equipment and materials necessary for construction. The village agrees to provide local people to work on the project. The construction management contract also prescribes procedures by which the village pays construction expenses, the consulting engineer's fee, and labor costs with VSW grant funds from ADEC. These three projects have been very satisfactory so far.

Alternative B - Construction Contracts Managed by ADEC through Construction

For two VSW projects (Northway and Chevak), ADEC hired engineering consultants to design and prepare construction contract documents. Construction was done by contractors under competitive bid contracts. These projects were reasonably successful, although the relationship between the construction contractors and the villages was beyond ADEC's control.

Alternative C - State Public Works Construction

Three VSW facilities (Selawik, Alakanuk and Nulato) have been built by traditional state construction methods (i. e. Division of Buildings managing design by consultants and construction by competitive bid contracts). The projects were far more costly than originally estimated and the facilities themselves are unsatisfactory in many ways (see FY 76 Issue Analysis entitled Village Safe Water Projects).

When a construction contractor does a job in a remote Alaskan village, he usually moves a construction camp and crew of "outside" workers into the village. The impact of such a camp on a village is frequently less than beneficial to the village.

Alternative D - Contracts with Native Organizations

This alternative is yet untried. Some of the regional native corporations may develop into organizations capable of managing programs like the VSW program. Conceivably, a Native Corporation could contract with the State to manage VSW projects, either totally or in part. Much planning analysis and negotiation is necessary before this alternative can be fairly weighed, and the native corporate entities need time to become more firmly established.

THREE

VILLAGE SAFE WATER PROGRAM
An Update to January 20, 1977

Introduction

The Village Safe Water Act (AS 46.07), passed in 1970, calls for "at least one facility for safe water and hygienic sewage disposal in each village" in Alaska. Little progress was made in the program until December of 1972 due to lack of funds, inability to hire someone to administer the Village Safe Water (VSW) program, and lack of operation and maintenance provisions. Since 1972, six VSW facilities have been constructed, two more are nearly complete, and another is being designed. In addition, an operation and maintenance support program and a comprehensive planning effort have been organized and initiated.

Construction

The six VSW facilities constructed to date are in the villages of Northway, Chevak, Alakanuk, Selawik, Nulato and Pitkas Point. A facility will be completed in Beaver in January, 1977, and in Koyukuk in February of 1977. A facility for Kongiganak is being designed, and construction is scheduled for summer of 1977.

At the nine locations listed above, the VSW projects consist of central sanitation facilities to which village residents can come to obtain water supply, sewage disposal, bathing and laundry services. No piped water distribution or sewage collection systems are involved except for water and sewer service lines to schools.

Construction methods used so far have included: 1) competition bid construction contracts administered by the Alaska Department of Public Works, 2) competitive bid construction contracts administered by the Alaska Department of Environmental Conservation (ADEC), and 3) force account construction by the villages through construction management contracts with engineering consultants. All facilities so far have been designed by engineering consultants.

The force account/construction management method of construction has been the most satisfactory of the three methods used. Facilities constructed that way have been built cheaper and faster than those built under competitive bid construction contracts; the quality of construction has been better; and the villages have been more intimately involved in, and satisfied with, their projects.

VSW facilities have cost from $350,000 at Pitkas Point (begun in FY 76) to almost $1,200,000 at Selawik (begun in FY 74). Villages served have ranged in size from 85 (Pitkas Point) to over 500 (Selawik).

Operation and Maintenance

Experience in the VSW program has confirmed that virtually any utility system installed in remote Alaskan villages is doomed to eventual failure unless the village is given financial, technical, and/or management assistance. Any program for providing utilities in rural Alaska must either adequately provide for long term operation and maintenance, or expect system failures that adequate operation, maintenance and management could have prevented.

In FY 76, the annual operating budgets for VSW facilities ranged from $28,000 at Northway to over $100,000 at Selawik. ADEC provided a total of about $225,000 in VSW operation and maintenance grants in FY 76 to six villages. In addition, ADEC provided technical and management assistance to the six villages. Although expensive, the VSW operation and maintenance support program has made it possible for all completed VSW facilities to serve the public as intended.

Comprehensive Planning

ADEC is developing a comprehensive plan intended to define the roles of State and federal agencies and other groups involved in providing rural sanitation services. An early step in this planning is to inventory all village sanitation facilities. Completing this inventory is viewed as the cornerstore of the VSW planning effort.

The Ninth Alaska Legislature passed a resolution suggesting that a VSW advisory committee be organized consisting of representatives from the 12 Native Regional Service Associations. This committee would assist ADEC with policy and management decisions concerning the VSW program. The Department feels the advisory committee is a good idea and welcomes increased involvement for the Regional Associations.

Several local, State, federal and private organizations participate either directly or indirectly in providing rural sanitation services. A strong working relationship must be developed among the diverse groups if a comprehensive plan for sanitation services throughout rural Alaska is to be successfully developed and implemented.

Goals and Objectives

VSW Comprehensive Planning

GOAL

To develop a statewide comprehensive program for providing sanitation services in rural Alaska.

PLAN OBJECTIVES

1. Inventory existing water supply and sewage disposal facilities in rural Alaskan villages.

2. Develop criteria for evaluating the adequacy of existing water supply and sewage disposal facilities. identified in # 1 above.

3. Identify existing agency programs providing sanitation facilities to Alaskan villages. Quantify the resources currently available. Identify and describe the technical, management and administrative approaches presently used.

4. Develop criteria to evaluate the effectiveness of these programs.

5. Evaluate the adequacy of technical, management and administrative approaches identified in #3. above.

6. Identify and evaluate alternative technical, administrative and management methods that might be used to address sanitation needs in rural Alaska.

7. Recommend changes in the activities and resources of existing programs to incorporate the alternatives noted in # 6 above. Recommend new programs and/or authority necessary for implementation.

8. Analyze existing methods of operation, maintenance and management of village sanitation facilities.

9. Develop alternative methods for operation, maintenance and management of village sanitation facilities.

10. Recommend changes in the activities and resources of existing programs to incorporate the alternative approaches noted in #9 above.

11. Integrate the findings of the above analysis with the comprehensive plan.

12. With the assistance of the appropriate governmental agencies and Native non profit regional associations, proceed to implement the plan.

PUBLIC INVOLVEMENT & PROGRAM COORDINATION

Because several local, State and federal organizations participate either directly or indirectly in developing rural sanitation facilities, this major planning effort can not be undertaken alone. To insure proper plan development and implementation, a strong working relationship must be developed among the diverse groups currently working on rural sanitation problems.

Public participation and inter-agency coordination must be an integral part of the VSW comprehensive planning process. In this regard, a maximum effort will be made to enlist the active participation of the native regional health organizations, the villages and appropriate federal and state agencies. We hope that by the time a draft of the plan has been formulated, significant public comment and coordination will have been obtained. The results of our collective efforts will be a comprehensive plan for providing rural sanitation services in Alaska.

Principal Contact

For more detailed information on the Village Safe Water comprehensive planning process, please contact:

Greg Capito
Senior Planner
Alaska Department of Environmental Conservation
Pouch O
Juneau, Alaska 99811
Phone: 465-2664

FOUR

STATE of ALASKA

MEMORANDUM

TO: Jonathan Scribner
Director
Division of Water Programs

DATE: September 21, 1978

FILE NO:

TELEPHONE NO:

FROM: Jerry Sargent
Chief
Water Supply Section

SUBJECT: VSW Planning

The VSW planning effort has progressed to a critical juncture. We have been following a set of carefully developed planning objects (see copy enclosed), the first two of which we have accomplished, and we see a way to handle objectives three and four. But now we are all but stalled on the fifth objective.

Greg Capito has written a good summary of our planning efforts to date (see copy enclosed). As you can see, successful accomplishment of objective five is the key to going on with recommendations for improving methods of solving rural sanitation problems.

We could just gloss over the lack of information for evaluating existing sanitations methods, do superficial and subjective evaluations, and crank through the remaining objectives in order to "turn out the plan." But that would be falling into the trap that dooms many planning efforts to failure. If existing sanitation methods cannot be rationally and objectively evaluated by consistent and disciplined methods, arguments for change can neither be supported nor convincingly made. The result is a plan on the shelf gathering dust.

We are looking for fresh insights and ideas anyone might have about how to handle the evaluations. We also want all interested parties to understand our situation. Greg's write-up will be sent to various people like Fred Reiff and perhaps the regional health directors in further search of ideas.

We may be faced with having to gather the information we need by going village to village, with whatever help we can get from PHS staff and people like Jordan. If so, it could take at least a year to do the evaluations alone. Greg is currently working up some time, manpower and cost estimates for possible ways of gathering the information.

ALASKA

VILLAGE STUDY

GOAL

To develop a Statewide comprehensive program for achieving sanitation services in rural Alaska.

PLAN OBJECTIVES

1. Inventory existing water supply, sewage and solid waste disposal facilities in 200 rural Alaskan villages.

2. Develop criteria for evaluating the adequacy of existing water supply, sewage and solid waste disposal facilities identified in #1 above.

3. Evaluate the adequacy of sanitation facilities in 200 villages.

4. Identify existing agency programs providing sanitation facilities to Alaskan villages. Quantify the resources currently available. Identify and describe the technical, management and administrative approaches presently used.

5. Develop criteria to evaluate the effectiveness of these programs.

6. Evaluate the adequacy of technical, management and administrative approaches identified in #4 above.

7. Identify and evaluate alternative technical, administrative and management methods that might be used in rural Alaska.

8. Recommend changes in the activities and resources of existing programs to incorporate the alternatives noted in #7 above. Recommend new programs and/or authority necessary for implementation.

9. Analyze existing methods of operation, maintenance and management of village sanitation facilities.

10. Develop alternative methods for operation, maintenance, and management of village sanitation facilities.

11. Recommend changes in the activities and resources of existing programs to incorporate the alternative approaches noted in #10 above.

12. With the assistance of the appropriate governmental agencies and Native non-profit regional associations, prompt implementation of the plan.

PUBLIC INVOLVEMENT AND PROGRAM COORDINATION

Because several local, State and federal organizations participate either directly or indirectly in developing rural sanitation facilities, this major planning effort cannot be undertaken alone. To insure proper plan development and implementation, a strong working relationship must be developed among the diverse groups currently working on rural sanitation problems.

Public participation and inter-agency coordination must be an integral part of the comprehensive planning process. In this regard, a maximum effort will be made to enlist the active participation of the Native regional health organizations, the villages and appropriate federal and State agencies. We hope that by the time a draft of the plan has been formulated, significant public comments and coordination will have been obtained. The results of our collective efforts will be a comprehensive plan for providing rural sanitation facilities in Alaska.

PRINCIPAL CONTACT

For more detailed information on the comprehensive planning process, please contact:

Greg Capito
Senior Planner
Alaska Department of Environmental Conservation
Pouch O
Juneau, Alaska 99811
Phone: 465-2687

02-0018 (Rev. 10/76)

STATE
of ALASKA

MEMORANDUM

Department of Environmental Conservation

TO: Jerry Sargent
Chief
Water Supply Section

DATE: August 29, 1978

FILE NO:

TELEPHONE NO:

FROM: Greg Capito
Senior Planner
Village Safe Water

SUBJECT: Progress Report-
Alaska Village Study

SYNOPSIS

Developing a rural sanitation program for Alaska is an immense undertaking. But in two (2) years, progress has been made to: 1) inventory existing sanitation facilities in 200 rural villages; 2) develop criteria to evaluate the adequacy of sanitation services in these communities; and 3) establish a working relationship with the diverse groups involved in rural sanitation.

However, the Alaska Village Study has reached an impasse. Our inability to collect the specific and detailed information needed to evaluate sanitation services in 200 remote villages is an immediate problem which must be resolved. If we don't come up with a timely solution, the study cannot be completed.

Another concern is our relationship with the Native Health Corporations. A lack of environmental health and sanitation expertise coupled with chronic staff turnover makes it extremely difficult to maintain a productive relationship with these 12 regional organizations.

The close working relationship with PHS which has evolved over the past two years must also be strengthened. Their level of involvement in the Village study must increase. In fact, the continued support and active participation of PHS are crucial to the success of the planning effort.

Of less immediate importance to the Alaska Village Study but certainly issues to watch include: 1) the passage of SB 449, the Water and Sewer Bond Bill; 2) the rift between AFN and the ANHB; 3) the continuing saga of lab support for the project; and 4) EPA's attempt to buy a piece of the Study.

