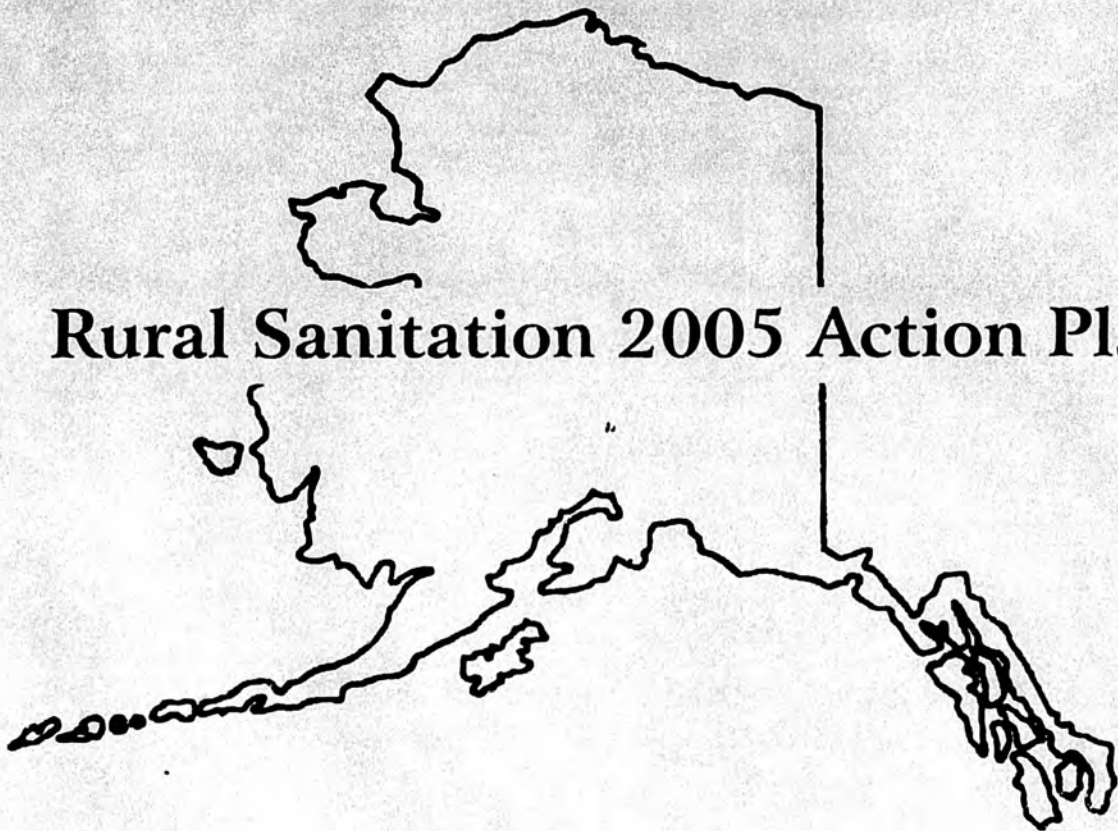


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Executive Summary

Rural Sanitation 2005 Action Plan



Recommendations developed and adopted by the Governor's
Council on Rural Sanitation

Public Comment Draft

July 29, 1997

The Governor's Council on Rural Sanitation requested that we forward a draft copy of their Rural Sanitation 2005 Action Strategy to you for review and comment. Your input into the completion of the Action Strategy would be greatly appreciated.

Please send your written comments and ideas about this report to:

The Governor's Council on Rural Sanitation
c/o Department of Environmental Conservation
410 Willoughby Avenue , Suite 102
Juneau, Alaska 99801
fax: (907) 465-5177

or call 1-888-464-5147 (toll-free) to submit your comments, ideas or questions verbally (public comment calls will be accepted every Tuesday and Thursday 2:00 pm-4:00 pm)

or contact individual members of the Governor's Council on Rural Sanitation listed below:

<u>Council Member</u>	<u>Telephone</u>	<u>Fax Number</u>
Senator Al Adams	465-3707	465-4821
Robert Beans, Co-Chair	591-2834	591-2020
Ernie Brannon	745-2176	745-5398
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Chris Mello	852-0250	852-0257
Peter Nakamura	465-3090	586-1877
Representative Irene Nicholia	465-4527	465-2294
Representative Gail Phillips	465-3720	465-3472
Dewey Skan	755-2206	755-2966
Ginny Tierney	828-3380	828-3374
Anne Walker	337-0028	333-2001

To receive additional copies of the Rural Sanitation 2005 Action Plan, please call 1-888-464-5147 anytime and leave a message giving your name, address, and phone number.