INTRODUCTION

Building and maintaining water, sewer, and solid waste facilities in rural Alaskan villages is a difficult proposition. Over the years, local, State and federal agencies have invested millions in public funds to protect health by providing adequate sanitation facilities in the bush. These uncoordinated programs are haunted by complex social, economic, political and technical problems which have persisted for years and slowed efforts to develop really effective, long term solutions.

To remedy this situation, ADEC has been leading a drive to develop a comprehensive sanitation program for rural Alaska which will: 1) inventory sanitation facilities in over 200 villages; 2) evaluate the adequacy of these facilities and the agencies which sponsor them; and 3) propose changes in existing programs in order to improve sanitation services in the villages.

For two years ADEC, PHS and the Native Regional Health Corporations have been involved in this Alaska Village Study. What follows is a review of this planning effort with emphasis on problems and progress to date.

THE INVENTORY

This first step in the Alaska Village Study is complete. With help from the rural school districts, PHS and to a lesser degree, the Regional Health Corporations, basic information on water, sewer and solid waste services in 200 villages was compiled. One hundred copies were printed and distributed to people and organizations involved in rural sanitation. By strictly controlling distribution, we hope to make the annual update easier. This November, a call for updated information will go out. Corrections, additions and deletions will be made in December, then reprinted and distributed in January, 1979. Aerial photographs will be added to fill in the gaps.

For us, the Inventory is the cornerstone of the Alaska Village Study. Other uses within the Department include the preparation of revenue sharing forms and answering questions from the Commissioner and others about remote villages - especially during the legislative session. Environmental Analysis has used it extensively in water quality management planning and Facility Construction from time to time has felt the need to consult this document. Except for the preparation of sanitary surveys, the Inventory is rarely used in NRO, SCRO, and SERO. In fact, some staff members have never seen this document!

The real value of the Inventory to others is more difficult to determine. A spot check provides some insights. At PHS, where several copies have been distributed, the document is used to answer questions about facilities in remote villages. However, I don't think it's used day to day as a planning or management tool. A check of the service units reveals that most sanitarians know their villages and do not refer to the Inventory very much.

At BIA, where an increase in staff is noted, the Inventory is used to familiarize new personnel with school sanitation facilities. BIA emphasized that the Inventory is a positive step to improving communication and coordination with other agencies.

Within the Health Corporations use seems to vary. For example, in the North Slope Borough, their Capital Improvements Plan is used instead of the Inventory by the Department of Public Works and the Health Department. At SEARHC, new staff members unfamiliar with the Southeast Region find the Inventory valuable. At the Aleut/Pribilof League, the Inventory is considered a reliable source of information and is used by staff members when discussing sanitation problems with PHS.

At the State level, DOTPF (Facility Procurement) has used the Inventory extensively in its planning program. At the Alaska Energy Office in Anchorage, the Inventory is used on occasion, especially the aerial photographs, to locate existing and potential fuel storage sites in the villages.

At a minimum, the Inventory is a concrete example of cooperation between the Regional Health Corporations, PHS and the State. At a time when most organizations only talk about developing a strong working relationship with other units of government, this is no small item.

Updating the Inventory will be time consuming and laborious, but it's worth the effort.

THE EVALUATION

The second step in the Alaska Village Study is to evaluate the adequacy of the 200 village sanitation facilities identified in the Inventory. This activity is crucial because it should help identify the strong points and weaknesses of village sanitation systems and provide the basis for recommending changes in the programs which provide village sanitation services.

With help from PHS, and to a lesser degree the Health Corporations, an evaluation system was developed. During May 1978, agencies were contacted and dozens of reports reviewed in an effort to obtain the data required to complete the evaluation. It soon became obvious that the specific and detailed information needed could not be found in rural surveys or reports. Data gaps seemed to persist from one report to another. In early June, we contacted people with first hand knowledge of the villages. Based on our experience with the Inventory, the PHS sanitarians seemed most likely to have the information we needed. We focused our attention on the Doyon and Calista regions which contain one half of the rural villages in the State. In mid June I visited the Bethel Service Unit and interviewed two (2) field sanitarians. Each had about 3½ years of experience in the Delta. However, during two days of interviews, a serious problem was encountered. The sanitarians could not provide the specific and detailed information we need on villages in this region. They had no data on O&M, village economics, the reliability of village power or even basic health information for Grayling, Marshall, Shageluk, Holy Cross, Mt. Village, and Pilot Station. In Anvik and several other villages, they couldn't identify the preferred source of drinking water. These are several reasons for this lack of information:

1. Usually when sanitarians visit a village, it's for a specific purpose like vaccinating dogs or inspecting the health clinic. They aren't trying to answer questions concerning the economics, acceptability, or accessibility of a sanitation system.

2. In the more remote portions of this region, villages are visited only once a year and it's difficult to really evaluate sanitation services after spending so little time in a community.

3. Our evaluation system is very detailed and specific. The sanitarians have never examined village sanitation methods in this fashion. They can generalize based on their experience but the evaluation system demands much more.

Two PHS field engineers were then interviewed with similar results. The most glaring information gaps involved village economics. They had no idea of how villages obtained funds to pay local operators or sustain the facility from day to day. However, the engineers felt strongly that unraveling the mystery of village finances and spending priorities was the most important feature of the evaluation.

A few weeks later I tried another approach. I accompanied experienced AVCP employees to three (3) villages in an effort to collect this hard to get information. Enough data was obtained to complete three (3) evaluation forms in one (1) week. So even though this method was expensive and very time consuming, it works and we have the best information available on these village sanitation systems.

In mid August I was invited to the Inupiat Health Board Meeting in Barrow and tested yet another approach. For two (2) days I tried to interview individual Health Board members during meeting breaks to evaluate sanitation services in their villages. If this approach worked, it would expedite the review of sanitation facilities in 200 villages. However, I ran into a serious problem using this method. There was little time available to interview Health Board members. Fifteen or twenty minutes is barely long enough to get acquainted. During these short periods, I could get only a sketchy idea of what was happening in the villages. A good evaluation would probably take several hours if done by interview. Since most of the Health Board members were staying with friends, there weren't any other opportunities to meet later and talk about water and sewer problems. So I determined that this was not the way to collect the information needed to evaluate sanitation services in the villages.

Another approach is worth mentioning. This involves training qualified individuals to evaluate the adequacy of sanitation services. Initially, this idea was attractive because sanitarians, community liaisons and the like live in the regions, know the people and visit the villages, so if the evaluation could be incorporated into their travel schedules, we might save money and obtain some valuable information. However, this idea has not panned out because of the inherent quality control problems. The AVCP trip cited above really brought home just how persistent one must be to collect information by visiting the villages. I can't think of a qualified person in the Doyon or Calista regions with enough time and dedication to do this job right.

In summary, we recognized early on the lack of water quality and health data in the villages, but did not foresee similar problems collecting the other information needed to complete the evaluation. Given the size of this project and the time element involved, we are really in a bind. If we don't come up with an efficient way to collect this hard to get information, the study will be jeopardized.

COORDINATION

Because many local, state and federal organizations participate either directly or indirectly in providing rural sanitation services, the Alaska Village Study cannot be undertaken alone. To insure proper plan development and implementation, a strong relationship must be developed among the diverse groups currently working on rural sanitation problems. Keep in mind we must enlist the support of these diverse groups by persuasion since we have no authority over them. While it is impossible to effectively coordinate our activities with every group, we identified a few key organizations and opened lines of communication with them. The 12 non-profit Native Regional Health Corporations immediately attracted our attention because their responsibility is to represent Alaska Native people in all health related matters. In addition, they were by far the best organized group in the regions. At the federal level, the Office of Environmental Health within PHS has designed and constructed sanitation facilities in Alaska Native villages since 1962 and is still the lead agency in providing these services. To a lesser degree, we have also worked with BIA, HUD and EPA as well as AVCP and a few other regional organizations. What follows is a review of the working relationship we've developed with these groups.

Regional Health Corporations

House Concurrent Resolution #110 adopted by the Ninth Alaska Legislature suggested the formation of an advisory committee for the VSW program. This group, consisting of representatives of the 12 Regional Health Corporations would advise and assist in the administration of the VSW program. In Feburary 1977 the Association of Regional Health Directors unanimously endorsed this idea and became our Advisory Board. Their first activity was to assist the Department in selecting candidate villages most in need of a VSW facility. This was a very difficult task because only one or two facilities could be built and 12 regions were competing for limited funds. Prioritization was done by examining background data on each village. This information was then placed in perspective by evaluating each community's prospects for sanitation improvements. After several weeks of deliberation, a priority list was drafted. On the whole this process worked very well. In fact, one Health Corporation not present had a village from its region placed at the top of the list! We've followed the Advisory Board's recommendations and VSW facilities are being built at Council and Tanana.

Late in 1977, the Health Corporations also helped provide basic information for the Inventory of Rural Sanitation Services. I spent many hours in their regional offices interviewing staff and identifying sanitation facilities in 200 rural villages. The Health Corporations were cordial and very generous with their time.

However, some serious problems have surfaced in our dealings with the Health Corporations The first is turnover which has reached epidemic proportions. The average "life expectancy" of a health director is about eight months. Staff turnover is even greater and with so many people coming and going, it's almost impossible to maintain continuity and an effective working relationship with the 12 regional organizations.

Secondly, while sanitation is a big concern within the regions, most organizations do not have technical staff to address these problems. (Only Norton Sound employs a sanitarian.) Currently, the Health Corporations administer accident prevention, alcohol abuse, health aide, manpower, mental health and similar programs. So it's difficult to talk to them about evaluating the adequacy of sanitation facilities in the bush. As a result, little time has been spent with the Health Corporations on this important activity and communication has deteriorated over the last six months.

Finally, there has been internal squabbling within the non-profit corporations which may have a serious impact on our planning effort. AFN and the Alaska Native Health Board (ANHB) are struggling to decide who speaks for Native people on health issues. To firm up its power base, the ANHB apparently dissolved its standing committee, the Association of Regional Health Directors (ARHD), which acts as our Advisory Board. From now on the ANHB will formulate rural sanitation policy and the ARHD will only address regional problems. Already I've noticed that the Health Directors meet less frequently, and there's a real question about their ability to help us set construction priorities this fall. We need an advisory board made up of people that work day to day with village sanitation problems like the ARHD. We look to them for professional and technical involvement in establishing VSW program strategies. The ANHB is a lay group without technical expertise or staff and it will be extremely difficult to work with them on issues which require technical expertise and an intimate knowledge of the villages.

PHS

In the last two years we've spent hundreds of hours with PHS. Fred Reiff has been cordial and generous with his staff time. He appointed Lynn Wallace to work on the Alaska Village Study with us. Although this relationship is informal, we have made progress on the Inventory and to a lesser degree, the evaluation. Despite some strong philosophical differences, there seems to be considerable trust on both sides.

Continued PHS support of the Alaska Village Study is crucial because they are the lead agency in providing rural sanitation services and, as such, must play a major role in implementing any study recommendations which may be forthcoming. They also have by far the biggest and most talented staff available to help with the Study. The working relationship developed over the past two years must be strengthened as we move onto the more difficult areas of the Study.

When Lynn's replacement reports for duty this fall, we'll have to meet with Fred and see if we can secure more of a commitment. That should not be difficult if PHS perceives the Study as a valuable and essential part of their program. If Fred agrees to increase their level of involvement, there's hope for the future. If not, the Study will be jeopardized.

EPA

EPA involvement in the Alaska Village Study began early in 1977 when Senator Mike Gravel asked ADEC for ways to improve P.L. 92-500, the Federal Water Pollution Control Act of 1972. We responded with a carefully worded amendment to Section 113 which: 1) confirmed the State's position as the lead agency in trying to develop a comprehensive rural sanitation program; and 2) required all appropriate federal agencies to assist the State in developing the plan and obligated them to implement it. The amendment we originally proposed called for the President to direct federal agencies to participate in the study. But the Congress changed that and directed EPA to conduct the study. Congressional staff who made that change probably thought it would be negligible but it was the beginning of our problems with the Environmental Protection Agency. From this point on, the State's established position as the lead agency in developing a rural sanitation program for Alaska was in direct conflict with what EPA perceived as their new statutory responsibility under Section 113 of the Act.

Early in 1978, EPA officials remained in the dark about the Alaska Village Study. No directives, guidance or funds were forthcoming from headquarters. We then began to work with EPA officials in Anchorage to: 1) explain the objectives of the Study; 2) help define EPA's role in the project; and 3) secure federal support to help continue the work with authorizations we drafted into Section 113.

In May 1978, these issues were discussed at a meeting in Juneau with EPA Region X officials. At this meeting, EPA's role in the Alaska Village Study was defined as: 1) representing the federal government's regulatory interests; 2) motivating recalcitrant federal agencies (if any) to participate in the study; and 3) managing the typing, printing or other administrative tasks and submitting all reports required by the Act. It was reaffirmed that independent action by EPA would be counter-productive. Bob Burd and Ed Coate of Region X agreed with this position and seemed relieved that the State was able and willing to assume responsibility for directing the Alaska Village Study.

As to the question of funding, we learned that EPA officials had simply neglected to request the funds available under Section 113 and support for the project had "simply fallen into a crack." Neither was lab support possible because Region X couldn't handle the additional work load.

Clearly, the lack of lab support has slowed our progress. However, in retrospect, the loss of funds may have been a blessing in disguise. The paper work and bureaucratic red tape generated by an EPA grant would force us to spend considerable time on purely administrative tasks and less on doing the actual work. In addition, during the past two years we've learned you simply can't buy agency support for this project. Neither can the assistance of competent, qualified, professionals in the rural sanitation field be purchased, because most are already employed by organizations like BIA and the U.S. Public Health Service.

At this point in time there's a real question whether EPA can make any substantive contribution to the project. As a consequence, I think we should stand firm and resist any effort by EPA to buy a piece of, or become directly involved in, the Alaska Village Study.

Other Agencies

From time to time we've worked with HUD and BIA. Both have been cordial and cooperative. These organizations are indirectly involved with rural sanitation in the bush. Later in the Study, when we evaluate programs, we'll spend more time with them.

Since Jordan Suhr moved to Bethel to work with AVCP, we've taken a real interest in their IHS Feasibility Study. Jordan has agreed to help us evaluate sanitation facilities and does so when he visits the villages. But so far he has sent only 5 or 6 forms. When visiting a village he interviews the plant operator and evaluates the system while the AVCP economist does his thing with the village administrator. At the end of the day, they mingle with residents. Even though that approach is expensive, time consuming and laborious, it works and they have collected the best information available on village sanitation systems. However, Jordan points out that only 15-20 communities will be visited this summer because of financial and manpower constraints.

OTHER ISSUES

Laboratory Support

Early on we recognized that more data was needed to evaluate the adequacy of drinking water supplies in the villages. PHS agreed, for the Inventory revealed their information was spotty. However, lab support would be needed to analyze the drinking water of 200 rural villages. The saga began last March with the ADEC lab in Douglas. They couldn't help with a project of this size because bottle washers were in short supply. In May, there was a promise of support from EPA. Apparently Section 113 funds were available to assist us in obtaining lab support. After several weeks EPA notified us they couldn't help after all because funds had not been requested. (Meanwhile, the field season continues to slip by.) The U.S.G.S. was consulted in late June but their cost estimate was prohibitive. In July, with hopes fading, PHS decided to contract with a private outfit for laboratory service. The cost would be split 50/50 with ADEC reimbursing PHS when State funds became available. However, PHS couldn't simply go out and hire a chemist. The OEH contracting officer got involved and the matter has been tied up for months. Meanwhile, back at the Douglas lab, work had slackened, (with fall approaching), and they agreed to provide limited support until the PHS contract is awarded. The trail of tears continues into September with full time lab support just a dream (or memory).

The humor of this incident is lost when one considers how vital laboratory support is to the future of the Alaska Village Study--and how little control we have over the outcome.

SB 449

The Alaska Village Study has encouraged communication and thus helped to minimize duplication of effort in facility construction. But the 1978 Water and Sewer Bond Bill is a giant step backward because it directs ADEC to spend public funds in 11 rural communities, even though PHS has or soon will install sanitation services in each of these villages. In addition, the Legislature has dictated 11 project sites and thus undermined our relationship with the VSW Advisory Board, which in the past has been heavily involved in selecting communities most in need of a VSW facility. Finally, SB 449 is contrary to our policy of going slow on new construction--until the Village Study is completed and solutions to difficult questions like operation and maintenance are proposed.

In summary, SB 449 is a bad piece of legislation. It may complicate and seriously disrupt our efforts to develop and implement a rational program for addressing rural sanitation problems in Alaska.

CONCLUSIONS

This progress report has identified several important issues which may affect the outcome of the Alaska Village Study. Despite their potential impact, we have little control or influence over them. These include 1) timely lab support for the project; 2) passage of SB 449; 3) the rift between AFN and the ANHB; and 4) chronic staff turnover within the health corporations. We can exert some influence over three other issues mentioned in the report. These are: 1) EPA involvement in the project; 2) the problem of data collection; and 3) greater PHS participation.

With all of these factors at work, chances for completing the Study are 50/50 and less than that for making the December 1979 deadline.

FIVE

by J. W. Sargent, with J. W. Scribner

Village Safe Water Projects in Alaska

—Case Studies—

DEFINITION OF PROGRAM

HISTORY

Like other areas of the country, Alaska draws the traditional distinction between urban and rural areas. Here, the urban areas are concentrated around the major municipalities such as Anchorage, Fairbanks, Juneau and Seward. The remainder of the State is defined as rural and is often referred to as the "bush." Providing sanitation services (primarily water supply and waste disposal) in the bush is quite a different proposition from providing such services in the cities. In the past, state and federal assistance for such services has been provided to urban areas through a series of programs that have differed from those in the bush.

Municipal Water and Sewer Grants

Communities in Alaska can receive financial assistance for installing water supply and waste disposal systems through the State Water and Sewer Construction Grants program. Through this program, both federal and state funds are available for municipal sewage treatment and disposal, interceptor sewers, sewage collection and water supply. Communities receiving these funds are requested to provide matching funds in varying proportions. This "matching fund" proviso of the Construction Grants program has, naturally, limited its success and impact in bush Alaska.

Bush Programs

Until 1970, the only active program for providing sanitation services in rural Alaska was the U.S. Public Health Service, Indian Health Service, Office of Environmental Health. In the late 1960's Senators Ted Kennedy and Ted Stevens toured rural Alaska and were appalled at the lack of sanitation services in bush villages. Their reaction to this sorry condition was the promotion of a combined federal and state program to answer the need for rural sanitation services.

The federal program was the Alaska Village Demonstration Project (AVDP).[1] The state program was the Village Safe Water (VSW) program. Simply stated, AVDP was to construct two projects which were to demonstrate the best way to supply rural sanitation services; the State was to follow this up by building sanitation systems that were developed by AVDP.

THE VILLAGE SAFE WATER ACT

The Village Safe Water Act of 1970 was passed for the purpose of providing "safe water and hygienic sewage disposal facilities in villages in the State," and "to assure that there will be at least one facility for safe water and hygienic sewage disposal in each village." The Act stipulates that each facility will provide at least a safe water supply, means for sewage disposal, and bathing and laundry services. A village is defined as "an unincorporated community which has between 25 and 600 people residing within a two-mile radius; or a second class city." The VSW act is administered by the Alaska Department of Environmental Conservation (ADEC).

A village receiving a VSW project is not required to contribute toward costs of construction. The State may "provide for construction by contract or through grants to public agencies or private nonprofit organizations, or otherwise."

When a VSW facility is completed, the recipient village must be given title to it. The village must agree to accept ownership of the facility and be responsible for its operation and maintenance. The State

[1] *The Alaska Village Demonstration Project was treated in some depth in Volume 7, number 2,* The Northern Engineer.

TABLE 1
Villages Receiving VSW Facilities

Village	Location N. Lat.	W. Long.	Pop.	Mean Jan. Temp, F°	Mean Annual Temp, F°
Northway	62°58′	141°56′	40	-24°	+22°
Chevak	61°32′	165°35′	447	+ 2°	+29°
Nulato	64°43′	158°06′	330	-16°	+25°
Selawik	66°36′	160°00′	521	-16°	+22°
Alakanuk	62°41′	164°34′	512	- 3°	+28°
Pitkas Point	62°02′	163°67′	85	- 3°	+28°
Koyukuk	64°53′	157°42′	124	-16°	+25°
Beaver	66°22′	147°24′	101	-20°	+30°
Kongiganak	59°52′	163°02′	200	+ 2°	+30°

may assist a village with operation and maintenance expenses when the local governing body lacks sufficient financial resources.

VSW CONSTRUCTION EXPERIENCES

Description of Projects

By the end of fiscal year 1977, Village Safe Water sanitation facilities will have been constructed in nine Alaska villages. Table 1 lists the nine villages and the data on them concerning population, location and climate.

The VSW project goals in all nine of the villages will be the construction of *central* sanitation facilities. A central facility is a building from which the various sanitation services are dispensed (e.g., a faucet for filling a water bucket or barrel, a dumping bin for "honey buckets," clothes washers and dryers, showers, and rest rooms). The central facility concept contrasts with that of providing these services to individual homes through a piped distribution and collection system. In some communities, factors such as permafrost conditions, climate and community layout might make a central facility preferable to community distribution and collection systems.

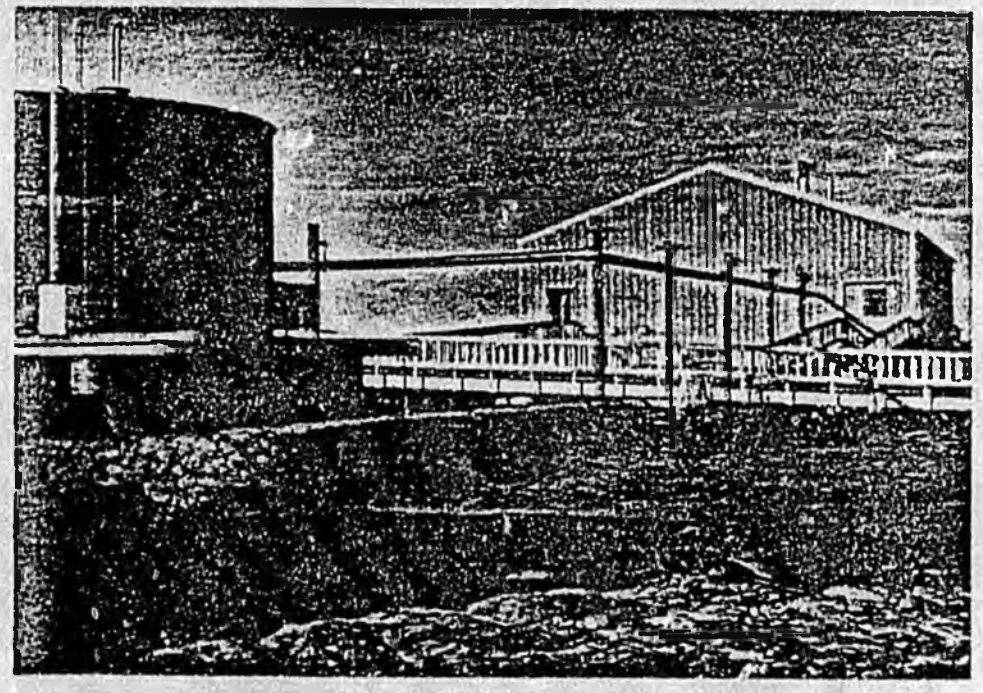


FIGURE 1. Alakanuk Village Safe Water Facility.

Northway and Chevak

At Northway and Chevak, existing community watering points were improved and laundry equipment and showers were added. Wastewater from the Northway facility (containing no toilet waste) is discharged to a small natural pond. Chemical toilets are emptied into a Federal Aviation Administration sewage treatment system several miles away. At Chevak, wastewater is discharged to a sewage lagoon. These facilities were designed and constructed under contracts administered by ADEC.

Nulato, Selawik and Alakanuk

The sanitation facilities in these villages were the first full fledged ones constructed under the VSW program.

In each village, a new state school and the VSW facility were designed and constructed under joint contracts administered by the Alaska Department of Public Works. All three VSW facilities were patterned after the Alaska Village Demonstration Projects in Emmonak and Wainwright. The VSW facilities are two-storied structures approximately 55 feet square, built on piles. They contain washers and dryers, showers, saunas, rest rooms, solid waste disposal bins, honey bucket dumps and a watering point.

In all three facilities, water treatment is by alum coagulation/flocculation, rapid sand filtration, and chlorination. The water treatment plants are standard Met-Pro physical/chemical package plants with a 14,000 gpd capacity.