Introduction

In 1995, Governor Tony Knowles established the Governor's Council on Rural Sanitation. One of the primary goals he set for the Council was to develop a recommended course of action for improving rural sanitation conditions and eliminating the honeybucket by the year 2005. This document is developed to address that mandate.

The Rural Sanitation 2005 Action plan represents the combined insight, energy, and forward thinking of State and federal officials, representatives of statewide and regional Native organizations, sanitation experts, local government officials, and members of the public. It is meant to provide a blueprint for improving rural sanitation conditions as efficiently, effectively and expediently as practical. It is a shared vision for ensuring that all Alaskans have access to safe drinking water and a sanitary means of sewage disposal.

This is intended to be a dynamic strategy. Its progress will be reviewed annually and updated and changed as appropriate to ensure that efforts and resources are being focused most productively.

The success of this plan depends upon the combined efforts of policy makers, budget allocators, government workers, regional corporation staff, and most importantly local governments and community residents. It requires the dedication of resources, energy and commitment from each resident, community, region, organization and State and federal agency involved.

GUIDING PRINCIPLES:

The following principles were used in the development of the Rural Sanitation 2005 Action Plan. It is essential that they also be used to guide the implementation of this strategy and any decision making process involved in improving rural Alaska sanitation conditions.

- ▶ **Local involvement, desire, and commitment are absolutely essential.**
- ▶ **Ensuring accountability, providing the best services to residents, and obtaining the "Biggest Bang for the Buck" must be central to all decision making processes.**
- ▶ **A Local, Regional, State, and Federal partnership is key.**
- ▶ **Capital funding alone will not solve the problem.**
- ▶ **A coordinated, comprehensive, multi-disciplinary, multi-cultural approach is vital.**

RURAL SANITATION 2005
RECOMMENDED
SIX COMPONENT ACTION STRATEGY

COMPONENT I: LOCAL INVOLVEMENT & RESPONSIBILITY

FIVE POINT ACTION PLAN

Provide rural sanitation funding in two separate phases:
(1) comprehensive sanitation planning and (2) construction.

Conduct comprehensive community sanitation planning workshops and presentations.

Offer environmental health education curriculum in rural schools.

Award construction grants contingent upon communities

Seek community assessment, evaluation, and feedback on the effectiveness of programs in responding to local needs.

COMPONENT II: CAPACITY DEVELOPMENT

FIVE POINT ACTION PLAN

Maintain the Remote Maintenance Worker program at a minimum of thirteen positions.

Incrementally expand the Rural Utility Business Advisor (RUBA) program to at least twelve positions.

Improve communication and coordination between capacity development programs and communities.

Promote opportunities for advanced training.

Conduct regional workshops and short courses for utility managers, operators, and policy makers.

COMPONENT III: OPERATION & MAINTENANCE

FOUR POINT ACTION PLAN.

Provide a minimum of \$17 million (FY96 funding level) annually through the Power Cost Equalization program.

Provide a minimum of \$26.28 million (FY96 funding level) through Revenue Sharing and \$31.96 million (FY96 funding level) through Municipal Assistance annually.

Identify and evaluate local operation and maintenance problems and successes to determine what types of assistance work best and why.

Local Governments should analyze the potential of operation and maintenance partnerships.

COMPONENT IV: FACILITY CONSTRUCTION

FIVE POINT ACTION PLAN

Construct new, adequate sanitation systems for an average of 1,000 rural homes per year and upgrade existing systems as necessary.

Wherever possible, at a community's direction, use force account construction for rural sanitation projects.

Combine/coordinate the priority list processes of all State and federal agencies providing sanitation capital funds.

Promote the research, and development, implementation and testing of appropriate new/alternative technologies.

Provide technologies which meet the unique needs/capabilities and environment of each community.

COMPONENT V: PROBLEM REGULATIONS & REGULATORY FLEXIBILITY

FIVE POINT ACTION PLAN

Develop and distribute a plain english regulatory guidebook tailored to rural Alaska.