The sewage treatment plants are also 14,000 gpd Met-Pro physical/chemical package plants, in which the unit processes are alum coagulation/flocculation, carbon sorption, rapid sand filtration, and chlorination. Treated effluent is dis-

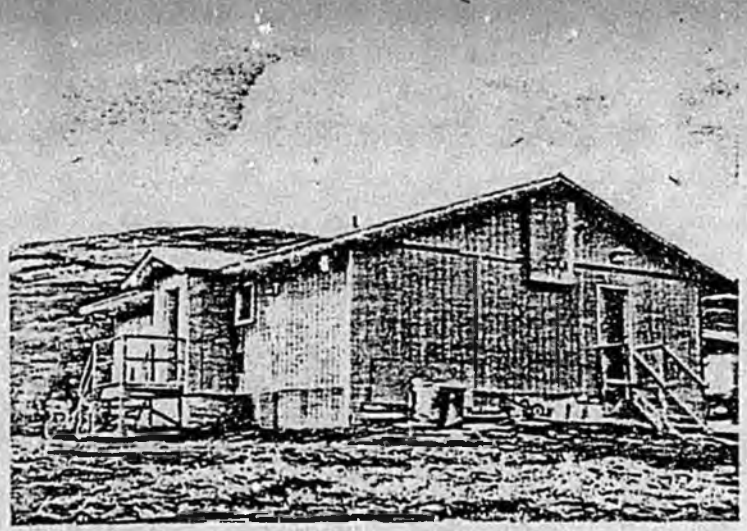


FIGURE 2. Pitkas Point Village Safe Water Facility.

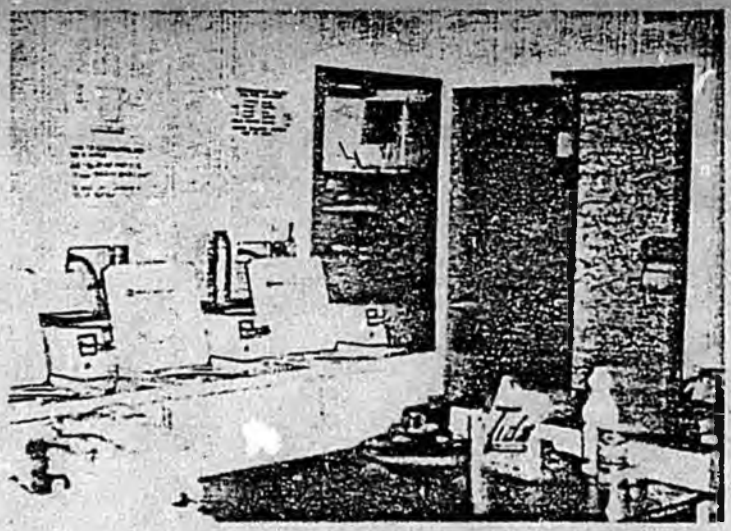


FIGURE 3. Pitkas Point Laundry Room.

charged to the land surface through an elevated, insulated and heated conduit.

Sludge from both the water and sewage treatment plants is dewatered by centrifugation and incinerated. Solid waste from the solid waste collection bins is also incinerated.

In each facility the primary source of building heat and heat for the dryers is a heat exchanger on the incinerator stack. A hot water boiler is the secondary heat source, and a hot air furnace is the "last ditch" source of building heat in case the incinerator and boiler fail or are inadequate. The incinerator, boiler and hot air furnace are interconnected through complex control systems which have been very difficult to keep operating properly.

At Nulato neither one of the treatment plants has performed consistently well since the facility was completed in November of 1974. Sludge build-up has caused severe reductions in the capacities of both plants. Since the main water treatment requirement is the removal of iron (28 mg/l) and manganese (5 mg/l), the physical/chemical process that was installed was probably not the best choice. At Selawik and Alakanuk, raw water is obtained from surface sources, and the treated water has been of good quality since the facilities were completed in October 1975 and December 1975, respectively. The sewage treatment plants are also operating well.

Pitkas Point, Koyukuk, Beaver and Kongiganak

The Pitkas Point project was completed in February, 1976. This facility is built with relatively simple mechanical and structural systems compared to the big and sophisticated installations at Alakanuk, Selawik and Nulato. The structure is wood frame with about 1300 square feet of floor space. It provides a watering point, honey bucket dump, washers and dryers, rest rooms, showers and saunas.

Raw water from a creek bed collection gallery is filtered (when raw water quality requires it) through a bed of sand and activated carbon; then it is chlorinated and fluoridated. Sewage receives secondary biological treatment in Multi-Flo package plants. These plants consist of an aeration chamber and a filter membrane for solids separation. Treated effluent is discharged to an underground leach field.

Unique construction methods were used at Pitkas Point. The State, through ADEC, gave a grant to the village. The funds were used to hire consulting engineers who were to design and manage the construction of the Pitkas Point facility. ADEC helped the village negotiate and administer the consulting contracts.

The projects at Koyukuk, Beaver and Kongiganak are being patterned after the relatively successful Pitkas Point project.

COSTS

Table 2 summarizes capital construction costs for VSW projects to date. The costs shown include both design and construction. The figures for Koyukuk, Beaver and Kongiganak are preliminary estimates.

OPERATION AND MAINTENANCE

The construction of any utility system, especially in the relatively harsh environment of rural Alaska, is money wasted unless provisions are made for the system to be properly operated and maintained. Most, if not all, villages lack the necessary resources to administer, manage, operate and maintain even a minimum VSW facility (or any other utility system for that matter) without continuing outside assistance.

A facility to provide the services specified by the Village Safe Water Act must contain relatively sophisticated equipment and appliances. Since public health is at stake, water and waste treatment systems must be kept operating properly at all times. Hence, at least one full-time trained and paid maintenance person must attend every VSW facility.

Virtually all of the maintenance people have to come from the villages where VSW plants are installed because "outsiders" are usually reluctant to take up residence in remote villages. Since people with the training and experience neces-

TABLE 2
Capital Construction Costs For VSW Projects

Village	Cost (in thousands of dollars)
Northway	60 (VSW contribution)
Chevak	75 (VSW contribution)
Nulato	860
Selawik	1100
Alakanuk	1000
Pitkas Point	350
Koyukuk	440
Beaver	450
Kongiganak	550

sary to operate and maintain a VSW facility are usually not available locally, an elaborate, extensive and ongoing program for training of plant operators is required.

A continuous and generous flow of revenue is required to meet the operation and maintenance expenses of VSW facilities. In addition to the plant operator(s)' salary, there are treatment chemicals, electricity, fuel and replacement parts to buy.

Table 3 lists the estimated annual operating budgets (FY 76 figures) for VSW facilities completed as of February, 1976. The figures in Table 3 exclude amortization of capital costs.

Sources of revenue in the villages are limited. Individuals who use the VSW facilities will pay fees, but the fees cannot be so high that people can no longer afford to use the facilities. Up to $2000 dollars per month might be raised through users' fees in larger villages (400 to 500 residents) and proportionately less in smaller towns. Public Health clinics, some owned by the U.S. Public Health Service and some owned by the villages, might receive water supply and waste disposal services from VSW facilities and thus pay users' fees, but the revenue collected in this way would not exceed more than a few hundred dollars a month. Fees paid for school water and sewer services represent a third source of revenue which could routinely amount to about 25 per cent of the VSW facility operating budget. So, as a general rule, more than half of the money needed to operate VSW facilities will have to come from outside the villages.

TABLE 3
Operating Budgets For VSW Facilities

Villages	Annual Operating Budget (FY 76) (thousands of dollars)
Northway	28.0
Chevak	37.5
Nulato	109.0
Selawik	109.0
Alakanuk	109.0
Pitkas Point	46.0

CONCLUSION

The Village Safe Water program grew out of recognition of the critical need for adequate sanitation services in rural Alaska. Providing such services involves two major efforts: (1) capital construction, and (2) operation and maintenance. Of the two activities, operation and maintenance have proved to be the more difficult in the VSW program.

The technological problems associated with providing water supply and waste disposal services in the Arctic are indeed unique and challenging. But by far less tractable are long term operation and maintenance problems such as finding enough money to pay the bills, keeping mechanical equipment operative at remote sites, and managing personnel from great distances without reliable communications.

Without dependable provisions for operating and maintaining sanitation facilities in rural Alaska, constructing them is wasted effort.

Dr. Jerry Sargent is a Sanitary Engineer with the Alaska Department of Environmental Conservation, Pouch C, Juneau, Alaska.

Jon Scribner is the Water Programs Director with the Alaska Department of Environmental Conservation.

Again, we are grateful to Dr. Dan Smith, Head of the Northern Technology Centre, for allowing us to publish this article which was originally given at the Utilities Delivery Symposium last spring.

	(1) Project Cost	(2) 78 O&M Budget (in villages not central)	State O&M Grant (78)	(3)/(2) x100 (%)
Northway	610	25.8	19.0	74
Chevak	75.0	43.3	37.0	85
Alakanuk	1000.0	(on this one)	none	-0-
Selawik	1100.0	98.1 (69.1)	72.0	74
Nulato	860.0	72.0 (162.2)	none	-0-
Beaver	450.0	35	24	68
Koyuk	440.0	32.7	22.0	67
Pilot Station	350.0	55.4	33.8	61
Council	118.5	10.0 (operator gets free place on fuel pmt)	none	-0-
Tanana	105 ~~0~~ 0 (VSW portion)	75.0 (est)	none	-0-
Kaltag	1288.0	80 (est. 1M) 79	45 (est)	56
	~~H 0.8 mm~~	~~H 550.0~~ 522.3	~~260.0~~ 370.0 — including Central Acct	~~65~~ %

2 2 2 235
1310
790
1168
1288
6791

Table 11 -

CONSTRUCTION & OPERATING COSTS FOR CENTRAL FACILITIES

Community	Population	Year Completed	Capital Construction Cost (Values in thousands of dollars)	Annual Operating(1) Budget 1977
EPA Wainwright I	341	1972	910.0	46.5
Wainwright II		1976	1516.0	N/A
Emmonak	545	1976	780.0	75.6 (1973-76)
Northway	40	1974	60(2)	31.4
Chevak	447	1974	75(2)	39.5
Nulato	330	1976	860.0	85.7
Selawik	521	1976	1100.0	113.3
Alakanuk	512	1976	1000.0	85.0(3)
VSW Pitkas Point	85	1976	350.0	60.4
Koyukuk	124	1977	499.6	60.0(3)
Beaver	101	1977	480.4	34.8(3)
Kongiganak	200	1978	950(3)	76.1(3)
Tanana	450	1979	925(3)	68.9(3)
Council	25	1978	105.5(3)	9.0(3)

(1) Does not include amortization
(2) State of Alaska contribution
(3) Estimated

(4) Capital costs include design, const, materials, transp & agency personnel time.

discuss a typical facility only - give service provided, typical costs, O&M personnel, costs, service costs.

See over

alaska federation of natives, inc.

550 West 8th Avenue ▪ Anchorage, Alaska 99501 ▪ Phone 907-274-3611

January 16, 1978

Mr. Ernst W. Mueller
Commissioner
Dept. of Environmental Conservation
Pouch O
Juneau, Alaska 99811

Dear Mr. Mueller;

Thank you for the excellent publication on Village Sanitation in Alaska. We at Alaska Federation of Natives, Inc. and the twelve regional health directors are very impressed with the work done in this area. This publication will go a long way in getting the best possible facilities for our rural areas.

The regional health directors, and myself, found working with your office a real pleasure. We especially would like to commend Greg Capito, on his brief but complete presentations he has made to our group. His manners and professionalism is a tribute to you and your office. Mr. Capito, will always be welcome to our meetings and will be well received by the villages he helps.

Once again thank you,

Very Truly Yours,

ALASKA FEDERATION OF NATIVES, Inc.
Health Affairs Technical Assistance

Fred Wemark
Director

cc: Greg Capito

FW/sb

ALASKA FEDERATION OF NATIVES, INC.

Integrity, Pride in Heritage, Progress

April 19, 1977

The Honorable Jay Hammond
Govornor
State of Alaska
Pouch A
Juneau, Alaska 99811

Re: Village Safewater

Dear Govornor Hammond:

House Concurrent Resolution #110, adapted by the Ninth Alaska Legislature, suggested the formation of an advisory committee for the State's Village Safewater (VSW) Program. This group, consisting of representatives of the 12 Native Regional Health Corporations, would advise and assist the Alaska Department of Environmental Conservation in the administration of this rural sanitation program.

At a regularly scheduled meeting of the Association of Regional Health Directors (ARHD) in Anchorage on February 24, Senior Planner Gregory Capito of the Village Safewater Program, made a presentation to the group. His main purpose was to find out if the A.R.H.D. would act in an advisory capacity for the VSW program. Mr. Capito presented the advantages and disadvantages of being an advisory board. The Association of Regional Health Directors unanimously endorsed this idea and requested that the VSW program be expanded to provide sanitation services to remote Alaskan communities.

It is our sincere hope that through this advisory group, we can work together to address the critical sanitation problems facing rural Alaska.

Yours truly,

ALASKA FEDERATION OF NATIVES, INC.
Health Affairs Technical Assistance

Fred Wemark
Director

cc: * Greg Capito
A.R.H.D.

FW/eh

• 550 WEST EIGHTH AVENUE ANCHORAGE, ALASKA 99501 • PHONE (907) 274-3611

2

RESOLUTION
77-02
*****

WHEREAS, the intent and purpose of the Office of Environmental Conservation is to establish and insure standards of water quality and environmental sanitation; and

WHEREAS, the Village Safewater Program is a mechanism whereby the Office of Environmental Sanitation can assist local communities in meeting standards established by the Office;

NOW THEREFORE BE IT RESOLVED, that the Association of Regional Health Directors advises the State Legislature of the importance of maintaining within the Office of Environmental Conservation the capacity of assisting local communities of meeting standards of environmental health by continuing the Village Safewater Program through the Office; and

BE IT FURTHER RESOLVE that the transfer of Village Safewater Program to the Division of Transportation and Public Facilities is likely to reduce the effectiveness of the Office in promulgating acceptible standards of environmental sanitation.

_____
Robert Clark, Chairman

_____
Fred Wemark, AFN, INC.

Acted upon and passed by unanamous vote on April 15, 1977.

STATE OF ALASKA
DEPT. OF ENVIRONMENTAL CONSERVATION

JAY S. HAMMOND, GOVERNOR

POUCH O — JUNEAU 99811

February 18, 1977

Bob Worl, Executive Director
NORTH SLOPE BOROUGH HEALTH DEPARTMENT
P.O. Box 69
Barrow, Alaska 99723

Dear Bob:

RE: Rural Sanitation

Please recall the recent meetings with you or your staff concerning two or three Village Safe Water (VSW) Facilities to be built this year in Alaska Native villages. As discussed earlier, we would like you to help us select a village in your area most in need of a VSW project.

Since 1970, the Department of Environmental Conservation has sponsored construction of nine VSW facilities. Hence, we have some experience to share with you that might help in selecting a village.

First of all, remember that we build central facilities where people come to get water, deposit waste, bathe and do laundry; as opposed to piped water and sewer service to each house usually installed by the U.S. Public Health Service. Physical features are important in deciding whether a piped system or central facility is appropriate. For example, ice-rich permafrost or swampy terrian make it technically and economically difficult to construct a conventional piped system. Also, in a village spread out along both sides of the river, a piped system may be too difficult and expensive to install. Therefore, villages in your region which possess these types of physical characteristics may be better suited for a centralized VSW system.

To minimize duplication of effort, please do not consider those villages in your region which have received, or are likely to receive, HUD housing and thus PHS water and sewer systems. Also, please note that a VSW facility should not be constructed in a village where a PHS system already exists.

The size of the community is also important. The Village Safe Water Act, as it will probably be amended, defines "village" as an incorporated or unincorporated community which has between 25 and 600 people residing within a two mile radius.

Perhaps the single most important factor to consider is how a village obtains its water supply. For example, melting ice or collecting rain for drinking water is more inconvenient and unsafe than having a good quality, year round stream close by.

YUKON-KUSKOKWIM HEALTH CORPORATION

a spark of interest?

P. O. Box 528
Bethel, Alaska 99559
(907) 543-3321

RECEIVED
JAN 18 1979
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

January 9, 1979

The Honorable George H. Holman
State of Alaska, State Legislature
Pouch V
Juneau, Alaska 99811

Dear Senator Holman:

A copy of Ernst W. Mueller's letter to you, dated December 15, 1978 was forwarded to Jim Martin, Deputy Director of the Yukon Kuskokwim Health Corporation. Jim passed the letter on to me because one of my departments is involved with the problems of safe water and sanitation in the villages. In attempting to provide information and offer advice, the department also receives complaints and tries to help villages with the many water and sanitation problems they have.

good ideas

As you are well aware efforts to provide VSW facilities in the past have met with only moderate success. The past pattern of failure, or partial failure, seems likely to be repeated as a result of the new water and sewer bond bill (S.B. 449) which was approved on November 7, 1978. I assiduously second the comments made by Ernst Mueller regarding the need for comprehensive planning.

I am especially concerned that in spite of the construction of facilities in the so many villages still lack the minimum necessity of safe water to drink and isposal of their sewerage, especially when the lack is due to poor planning. I like to present the following points for your attention.

1. The importance of a VSW feasibility study for each village cannot be over emphasized. This is especially important if no funds for repair, maintenance or operation are to be forth coming

   a. The planned facility should not require more funds for upkeep than the village can reasonably provide - or are willing to provide.

   b. The facility should not require a larger maintenance crew than the village can supply.

   c. The facility should not require greater skill to operate, than the village has available.

   d. The facility should not require more power to operate, than the village can produce.

   e. The facility should have been tested regarding its suitability to the climate and terrain of the individual village.

2. Providing facilities with no regard to the need for on-going upkeep of the facilities is at best, a half measure towards alleviation of the problem. The upkeep is a separate entity which perhaps should be covered by a second bill which would provide for:

   a. The cost of major repairs.

   b. A subsidy which may be based on the ability of the village to maintain the facility.

   c. On-going training programs for maintenance crews.

I hope these comments and observations will be of interest to you and hope you will contact me if I can be of help at any time.

Sincerely yours,

Jillian L. Loschky

Jillian L. Loschky
Assistant Health Director

JL/ds

cc: Ernst W. Mueller
Jim Martin

YUKON-KUSKOKWIM HEALTH CORPORATION

P. O. Box 528
Bethel, Alaska 99559
(907) 543-3321

January 19, 1979

The Honorable George H. Hohman
State of Alaska, State Legislature
Pouch V
Juneau, Alaska 99811

Dear Senator Hohman:

With reference to a letter I sent you, dated January 9, 1979, I would like to retract comments I made in paragraph two and point one, of that letter.

I erroneously used the phrase "VSW Facilities," when in fact I should have identified Public Health Service installations, which are actually the facilities presenting problems in the past. Greg Capito, Senior Planner, of the Village Safe Water Department of Enviornmental Conservation, called me today. Having seen my letter to you, he was understandably concerned to find the VSW project had been unjustly vilified. All the VSW facilities are in good working order.

Please accept my regrets for the error.

Sincerely,yours,

Mrs. Jillian F. Loschky
Assistant Health Director

cc: Greg Capito
Jim Martin

Greg -

4/19/74

I, too, apologize for the wrongness of terminology the result of which was to unfairly criticize your program.

I reviewed the letter Jillian Lashley wrote to Sen. Hohman and failed to catch the mistake myself.

You've always been most cooperative and certainly we have no quarrel with you. Jim

YUKON-KUSKOKWIM HEALTH CORPORATION

P. O. Box 528
Bethel, Alaska 99559
(907) 543-3321

January 19, 1979

Mr. Greg Capito
Department of Environmental Conservation
Pouch O
Juneau, Alaska 99811

Dear Greg:

When it comes to "making friends and influencing people," I am afraid I may have already lost you.

I realize ignorance of the law is no excuse, but it is the only one I have. I did not realize VSW and PHS were totally unconnected, or at least I did not connect the two; even when working on the subject. I believe this is my fifth or sixth week in Alaska and this job. I am juggling several programs and trying not to make the sort of stupid mistake I made here.

I enclose a letter I have written retracting the use of the phrase, VSW facilities. If you wish me to make any further reparation, or acts of contrition, please let me know. You can imagine I already feel very dull-witted.

Meanwhile, I send my abject apologies.

Sincerely yours,

Jillian

Mrs. Jillian Loschky
Assistant Health Director

JL:al

ENCLOSURE

Finally, the interest or initiative a village has demonstrated in correcting or alleviating local waste disposal problems is another point to consider when selecting a candidate village.

Keep in mind that there is flexibility in the VSW program. If a facility providing less than all the services specified in the VSW act is desired by a village, the following options may be available: 1) A central watering point; 2) A central watering point plus a waste disposal plant or 3) Option (2) plus bathing and/or laundry services.

We hope that by the time each regional health organization completes the screening process and selects a village, the Association of Regional Health Directors or similar group will agree to act in an advisory capacity for the VSW program. This group will help us prioritize the villages selected, using the guidelines outlined above. Department of Environmental Conservation engineers will then conduct field investigations and on-site inspections of the top two or three villages and discuss the projects with village leaders. This way the top selections are either confirmed or rejected. If rejection occurs, the process is repeated with the next village on the list.

Before you begin the screening process, please read carefully the enclosed material. The Village Safe Water Act will clearly define the purpose, objectives and limitations of our program. The case studies report from the Northern Engineer will give you a better idea of the sanitation systems we've constructed in the past.

We look forward to your active participation in this selection process and to being advised of your choice by March 11. Please feel free to contact me at 465-2687 in Juneau if you have any questions or comments.

Sincerely,

Greg Capito

Greg Capito
Senior Planner
Village Safe Water

Enclosures

cc: Executive Directors of the
Regional Health Corporations

SOUTHEAST ALASKA
REGIONAL HEALTH CORPORATION
GOLDSTEIN BUILDING, ROOM 414
130 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801
PHONE 907-586-3613

April 12, 1977

Mr. Gregory Capito, Senior Planner
Village Safe Water
Alaska Department of
Environmental Conservation
Pouch O
Juneau, Alaska 99811

Dear Mr. Capito:

Please forgive the extended delay in responding to your letter of March 29, 1977 requesting our input in the Southeast community selection for your village safe water project.

Judging from our past community profiles, personal evaluations and on-site visits, it has been determined that the villages of Tenakee and Kasaan are in most need of your services. These two Southeast villages lack adequate water facilities for their everyday needs. It is also my understanding that the PHS has had very little, if any, involvement with these communities as far as constructing water facilities there.

I hope this information will assist you in the final selection process.

Again, forgive the delay, I did not receive your letter until a few days ago.

Sincerely,

Archie Cavanaugh
Director of Planning

AC/mh

MAUNELUK ASSOCIATION

P. O. Box 256
Kotzebue, Alaska 99752

Phone
(907) 442-3311
or
(907) 442-3313

March 8, 1977

Greg Capito
Senior Planner
Village Safe Water Act
Department of Environmental Conservation
Pouch O
Juneau, Alaska 99811

Dear Greg:

This letter is in response to your letter dated February 18, 1977 regarding the Village Safe Water Act.

The village we would like to submit for the program is Kobuk. At the present time it has no city water or sewage system. This leaves the residents of Kobuk without any means of showering, washing clothes and sewage treatment; all of which are considered vital in the maintenance of adequate health standards.

Due to being located near a large deposit of bornite and other minerals Kobuk is expected to grow in the forseeable future, making it even more imperative that a safe-adequate water-sewage treatment system be installed.

The village of Kobuk is interested in option three of the Village Safe Water Act.

Sincerely,

MAUNELUK ASSOCIATION

Dennis J. Tiepelman, President

Marty Strauss

Marty Strauss
Environmental Planner

cc:Mauneluk Board of Directors
Miles Cleveland
Tony Bernhardt
Chuck Greene
Joe Ryan

MS/ga

MAYOR'S OFFICE
EXT. 211
ADMINISTRATION & FINANCE
EXT. 210
PUBLIC WORKS DEPT.
EXT. 249
PLANNING DEPT.
EXT. 244

NORTH SLOPE BOROUGH
P. O. BOX 69
BARROW, ALASKA 99723
907 - 852-2611

ASSESSING
EXT. 230
HOUSING AGENCY
EXT. 245
HEALTH AGENCY
EXT. 241
ACCOUNTING
EXT. 237

March 14, 1977

Mr. Greg Capito
Department of Environmental Conservation
Village Safe Water
Pouch O
Juneau, Alaska 99811

Dear Mr. Capito,

In response to your letter of Feruary 18, 1977, I would like to submit the village of Point Hope as our choice for a village water project.