Ensure that regulations do not unnecessarily hamper the progress of improving rural sanitation conditions.

Focus on results such as public health improvements rather than process.

Relax regulations and permitting standards to allow for alternative/innovative rural sanitation technologies.

Explore the feasibility of issuing a single community permit for rural water, sewer, and solid waste facilities.

COMPONENT VI: BUDGET

FIVE POINT ACTION PLAN .

Provide a minimum of \$25 million per year in State funds to be matched through a combination of federal EPA and USDA-RD appropriations for rural sanitation construction projects managed through the Village Safe Water program.

Ensure that Alaska gets an equitable share, based upon its needs, of federal formula funding (i.e. EPA Indian Set-Aside funds and IHS funding).

Issue State General Obligation Bonds to augment annual State general fund appropriations for rural sanitation construction projects.

Provide a minimum of \$2 million per year in State funds and \$2 million per year in federal funds for capacity building efforts.

Provide stable financial assistance through the State PCE, Revenue Sharing, and Safe Communities programs.

The Governor's Council on Rural Sanitation requested that we forward a draft copy of their Rural Sanitation 2005 Action Strategy and its Executive Summary to you for review and comment. Your input into the Council's Strategy would be greatly appreciated. We need your help in order to make the Rural Sanitation 2005 Action Plan a strategy that will work. If you know someone else who may be interested in providing input into the development of these documents, please pass this information on to them or ask them to call the toll free number below. Your observations, opinions, and recommendations are important to the Council. Please take the time to review these documents and let us know your thoughts. We look forward to hearing from you.

Please send your written comments and ideas about this report to:

The Governor's Council on Rural Sanitation
c/o Department of Environmental Conservation
410 Willoughby Avenue , Suite 102
Juneau, Alaska 99801
fax: (907) 465-5177

or call 1-888-464-5147 (toll-free) to submit your comments, ideas or questions verbally (phones will be staffed every Tuesday and Thursday 2:00 pm-4:00 pm)

or contact individual members of the Governor's Council on Rural Sanitation listed on the inside cover of both the Rural Sanitation 2005 Action Plan and the Executive Summary for the Action Plan.

To receive additional copies of the Rural Sanitation 2005 Action Plan and/or the Executive Summary for the Action Plan, please call 1-888-464-5147 anytime and leave a message giving your name, address, and phone number.

PLEASE NOTE: *You were recently sent a letter asking for your comments on the draft "Rural Sanitation 2005 Action Plan". There was an error in a phone number listed in the letter. Please disregard the previous instructions and instead use the following:*

THE GOVERNOR'S COUNCIL ON RURAL SANITATION WANTS TO HEAR FROM YOU!!!

Hopefully, you've had the opportunity to review the draft "Rural Sanitation 2005 Action Plan" which was recently sent to you. If you have, we would like to hear your thoughts on the plan. If you haven't, please try to find the time to read the strategy and let us know what you think. We want to know your ideas, concerns, and comments. All written and verbal comments received by September 25, 1997 or during the public testimony period of the September 30, 1997 Council meeting will be reviewed by the Council for inclusion in the plan.

For your convenience, we've provided five ways for you to submit your comments:

Oops! - the correct number is:

↳ (1) call 1-888-⁴⁶⁴~~646~~-5147 (toll free) anytime between now and September 25 and leave a message giving us your name and phone number. We'll call you back to schedule a time which is most convenient to you to submit your verbal comments.

(2) *mail* your written comments to:

The Governor's Council on Rural Sanitation
c/o Department of Environmental Conservation, FC&O
410 Willoughby Avenue, Suite 102
Juneau, Alaska 99801

(3) *fax* your written comments to:

The Governor's Council on Rural Sanitation
fax number: (907) 465-5177

(4) *call-in during the Council meeting* on September 30, 1997 between 9:30 and noon and submit your comments verbally by dialing 1-800-478-7612 if phoning in from outside of Anchorage or 1-800-764-6202 if phoning from the Anchorage area. Your comments will be limited to 5 minutes.

(5) *Attend the Council meeting* on September 30, 1997 and *provide your comments in person* between 9:30 and noon. The meeting will be held at the Anchorage Legislative Information Office -Room 670, 716 West 4th Avenue.

We look forward to receiving your comments! Your input is important!