Sincerely yours,

Elise Patkotak

Elise Patkotak
Program Administrator
North Slope Borough
Health Program

north pacific rim
native corporation

March 2, 1977

Greg Cofito, Senior Planner
Village Safe Water
Dept. of Environmental Con-
servation
Pouch O
Juneau, Alaska 99811

Dear Greg:

Thank you for your letter of February 18, 1977 and your presentation to the Association of Regional Health Directors on February 24, 1977.

Herewith is the information you requested:

We have only three villages in the Chugach Region: English Bay, Port Graham, and Tatitlek. All of these have Public Health Service water and sewer systems which, though in need of improvement, are basically adequate in comparison to other villages. It appears, therefore, that none of our villages fit the conditions of, or are in need of, the Village Safe Water Program.

I wish you well in your efforts to administer and plan this program in the direct and forthright manner you have demonstrated in the past.

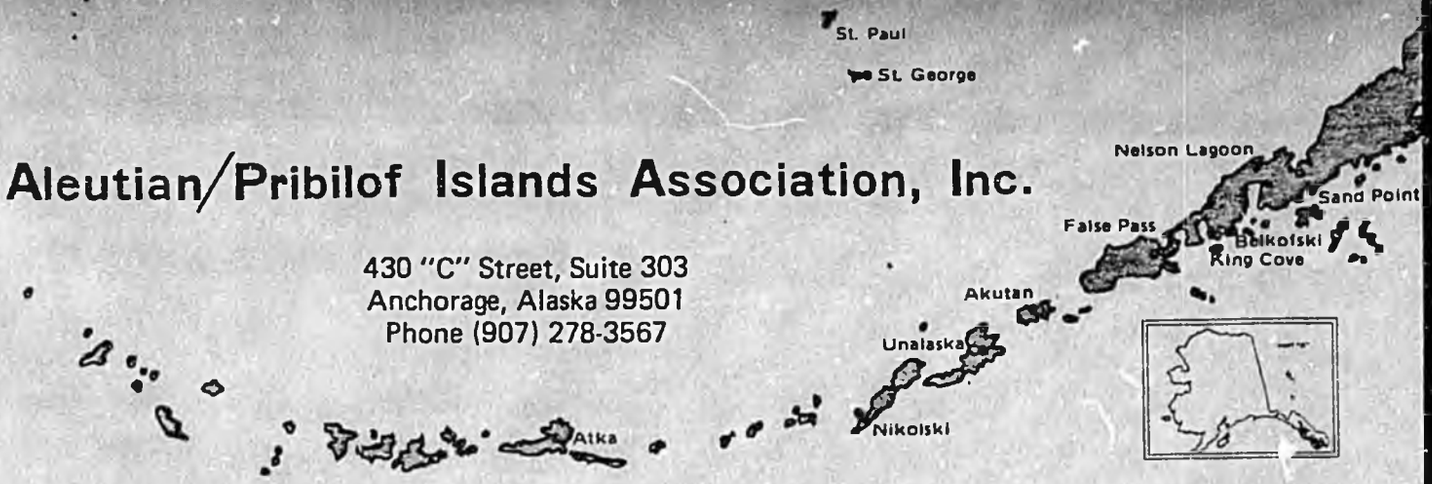
Sincerely,

Gregg Brelsford
Health Director

vh

912 East 15th Avenue / Anchorage / Alaska 99501 / Ph. (907) 276-2121

The Non-Profit Corporation Serving The People of the Chugach Native Region



Aleutian/Pribilof Islands Association, Inc.

430 "C" Street, Suite 303
Anchorage, Alaska 99501
Phone (907) 278-3567

HEALTH DEPARTMENT

March 17, 1977

Mr. Greg Capito
Senior Planner
Village Safe Water
State of Alaska
Department of Environmental Conservation
Pouch O
Juneau, Alaska 99811

RECEIVED
MAR 21 1977
Department of
Environmental Conservation

Dear Greg,

Thank you for the informational letter concerning Village Safe Water Facilities to be built in Alaska.

After reviewing your letter I have discovered that the villages in our region will not be eligible for your project as they are requesting housing programs which would involve HUD and PHS water and sewer systems.

Yours truly,

Marie Sipary
Health Director

MS/rc

cc: Files

YUKON-KUSKOKWIM HEALTH CORPORATION

AFFILIATE OF THE ALASKA FEDERATION OF NATIVES

P. O. Box 528
Bethel, Alaska 99559
(907) 543-2506
(907) 543-250[illegible]

March 11, 1977

Mr. Greg Capitc
Senior Planner
Village Safe Water
State of Alaska
Dept. of Environmental Conservation
Pouch O
Juneau, Alaska 99811

Dear Greg:

RE: Rural VSW Selections

This is in answer to assist you select a village in our area most in need of a VSW project.

During the Native Health Board meeting last week, I presented your request to the Board members. I also made a short explanation of the project to be involved. The Board selected the following villages but not prioritized. They said for you to prioritize and make the selection after you have made the field observations.

Eek	population:	199
Newtok		152
Kipnuk		324
Sheldons Point		138

All of the above are in need of a VSW project. When you have decided to travel to the above villages, let me know and I will be glad to travel with you to act as an interpreter. When we get to those villages we will be able to get all the information necessary for both our offices and also for your selection.

The Native Health Board was pleased you requested their assistance in the selection of a village, especially to help improve the health needs of the villages.

Sincerely,

Peter C. Phillip
Community Liaison

cc: Alvin Ivanoff,
YKHC Executive Director

Files

PCP:lpn

STATE OF ALASKA
DEPT. OF ENVIRONMENTAL CONSERVATION

JAY S. HAMMOND, GOVERNOR

POUCH O — JUNEAU 99811

April 19, 1977

Mr. Bob Worl, Executive Director
NORTH SLOPE BOROUGH HEALTH
DEPARTMENT
P.O. Box 69
Barrow, Alaska 99723

Dear Bob:

RE: Rural Sanitation

The Village Safe Water (VSW) program will construct two or three new sanitation facilities this year in rural Alaskan communities. At an April 13 meeting in Kotzebue, the Association of Regional Health Directors, (ARHD), acting as the VSW advisory board, prioritized a list of eight rural villages. A summary of the group's recommendations follows:

REGIONAL HEALTH CORP.	VILLAGE	ARHD PRIORITY
Norton Sound Health Corp.	Council	1
Tanana Chiefs Health Authority	Tanana	2
Bristol Bay Health Authority	Pilot Point	3
North Slope Borough Health Dept.	Nuiqsut	4
Cook Inlet Native Association	Ninilchik	5
Copper River Health Dept.	Mentasta	6
Yukon-Kuskokwim Health Dept.	Nightmute	7
Maneluk Association	Kobuk	8

The prioritization process was done by examining background data, including information relating to the difficulty each village faces in obtaining a reliable source of clean water. This information was then placed in perspective by evaluating each community's prospects for sanitation improvements. For example, Council was placed at the top of the list because of the village's undeveloped source of supply and there were no improvements planned. In contrast, Kobuk, also with an undeveloped source, was placed at the bottom of the priority list because the Public Health Service has immediate plans to construct a sanitation system under provisions of the Indian Health Care Improvement Act, P.L. 94-437.

Tanana and Pilot Point were placed 2 and 3 on the priority list. The Village of Tanana uses groundwater with a high iron content. It was also pointed out that this village of nearly 500 people may not receive a PHS project until FY 80 or 81. Pilot Point has a difficult water supply problem with a tundra lake as the source. Prospects of a PHS project for Pilot Point appear dim until FY 79.

The advisory group carefully deliberated the existing health problem in the Village of Ninilchik. Here, the source of supply contains bacterial contamination during much of each year. The board placed Ninilchik number four on the priority list and petitioned appropriate federal and state agencies to investigate the health problem and take appropriate action to correct the immediate health hazard. To address the long term sanitation needs of Ninilchik, the board recommended that scheduled improvements for the village planned by PHS for FY 80, be accelerated to protect the health and welfare of residents and tourists.

Nuiqsut, Mentasta and Nightmute were recognized as villages with water supply problems. However, PHS project planning for these communities is scheduled to begin by FY 77 or 78.

The advisory board also considered prioritizing Kassan, a late entry submitted by the S.E. Alaska Regional Health Corporation. But since the board felt Kassan would not displace the top three villages, there was no need to consider them this year.

Now that the prioritization process is completed, the Dept. of Environmental Conservation, working through the appropriate Regional Health Corporations, will contact the top 2 or 3 villages. This will be done to determine what type of facilities the people in these communities would like, and the technical and economic feasibility of constructing, operating and maintaining these systems.

In order to keep the board advised on the candidate selection process, written reports will be mailed to each member of the ARHD. An update could also be presented at the next regularly scheduled Association meeting, if the organization so desires.

Thank you for your active participation in the candidate selection process. We welcome your increased involvement in the VSW program.

Sincerely yours,

Greg

Gregory Capito
Senior Planner
Village Safe Water

The Water Programs Division is responsible for conserving and enhancing the state's marine and fresh water environment. Activities include control of liquid waste discharges, surveillance of water quality, management of the state/federal water supply and sewage treatment facility construction program and provision of safe water facilities and supplies.

The fiscal 1976 budget appropriation is almost $1.2-million, including $167,000 in federal funds, while the staff includes 24 full-time and two part-time employees. An additional full-time position has been requested by the Department of Environmental Conservation for fiscal 1977.

Responsibilities in the Terrestrial Programs Division encompass evaluating the environmental impact of development activities on the state's land and air resources. Activities include regulation of air pollution, solid waste management, control of hazardous substances and review of development activities in permafrost rich areas.

The fiscal 1976 budget appropriation is approximately $569,000 including $190,000 in federal funds and covers a staff of 14. A reduction of three positions is anticipated in the fiscal 1977 budget request.

The Program Coordination Division develops broad environmental plans to ensure consistency in department actions, coordinate all permit activity and monitor the development of federal and state regulations. It has commenced preparation of a comprehensive environmental plan for the state.

The fiscal 1976 budget appropriation is $235,000 including almost $67,000 in federal funds. There are four employees and a request for an additional position has been made for fiscal 1977.

A full range of administration and technical support activities is provided to the department through the Management Services Division. It is also the main administrative contact with other state agencies. The fiscal 1976 budget appropriation is approximately $793,000 including almost $120,000 in federal funds. There are 24 employees and a request has been made for two additional positions in fiscal 1977.

A liaison activity in the department employs nine people with a fiscal 1976 budget appropriation of $461,000. A request has been made for an additional five employees in fiscal 1977 although only five of the nine positions now authorized are filled.

Evaluation

The department operates at a highly efficient level. However, its activities are duplicated by other state agencies in several instances. In some cases, current staff is not adequate to handle existing work loads and questions of construction policy have been raised in regard to the ability of local villages to operate and maintain certain types of facilities.

Recommendations

254. Discontinue construction of village safe water projects.

The village safe water program is financed completely by the state and there is substantial concern about its effectiveness. The program applies to villages with population ranges of from 25 to 600 persons. Approximately $5-million has been spent to complete eight projects and three more are scheduled.

February 18, 1977

William Dann, Executive Director
NORTON SOUND HEALTH CORPORATION
P.O. Box 966
Nome, Alaska 99762

Dear William:

RE: Rural Sanitation

Please recall the recent meetings with you or your staff concerning two or three Village Safe Water (VSW) Facilities to be built this year in Alaska Native villages. As discussed earlier, we would like you to help us select a village in your area most in need of a VSW project.

Since 1970, the Department of Environmental Conservation has sponsored construction of nine VSW facilities. Hence, we have some experience to share with you that might help in selecting a village.

First of all, remember that we build central facilities where people come to get water, deposit waste, bathe and do laundry; as opposed to piped water and sewer service to each house usually installed by the U.S. Public Health Service. Physical features are important in deciding whether a piped system or central facility is appropriate. For example, ice-rich permafrost or swampy terrian make it technically and economically difficult to construct a conventional piped system. Also, in a village spread out along both sides of the river, a piped system may be too difficult and expensive to install. Therefore, villages in your region which possess these types of physical characteristics may be better suited for a centralized VSW system.

To minimize duplication of effort, please do not consider those villages in your region which have received, or are likely to receive, HUD housing and thus PHS water and sewer systems. Also, please note that a VSW facility should not be constructed in a village where a PHS system already exists.

The size of the community is also important. The Village Safe Water Act, as it will probably be amended, defines "village" as an incorporated or unincorporated community which has between 25 and 600 people residing within a two mile radius.

Perhaps the single most important factor to consider is how a village obtains its water supply. For example, melting ice or collecting rain for drinking water is more inconvenient and unsafe than having a good quality, year round stream close by.

Finally, the interest or initiative a village has demonstrated in correcting or alleviating local waste disposal problems is another point to consider when selecting a candidate village.

Keep in mind that there is flexibility in the VSW program. If a facility providing less than all the services specified in the VSW act is desired by a village, the following options may be available: 1) A central watering point; 2) A central watering point plus a waste disposal plant or 3) Option (2) plus bathing and/or laundry services.

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Before you begin the screening process, please read carefully the enclosed material. The Village Safe Water Act will clearly define the purpose, objectives and limitations of our program. The case studies report from the Northern Engineer will give you a better idea of the sanitation systems we've constructed in the past.

We look forward to your active participation in this selection process and to being advised of your choice by March 11. Please feel free to contact me at 465-2687 in Juneau if you have any questions or comments.

Sincerely,

Greg Capito

Greg Capito
Senior Planner
Village Safe Water

Enclosures

cc: Executive Directors of the
Regional Health Corporations

bc: Comm/All Regional Supervisors
and Division Directors, PHS

GC:tl

MEMORANDUM State of Alaska

TO: Jerry Sargent
Sanitary Engineer
Village Safe Water

DATE: March 23, 1977

FILE NO:

TELEPHONE NO:

FROM: Gregory Capito GREG
Senior Planner
Village Safe Water

SUBJECT: V.S.W. Candidate Selection Process: Update

Two or three Village Safe Water facilities will be built this year in Native communities. In meetings and more recently in letters, we requested that each Native Health Corporation select a village most in need of a Village Safe Water project. An update of this selection process follows:

1. North Pacific Rim Health Department

   Gregg Brelsford indicated no candidate in his area because all villages are covered by PHS.

2. North Slope Borough Health Department

   Elise Patkotak says ~~Pt. Hope~~ Nuiqsut is the choice, telcon 3-14. TELCON 4-4-77;

3. Kodiak Area Native Health Authority

   Don Skaw - expect no letter from him as all 6 villages are covered by HUD/PHS.

4. Maneluk Association

   Chuck Green says Kobuk is the candiate village.

5. Southeast Alaska Regional Health Corporation

   Conrad Baines has yet to decide but Kasaan is likely candidate. S.E. area is heavily covered by HUD/PHS.

6. Norton Sound Health Corporation

   Ray Van Ostran says the Village of Council is the probable choice according to telcon 3-14. He must check with Bill Dann to confirm this selection.

7. Tanana Chiefs Health Authority

   Paul Sherry is acting Director. Five villages are under consideration but a candidate cannot be submitted until April 1 - because of staffing problems. He states that several communities like Circle would like to construct buildings which would serve as municipal centers as well as sanitation facilities. But additional matching funds are needed. He indicates that the Village Corporations could act as the construction contractor in this sort of an effort. I told him to put his idea on paper and explain it in greater detail.

TANANA — PERSONNEL CONTACT 4-1-77

8. Aleut/Pribilof Health Department

Marie Sipary says that because of PHS coverage no villages in her area qualify.

9. Bristol Bay Area Health Corporation

Robert Clark has not responded to the request. Planning officer Nancy Knoohuizen indicates she will bring it to his attention as soon as possible. Pilot Point TELCON 3-23-77

10. Cook Inlet Native Health Department

The staff of this Health Corporation is leaving and Dan Slaby formerly of T.C.C. is taking over in April. We should expect no response until then. NINILCHIK - TELCON 4-4-77.

11. Yukon-Kuskokwim Health Corporation

Alvin Ivanoff nominates Eek, Newtok and Kipnuk, and Sheldon's Point. They couldn't decide on just one. The Yukon Kuskokwim Health Corporation Board thought our method of selecting candidates is a good one. But Leon Moses of Chevak wondered what would happen if O & M funds ran out? He warned Board members to be cautious. NIGHTMUTE TELCON with Peter 4-6-77

12. Copper River Health Department

Still no candidate village received from Billy Peters. Attempts to obtain a response continue. MENTASTA - TELCON 4-4-77. with Billy

The Association of Regional Health Directors has agreed to act in an advisory capacity for the VSW program. This group will help us prioritize the candidate villages. The selection process will be probably completed this spring when Dept. of Environmental Conservation engineers conduct field investigations and on-site inspections of the top two or three villages and discuss the projects with village leaders.

Enclosure

April 19, 1977

Mr. William Dann, Executive Director
NORTON SOUND HEALTH CORP.
P.O. Box 966
Nome, Alaska 99762

Dear William:

RE: Rural Sanitation

The Village Safe Water (VSW) program will construct two or three new sanitation facilities this year in rural Alaskan communities. At an April 13 meeting in Kotzebue, the Association of Regional Health Directors, (ARHD), acting as the VSW advisory board, prioritized a list of eight rural villages. A summary of the group's recommendations follows:

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Yukon-Kuskokwim Health Dept.	Nightmute	7
Maneluk Association	Kobuk	8

The prioritization process was done by examining background data, including information relating to the difficulty each village faces in obtaining a reliable source of clean water. This information was then placed in perspective by evaluating each community's prospects for sanitation improvements. For example, Council was placed at the top of the list because of the village's undeveloped source of supply and there were no improvements planned. In contrast, Kobuk, also with an undeveloped source, was placed at the bottom of the priority list because the Public Health Service has immediate plans to construct a sanitation system under provisions of the Indian Health Care Improvement Act, P.L. 94-437.

Tanana and Pilot Point were placed 2 and 3 on the priority list. The Village of Tanana uses groundwater with a high iron content. It was also pointed out that this village of nearly 500 people may not receive a PHS project until FY 80 or 81. Pilot Point has a difficult water supply problem with a tundra lake as the source. Prospects of a PHS project for Pilot Point appear dim until FY 79.

The advisory group carefully deliberated the existing health problem in the Village of Ninilchik. Here, the source of supply contains bacterial contamination during much of each year. The board placed Ninilchik number four on the priority list and petitioned appropriate federal and state agencies to investigate the health problem and take appropriate action to correct the immediate health hazard. To address the long term sanitation needs of Ninilchik, the board recommended that scheduled improvements for the village planned by PHS for FY 80, be accelerated to protect the health and welfare of residents and tourists.

Nuiqsut, Mentasta and Nightmute were recognized as villages with water supply problems. However, PHS project planning for these communities is scheduled to begin by FY 77 or 78.

The advisory board also considered prioritizing Kassan, a late entry submitted by the S.E. Alaska Regional Health Corporation. But since the board felt Kassan would not displace the top three villages, there was no need to consider them this year.

Now that the prioritization process is completed, the Dept. of Environmental Conservation, working through the appropriate Regional Health Corporations, will contact the top 2 or 3 villages. This will be done to determine what type of facilities the people in these communities would like, and the technical and economic feasibility of constructing, operating and maintaining these systems.

In order to keep the board advised on the candidate selection process, written reports will be mailed to each member of the ARHD. An update could also be presented at the next regularly scheduled Association meeting, if the organization so desires.

Thank you for your active participation in the candidate selection process. We welcome your increased involvement in the VSW program.

Sincerely yours,

Greg

Gregory Capito
Senior Planner
Village Safe Water

February 22, 1977

The Honorable Joe Orsini
Alaska State Senate
Pouch V
Juneau, Alaska 99811

Dear Senator Orsini:

In your letter dated February 11, 1977 you inquired about how our Village Safe Water design and construction contracts are awarded and administered. Enclosed is a copy of a report entitled, "The State of Alaska Village Safe Water Program" in which the short history of the VSW program is summarized. As you can see in the report, we have tried four different methods of constructing VSW projects in search of satisfactory projects at reasonable costs.

The first two projects (at Northway and Chevak) were small remodelling efforts, with design done by engineering consultants under contract with this Department, and construction done by typical competitive bid construction contracts administered by this Department.

Several Alaskan consulting firms were interviewed by our staff. Criteria evaluated included (no priority): experience in remote Alaska construction; sanitary engineering qualifications; capability to administer construction contracts; interest in working on small jobs (Consultant feew were about $7,000 to $10,000); and the department's long experience in reviewing and evaluating sewerage plans prepared by consulting engineers. CH2M/Hill, Alaska and Ellerbe, Alaska were selected to design these two projects.

These projects went quite well, although we faced the inflexibility of lump sum construction contracts, and we couldn't very well control the impact of the construction contractors on the villages.

The next three projects (at Selawik, Alakanuk and Nulato) were designed and built by typical State construction methods through the Division of Buildings. These projects were most unsatisfactory and expensive as is described in the enclosed report.

Being dissatisfied with the first five VSW projects, we resolved to try new methods of constructing facilities in Pitkas Point, Koyukuk and Beaver. We chose a combination of three-party design and construction management contracts among the Department, the villages, and engineering consultants. For each project there was a design contract followed by a separate construction management contract, with the same consulting firm involved in both contracts. Constrution was carried out by the villages, using the engineering consultants to manage construction activities and grant funds from this Department to pay the bills. This Department, with participation by the villages, directed the day to day activities of the consultants.

Consultants with a unique combination of talents were needed to carry out these last three projects. Especially important was competence and arctic experience in structural engineering, foundations, mechanical engineering, electrial egineering, sanitary engineering and construction management. We also wanted firms willing to work in an "extension of staff" role, since we wanted close control over development of the projects.

We were in a particularly advantageous position to evaluate consultants when these projects began because of 1) our dealings with consultants in the municipal construction grants program, and 2) our intimate involvement with about 15 consultants in reviewing water supply and waste disposal design they were doing for a massive rural school construction program.

As you can imagine, there were not any consulting firms in the State possessing fully all the attributes we were looking for. Sanitary engineering ability and construction management experience were the specialties most difficult to find, to say nothing of finding firms equally well qualified over the wide range of specialties needed. We finally selected three firms which, at that time, came closest to possessing the abilities we were looking for. They were CH2M/Hill, DOWL Engineers and R & M Consultants.

We wanted a different firm for each job to get a wide range of ideas on how to provide the services specified in the Village Safe Water Act. Unfortunately, CH2M ran into organizational problems a few months after they accepted the Koyukuk project, and the job had to be transferred to another firm. To minimize lost time and money in the transfer, we thought it best to have a firm with VSW experience complete the Koyukuk job. Since DOWL was nearing the end of the Pitkas Point VSW project, we asked them to finish the facility in Koyukuk.

The VSW projects in Pitkas Point, Koyukuk and Beaver have been much more satisfactory than the first five. They cost much less and were built much faster than they would have been if they were built by competitive bid construction contracts this Department and the villages had more control over how they were built, the villages were more involved in administering the projects, and village residents were the employees during construction.

There is, however, still room for improvement. There was some inefficiency due to the consultants' lack of experience with our construction methods. Also, the villages could be even more directly involved in managing their projects. For our latest project in Kongiganak, the village has contracted directly with their own consulting firm (C.E. West and Associates) for design and construction mangement (see enclosed copies of the design and construction management contracts).

The village has designated this Department as their representative to direct the consultant's work since communication from the village is difficult and the village lacks technical expertise.

We recommended C.E. West and Associates to Kogniganak because 1) Mr. West himself had experience with innovative construction management techniques while he was Public Works Director for Anchorage, 2) Ed Pohl, with good arctic experience and credentials, would do the sanitary engineering, 3) Mark Fryer, with the experience of having worked on the Beaver project would do the mechanical engineering, and 4) Mr. West had the experience of working on the Pitkas Point project during the short time he was with DOWL Engineers.

Once again, thank you for your continuing interest in the Village Safe Water program.

Sincerely yours,

Jonathan W. Scribner
Director
Division of Water Programs

Enclosures

bc: Jerry Sargent
Commissioner Mueller/w/cc of Orsini ltr
JWS:JmS:tl

January 18, 1977

Honorable Joseph L. Orsini
Alaska State Senate
Pouch Y
Juneau, Alaska 99811

Dear Senator Orsini:

I thourht it might be helpful to follow up the telephone conversation between Mr. Scribner of this Department and you concerning our proposed amendment to the Village Safe Water (VSW) Act.

The present law defines a "village" as an unincorporated community which has between 25 and 600 people residing within a two mile radius, or a second class city.

We feel this definition is antiquated and should be revised for the following reasons:

- Many small villages, for example, Selawik and Pelican, are now first class cities and would not qualify under the Act, although they otherwise might qualify for a VSW project.