This message is being mailed by the Department of Environmental Conservation, Division of Facility Construction and Operation on behalf of the Governor's Council on Rural Sanitation.

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FACILITY CONSTRUCTION AND OPERATION
410 WILLOUGHBY AVENUE, SUITE 105
JUNEAU, AK 99801-1795

RUSH!
*Dated material -
PLEASE READ immediately!*

REP. ELDON MULDER
STATE CAPITOL, ROOM 501
JUNEAU, ALASKA 99801-2133

RURAL SANITATION 2005 ACTION PLAN

***Recommendations Developed and
Adopted by the Governor's Council on
Rural Sanitation.***

**Public Comment Draft
July 28, 1997**

Please send your written comments and ideas about this report to:

**The Governor's Council on Rural Sanitation
c/o Department of Environmental Conservation
410 Willoughby Avenue , Suite 102
Juneau, Alaska 99801
fax: (907) 465-5177**

**or call 1-888-464-5147 (toll-free) to submit your comments, ideas or questions verbally (calls will be accepted every Tuesday and Thursday 2:00 pm-4:00 pm)
or contact individual members of the Governor's Council on Rural Sanitation (see inside cover of this report for a listing of Council members and their phone numbers).**

**GOVERNORS COUNCIL ON RURAL SANITATION
COUNCIL MEMBERS**

<u>Council Member</u>	<u>Telephone</u>	<u>Fax Number</u>
Senator Al Adams	465-3707	465-4821
Robert Beans, Co-Chair	591-2834	591-2020
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Introduction

In 1995, Governor Tony Knowles established the Governor's Council on Rural Sanitation. One of the primary goals he set for the Council was to develop a recommended course of action for improving rural sanitation conditions and eliminating the honeybucket by the year 2005. This document is developed to address that mandate.

The Rural Sanitation 2005 Action plan represents the combined insight, energy, and forward thinking of State and federal officials, representatives of statewide and regional Native organizations, sanitation experts, local government officials, and members of the public. It is meant to provide a blueprint for improving rural sanitation conditions as efficiently, effectively and expediently as practical. It is a shared vision for ensuring that all Alaskans have access to safe drinking water and a sanitary means of sewage disposal.

This is intended to be a dynamic strategy. Its progress will be reviewed annually and updated and changed as appropriate to ensure that efforts and resources are being focused most productively.

The success of this plan depends upon the combined efforts of policy makers, budget allocators, government workers, regional corporation staff, and most importantly local governments and community residents. It requires the dedication of resources, energy and commitment from each resident, community, region, organization and State and federal agency involved.

GUIDING PRINCIPLES:

The following principles were used in the development of the Rural Sanitation 2005 Action Plan. It is essential that they also be used to guide the implementation of this strategy and any decision making process involved in improving rural Alaska sanitation conditions.

Local involvement, desire, and commitment are absolutely essential.

Improved local capacity to manage and maintain completed sanitation facilities is key to eliminating the honeybucket by the year 2005. Communities and agencies must work together to develop mutually agreed upon processes to provide the necessary resources to manage and maintain projects once they are completed. Each community is unique and local commitments must be developed based on desired results not a mandated process. Agencies must negotiate this process and receive local input and commitment to obtain agreed upon management results. During the project planning phase, communities should demonstrate their commitment through active involvement in project planning and development of management and maintenance capacity. It is essential that this commitment be in place prior to receipt of financial assistance for project construction. Agencies must work in partnership with local governments and residents to improve their capacity, considering the unique needs, resources, and expectations of each individual community.

Ensuring accountability, providing the best services to residents, and obtaining the "Biggest Bang for the Buck" must be central to all decision making processes.

Each person, agency, and community working on sanitation improvements must always remember the customer and strive to implement projects, appropriate technologies, and programs in such a way that the best service possible is provided to rural residents. Accountability must be stressed at all levels of sanitation projects so all participants have the highest level of confidence in the services being provided. Agencies should solicit community assessment,

evaluation, and feedback on program delivery in accordance with the process described in Component I (Recommendation 5).

Funding is limited. Unless we maintain the highest accountability standards and the public, Congress, and State legislature have confidence in our ability to be responsible with each dollar spent on improving rural sanitation conditions, decision makers will be reluctant to appropriate essential funding for our efforts. We must continue to make sure that each dollar spent on sanitation improvements is put to its most efficient use. Otherwise, the Rural Sanitation 2005 Action Plan will not progress and rural residents will suffer.