- Second class cities larger than 600 population qualify under the present definition although VSW projects would not be appropriate solutions to sanitation problems in these communities.

To clarify what we understand to be the legislative intent of the VSW Act we have proposed to revise the definition of "village" to read:

> "village" means an incorporated or unincorporated community which has between 25 and 600 people residing within a two mile radius."

This definition would include some 200 communities in Alaska. Of these 200 there are perhaps 70 to 100 communities where a centralized VSW project would be appropriate - the remaining communities have some form of water and sewer service to individual homes or realistically could be

served by such systems. So far a total of eight VSW facilities have been completed or nearly completed under the Act. Funding is available for two or three more projects. At the present rate of funding we feel the program must concentrate on providing projects to communities where there is the greatest need for sanitation services and where there is active community interest in a project.

We have had occasional interest from "villages" along the major highway systems in the State but have not rated them high in priority because they already have access to many of the services available under the VSW Act. Given the present policy of solving the worst problems first, and the current funding rate, these communities may not be granted projects for many years. The proposed modifications would not change the likelihood of projects for these communities.

Please let me know if you would like further clarification on the effect of the proposed change. We appreciate your interest in the VSW program.

Sincerely,

Ernst W. Mueller
Commissioner

bc: Sargent

JWS/rs

July 20, 1977

DOWL Engineers
4040 "B" Street
Anchorage, Alaska 99503

Gentlemen:

The State of Alaska Village Safe Water program will soon be entering the initial design phase on two more central water and sewer facilities. The next two projects scheduled for design and construction are Council and Tanana.

Several consulting engineering firms have expressed strong interest in working on these projects in the past. My concern is the interest your consulting firm may have in working on either of the two new projects.

Work on this type of project demands a solid and diversified engineering background. Engineering skills which are mandatory for work on these projects include sanitary engineering, structural engineering, soils and foundation engineering, mechanical engineering and electrical engineering. In addition to the engineering expertise necessary for design of the project, it is also essential the consulting firm selected has an adequate knowledge of construction scheduling and management techniques pertinent to "bush" construction.

In the event you may not be very familiar with the VSW program, I shall briefly outline some of the major points of the program.

Initial contact with the community is made by ADEC. Through a series of meetings, the scope of the project is mutually agreed upon by the community and ADEC. At this point in time ADEC becomes the technical representative for the community and the consultant selection process is begun. When the consultant is selected, a representative of the consultant and a representative of ADEC travel to the community to begin collecting design data, and to establish liaison between the community and the consultant. The design phase of the project then progresses with periodic conceptual meetings among the concerned

parties. The design phase of the project ends when a set of final plans is produced and agreed to by ADEC and the community. A second end product of the design phase is a realistic cost estimate for the construction phase of the project.

Assuming the construction cost estimate is within budget limitations, a construction management contract is negotiated, and the construction phase of the project is begun. During the construction phase the consultant is responsible for all materials ordering and shipping, all project scheduling and logistics, and all actual construction activities. The facility itself is constructed to the maximum extent possible by people in the community working under the direct supervision of a construction technician hired and directed by the consultant. The consultant is further responsible for timely schedule estimates and periodic construction reports. During the final days of construction the consultant prepares a set of as-built plans and a comprehensive operations and maintenance manual, and instructs a locally hired operator in proper use of the same. Following a final inspection of the facility by all concerned parties, and the completion of a punch list, if any, the facility becomes the responsibility of the community and ADEC. The final task for the consultant is to prepare a complete construction analysis for ADEC and the community.

Should your firm be interested in working on one of these projects, I would appreciate it very much if you would send me your qualifications by August 12, 1977.

Should you wish further information on the program, or further clarification on the scope of work involved with these projects, please feel free to write me or call me at (907) 465-2636.

Sincerely,

Jordan Suhr
Sanitary Engineer
Village Safe Water

bc: Jerry Sargent
Greg Capito

JS/rs

DOWL Engineers
404 "B" Street
Anchorage, AK 99503

Quadra Engineering
117 East 53rd
Anchorage, AK 99502

R & M Consultants
5024 Cordova
Anchorage, AK 99503

CH2M/Hill
310 "K" Street
Anchorage, AK 99503

H.V. Lounsbury & Associates
723 West 6th Avenue
Anchorage, AK 99501

Tryck, Nyman & Hayes
740 "I" Street
Anchorage, AK 99501

Dames & Moore Consulting Engineers
711 "H" Street
Anchorage, AK 99503

Bomhoff & Associates
1020 W. International Airport Rd.
Anchorage, AK 99502

Ellerbe Associates Inc.
3201 "C" St.
Anchorage, AK 99503

Ted Forsi & Associates
107 West 6th Ave. Suite 205
Anchorage, AK 99501

Unwin, Scheben & Korynta
103 East 26th Avenue
Anchorage, AK 99503

Entranco Engineers
825 Irwin
Anchorage, AK 99504

Murry-McCormick, Inc.
1101 Orca
Anchorage, AK 99501

International Technology LTD
723 West 6th Avenue
Anchorage, AK 99501

SKM Incorporated
600 West 53rd Avenue
Anchorage, AK 99502

Robert Rutherford Associates
6927 Old Seward Highway
Anchorage, AK 99502

Stephen Brown
Consulting Engineer
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Anchorage, AK 99503

Michael Baker, Jr.
1512 Cushman
Fairbanks, AK 99701

Toner & Nordling
Registered Engineers
114 South Franklin St.
P.O. Box 570
Juneau, AK 99802

Charles Poole & Associates
1225 Tongass
Ketchikan, AK 99901

Kramer, Chin & Mayo
510 Goldstein Bldg.
150 Seward Street
Juneau, AK 99801

Philleo Engineering
& Architectural Services
529 Sixth Avenue
Fairbanks, AK 99701

Galliett & Associates
Engineers & Surveyors
746 "F" Street
Anchorage, Alaska 99501

George Davidson
Engineering Manpower Assoc.
1711 Glacier Avenue
Juneau, AK 99801

Arctic Environmental Engineers
3217 Arctic Blvd.
Anchorage, AK 99503

Wince, Corthell & Assoc.
Consulting Engineers
P.O. Box 3-394
Anchorage AK 99501

① Selawik 10/4/77 Legal Mail for you.
② " Tanana Const (Correspond
" Council " "

Department of Memo
Environmental Conservation

Aug 29, 77 ①
NH

Impressions of Consultant Interviews
Council - Tanana - Selawik/Nulato - Chevak

① Waken Redbird & Asso. I talked with Mr. Redbird for an hour Aug. 29. Their firm was mainly into surveying on the pipeline but has since gotten into many govt. projects in the bush including a considerable amount of building design and inspection. They do have an electrical engineer & feel capable of handling lesser mechanical items. However, they don't have experience in sanitary and thought they would ask Ed Pohl to do that work.

Mr. Redbird questioned our construction management concept mainly because of the possibility of poor village cooperation with labor and the contract. I explained how things had worked in the past but it is a new concept to him.

They have very low key salesmanship (in contrast to Bomhoff, etc) but expressed a desire to do one or both of the new projects.

The main impression I got was that they will have to be convinced that the jobs can be done the way we say they can. They apparently have a big lack of experience dealing with bush shipping & scheduling and with working in a village with the villagers.

② Ellerbe-Alaska, Fairbanks - I spent a couple hours Sept. 1 with Les Rogers, ③ R. Gray & some of their technical help. The firm has a 21 year history of Alaskan work, much of it in the bush. They have design groups of architects, civil engineers (structural & utility) and mechanical / electrical engineers but lack ~~soils~~ extensive soils and sanitary capability. However, they apparently have a working relationship with Greg Jones who is a sanitary engineer

that left Dames & Moore to work for himself. They have asked Mr. Jones to contact me in Anch. Sept. 8.

Mr. Rogers expressed his worry that Fairbanks firms would not receive as much consideration for our jobs as Anchorage firms. I told him that if a Fairbanks firm appeared outstandingly suited we would try to consider them equally with Anchorage firms. He is aware of the logistics problems, however.

Their lead Mechanical Engr. seemed quite good at applying innovative thinking to bush facilities while maintaining simple operation. He also had some ideas on cost savings. In contrast to other engineers of his type, he worked his way up to a P.E. without a degree and seems to have a more practical view of things.

They are very interested in the jobs and I think they may be good for Council — especially if we decide to try some different power generation & sizing (wind).

③ Michael Baker, Jr. - Mr. William McMullen, the Alaska manager of the firm, and I spent 2 hours discussing our projects and their firm. Although most of their work has been pipeline soils and surveying work, they are quite interested in a project of ours.

Their firm has 1300 engineers & technicians around the world. So items that could not be handled in Fairbanks would be sent outside within the firm. Those items would be mech./elec. & sanitary.

The only experience they have which applies is that much of their in house book keeping for Alyeska was very similar to our construction bookkeeping. I guess they are also very good in soils exploration.

④ Philleo Engineering & Architectural - I spent 1 hour with Mr. E. Philleo, & Mr. H. Isberg, and Doug - ? . Doug is a young engineer working on his MSCE - Sanitary - at the University. He has had quite a little bush experience and worked with Dan Smith in Edmonton.

The firm is quite small and, consequently, has no electrical, mechanical, or soils expertise. They mentioned using Jim Lake for electrical and Crews Mc & Hoffman for mechanical. After hearing that last firm name I sort of wrote off Philleo.

The following are consultants both Jordan & I talked with. Therefore I will just discuss my main impressions of them.

Arctic Environmental Engineers - They sure talk a convincing story of bush experience, innovative design, and keeping the facilities managable. Apparently their clients have been well satisfied. Their all around experience fits our jobs very well and most all of Tanana and Council could be done in house with the exception of soils work.

Wince - Corthell - What a pair. First impression tells me that here is one guy that is ideal for us and one that should sell used cars. But I've been wrong on more ~~th~~ first impressions than I will admit. Several years ago I heard some good gossip about Allan Corthell and people apparently still think that way. The firm is quite small but they have a lot of bush experience - both design and working with villagers.

Tryck Nyman Hayes - I wish I had paid more attention to gossip about this firm. Seems like everyone has something political to say about them at one time or another. They do have similar experience and some very good personnel that we met.

DOWL - They've had a few of our jobs and I'm all for trying someone new. However, there is something to say for sticking with a good thing. I would like to see rough design proposals from 3 firms, including DOWL, before making the Tanana selection.

Bomhoff & Asso. – I can foresee the R&M problem here of being 3rd or 4th on their importance scale once the project is started. I would feel allright about using them but I think we have better, untried choices.

Ted Forsi & Asso. – This firm was hard for me to gage. They are certainly young and energetic but lack the expertise for an involved project like Tanana. Much of that job would be farmed out. However, they do have bush experience and might be ideal for Council.

R&M – One man does not a firm make! And I'm not sure the one man is an ideal match for Tanana or Council. The previous lack of importance given our job, lack of communication, lack of clean construction, and lack of PR in the village convinces me we don't want to try them again.

The Big Selections.

Using a rating of 3 = excellent (recommended) 2 = good (consider later) 1 = fair (keep in mind) I will list only those firms I consider qualified for our jobs. In each case see my above discussion of the firm.

Tanana

3 - DOWL - I know exactly what they are capable of. See my dollar idea on page ④.

3 - One of the firms Jordan saw without me might be good. ?

2½ - Tryck Nyman Hayes - Maybe they would be excellent. Or maybe we could end up low on their list of importance.

1 - Arctic Environmental - I don't think this is the job to try them out on. I've heard pro & con on the firm and I don't want to get surprised on a job this size.

Council

3 - Hillerbe - Council wouldn't take as much plan review, etc. and I would like to try their engineers.

3 - Wince-Corthell - I think they would try hard to work <u>with</u> us and the village.

2 - Ted Forsi - Their youth might mean ~~might not be~~ very conscientous work.

1 - Philleo - This firm might be too used to typical State work for our jobs.

Selawik / Nulato

3 - Arctic Environmental - I think they have just the right combination of sanitary engineering and innovative gut engineering for these modifications. I know we want to try this firm and I think this is the place instead of Tanana.

2 - R&M - I'm not all that impressed with Dan Smith's ability to modify an existing plant. I think he would rather add on than use what's there. And I sure am not impressed with the rest of the firm. With direction, however, Dan could very well surprise me.

2 - Quadra - I talked with Ed once about these modifications and he had a few interesting ideas.

Chevak

3 Quadra - I think John would give us the best attack at this difficult problem.

1 R&M - Their only advantage is that they have a lot of pipeline planting experience.