A Local, Regional, State, and Federal partnership is key.

Coordination and commitment at a single level of government is not good enough. Working alone, neither the State, the federal government, regional organizations nor local governments¹ have the resources to eliminate the honeybucket from rural Alaska by the year 2005. A complete partnership between all stakeholders is the only way this Action Plan will succeed.

Capital funding alone will not solve the problem.

In the past, the State and federal governments have focused funding on construction projects. Now there is an increased awareness that funding for non-construction related activities such as planning, training and technical assistance is of equal, if not greater, importance. Funding for programs which assist communities in developing and sustaining the capacity to properly operate and maintain expensive systems must compliment and be coordinated with capital appropriations.

¹Local governments include, but are not limited to: Tribal Governments, IRA Councils, Elders' Councils, Traditional Councils, local improvement districts and State chartered governments

A coordinated, comprehensive, multi-disciplinary, multi-cultural approach is vital.

There are numerous programs in place which are aimed either directly or indirectly at improving the sanitation conditions in rural Alaska. The agencies/offices managing these programs must work together to ensure that they share information and resources to compliment each other's work. Agencies should combine their construction efforts through a coordinated priority process. Likewise, staff from non-construction related programs should work together as a team and deliver services in a comprehensive manner utilizing multi-cultural approaches.

RURAL SANITATION 2005 RECOMMENDED SIX COMPONENT ACTION STRATEGY

COMPONENT I: LOCAL INVOLVEMENT & RESPONSIBILITY

FIVE POINT ACTION PLAN

- 1. Provide rural sanitation funding in two separate phases: (1) comprehensive sanitation planning and (2) construction.**
 - 2. Conduct comprehensive community sanitation planning workshops and presentations.**
 - 3. Offer environmental health education curriculum in rural schools.**
 - 4. Award construction grants contingent upon communities meeting agreed upon performance targets.**
 - 5. Seek community assessment, evaluation, and feedback on the effectiveness of sanitation related programs in responding to local needs.**
-

COMPONENT II: CAPACITY DEVELOPMENT

FIVE POINT ACTION PLAN

- 1. Maintain the Remote Maintenance Worker program at a minimum of thirteen positions.**
- 2. Incrementally expand the Rural Utility Business Advisor (RUBA) program to at least twelve positions.**
- 3. Improve communication and coordination between capacity development programs and communities.**
- 4. Promote opportunities for advanced training.**
- 5. Conduct regional workshops and short courses for utility managers, operators, and policy makers.**

COMPONENT III: OPERATION AND MAINTENANCE

FOUR POINT ACTION PLAN.

- 1. Provide a minimum of \$17 million (FY96 funding level) annually through the Power Cost Equalization program.**
- 2. Provide a minimum of \$26.28 million (FY96 funding level) through Revenue Sharing and \$31.96 million (FY96 funding level) through Municipal Assistance annually.**
- 3. Identify and evaluate local operation and maintenance problems and successes to determine what types of assistance work best and why.**
- 4. Local Governments should analyze the potential of operation and maintenance partnerships.**

COMPONENT IV: FACILITY CONSTRUCTION

FIVE POINT ACTION PLAN .

- 1. Construct new, adequate sanitation systems for an average of 1,000 rural homes per year and upgrade existing systems as necessary.**
- 2. Wherever possible, at a community's direction, use force account construction for rural sanitation projects.**
- 3. Combine/coordinate the priority list processes of all State and federal agencies providing sanitation capital funds.**
- 4. Promote the research, and development, implementation and testing of appropriate new/alternative technologies.**
- 5. Provide technologies which meet the unique needs/capabilities and environment of each community.**

COMPONENT V: PROBLEM REGULATIONS AND REGULATORY FLEXIBILITY

FIVE POINT ACTION PLAN .

- 1. Develop and distribute a plain english regulatory guidebook tailored to rural Alaska.**
- 2. Ensure that regulations do not unnecessarily hamper the progress of improving rural sanitation conditions.**
- 3. Focus on results such as public health improvements rather than process.**
- 4. Relax regulations and permitting standards to allow for alternative/innovative rural sanitation technologies.**
- 5. Explore the feasibility of issuing a single community permit for rural water, sewer, and solid waste facilities.**

COMPONENT VI: BUDGET

FIVE POINT ACTION PLAN .

- 1. Provide a minimum of \$25 million per year in State funds to be matched through a combination of federal EPA and USDA-RD appropriations for rural sanitation construction projects managed through the Village Safe Water program.**
- 2. Ensure that Alaska gets an equitable share, based upon its needs, of federal formula funding (i.e. EPA Indian Set-Aside funds and IHS funding).**
- 3. Issue State General Obligation Bonds to augment annual State general fund appropriations for rural sanitation construction projects.**
- 4. Provide a minimum of \$2 million per year in State funds and \$2 million per year in federal funds for capacity building efforts. (This includes funding for RMWs, RUBAs, Operator Training and certification, Utility Management Training, and local involvement efforts).**
- 5. Provide stable financial assistance through the State PCE, Revenue Sharing, and Safe Communities programs.**

COMPONENT I: LOCAL INVOLVEMENT AND RESPONSIBILITY

THE CHALLENGE:

Strong community involvement is required up front and in each phase of project development if the Rural Sanitation 2005 Action plan is to succeed. Local desire, involvement and commitment in planning, decision making, capacity development and operation/maintenance/management of systems are absolutely essential. Capacity development, planning, design, construction and operation and maintenance assistance outlined in this Action Plan will be offered only to communities that request such support. Assistance under this plan should be driven by local demand and contingent upon local involvement.

Experience has shown that communities that play an active role in the development of their sanitation facilities are more likely to feel pride of ownership in their facilities. This pride of ownership leads to better utility operation, maintenance, and management of completed projects. Additionally, once residents gain a greater knowledge and understanding of the numerous issues surrounding rural sanitation improvements, they are more likely to want to become involved in improving their sanitation conditions, will place a higher value on their utilities and will have a greater appreciation and respect for their utility operators and managers. This too will lead to better utility operation, maintenance, and management practices.

The local involvement strategy outlines recommended steps for agencies and organizations to promote local involvement and local problem solving. However, it should again be emphasized that the success of these efforts is dependent upon communities and local residents.

The anticipated outcomes of this strategy are:

1. Residents will actively participate in sanitation improvement planning and decision making.
2. Communities will strive to build local capacity.
3. Residents will participate in and commit to the on-going operation and maintenance of their sanitation improvements.

COMPONENT I

LOCAL INVOLVEMENT AND RESPONSIBILITY RECOMMENDED FIVE POINT ACTION PLAN

1. Provide rural sanitation funding in two separate phases:
(1) comprehensive sanitation planning and (2) construction.
2. Conduct community sanitation workshops and presentations.
3. Offer environmental health education curriculum in local schools.
4. Award construction grants contingent upon communities meeting *agreed upon* performance targets.
5. Seek community assessment, evaluation and feedback on the effectiveness of sanitation related programs in responding to local needs.

RECOMMENDATION 1:

Provide Rural sanitation funding in two separate phases: (1) comprehensive sanitation planning and (2) construction.

Dividing rural sanitation projects into planning and construction phases by allotting time for the planning phase will allow residents to become fully involved in project planning, decision making and capacity building efforts. This in turn will lay the foundation for construction and post construction success as residents will feel an increased sense of ownership in their projects.

Time constraints are often associated with "project" grants - that is grants which are inclusive of planning, design, and project construction. In such cases, the planning phase of a project may be shortened so that construction can commence at the beginning of Alaska's short construction season. Similarly, communities may be less willing to focus the time and energy necessary for planning efforts if they believe it will delay project construction and ultimately project completion. Separating planning and construction *phases will* alleviate pressure to rush through the planning phase of a project in order to get on with construction and would allow time for community involvement and participation efforts.

Providing a planning period prior to construction would allow time for important "pre-construction" activities such as:

- Rural Utility Business Advisors (RUBAs) to assist communities in assessing their financial situation, and setting up management processes to better prepare them to operate new facilities.
- Residents to become fully apprised of available project options and to determine which technology best meets their needs and capabilities.
- Residents to become fully apprised of the link between adequate sanitation and health, the importance of proper system operation and maintenance, and the responsibilities associated with their sanitation systems.

- RUBAs, Remote Maintenance Workers, and regional health corporations to work together with communities to assess the experience and skills of the utility operators and management staff of each community and develop training plans to meet their needs.
- Identification and training of management and operations staff prior to facility construction.

PROPOSED METHODS FOR IMPLEMENTATION:

Two options are available for implementing this recommendation. Annual funding priority lists could be developed with separate grants made for sanitation planning and construction. Conversely, single "project" grants could be made with the stipulation that they be broken into planning and construction phases with a specified period allowed for planning.

Implementing either of these options will require the cooperation of state and federal sanitation funding agencies namely the Department of Environmental Conservation (DEC), Environmental Protection Agency (EPA), Indian Health Service (IHS), and the U.S. Department of Agriculture-Rural Development (USDA-RD).

TARGET DATES AND MILESTONES:

Memorandum of understanding signed between DEC, EPA, IHS, and USDA-RD agreeing to phase project planning and construction.

Target Date: October 1997.

DEC and IHS priority lists developed with project funding broken into planning and construction phases.

Target Date: DEC - priority list completed annually in January.

IHS - priority list completed annually in August.

RECOMMENDATION 2:

Conduct comprehensive community sanitation planning workshops and presentations.

Too often, the opportunity for residents to learn about sanitation projects and their importance is limited to "technical" meetings between the community council and the project engineer. By attending workshops prior to and during the planning phase of a project and periodically thereafter as needed, residents would better understand and appreciate:

- The importance of improved sanitation;
- Methods residents can use to initiate sanitation improvement processes;
- Various sanitation facility options available to communities;
- Pros and cons of various sanitation technologies;
- The affordability of various sanitation facility options including operation and maintenance costs, operating resource requirements, and revenue potential;
- The amount of effort required to operate, maintain, and manage a system and who needs to be involved including: the operator, the manager, the bookkeeper, the policy-making body, and the customers;
- The importance of paying user fees; and keeping a well trained utility operator and manager on the community pay roll;
- The role operators play in protecting facilities and the health of residents;
- The value of consistent and ongoing proper operation and maintenance of facilities; and
- Programs available to assist communities in meeting their sanitation improvement goals.

Additionally, forums could be provided for communities which have been successful in their sanitation efforts to share their experiences for the benefit of other communities. The method for providing this information sharing with the widest rural audience would be via the rural television network. Video interviews could be produced using residents and staff from communities which have completed sanitation projects and which are successfully operating, *managing* and maintaining their systems. Likewise, call in shows could be orchestrated during which television watchers could phone in questions for community residents and staff who have success stories to share.

PROPOSED METHODS FOR IMPLEMENTATION:

As a first step, the Department of Community and Regional Affairs should develop a comprehensive community sanitation planning guidebook and recommended planning process. Using the guidebook as a tool, individuals currently working with and interacting with villages could coordinate and conduct planning workshops and presentations. Such individuals include: RUBAs, RMWs, VSW and PHS engineers, Regional Health Corporation staff, Native Corporation staff, PHS sanitarians, health aids, VISTAs, AmeriCorps workers, and persons hired under the EPA Indian General Assistance Program. This effort would need to be added as a part of their annual workplans and as an activity they conduct in conjunction with their other responsibilities during scheduled trips to communities. Additionally, these individuals may need training in community involvement and planning techniques. A pilot program should be initiated to "ground test" processes and methods for increasing local involvement and commitment in sanitation improvements. If the pilot program proves successful, the processes and methodologies developed should be taught to the individuals identified above and used in conjunction with the comprehensive community sanitation planning guidebook.

Producing and airing television programs would require the willingness and cooperation of the Alaska Rural Channel and Alaska Three, a new television channel which will broadcast programs on education and job training. If necessary, small grants could be sought for related video productions.

TARGET DATES AND MILESTONES:

Completion of the Comprehensive Community Sanitation Planning Guidebook.

Target Date: Spring, 1998.

Initiate pilot program for testing processes and methods for increasing local involvement and commitment in planning and sanitation improvements.

Target Date: Summer, 1998.

Train appropriate staff in use of the guidebook and methods for increasing local involvement and commitment in planning and sanitation improvements.

Target Date: August, 1998.

Work plans of relevant staff adjusted to include community workshops.

Target Date: 1998.

Agreement with rural television station(s) to air sanitation related programming.

Target Date: October 1997.

RECOMMENDATION 3:

Offer environmental health education curriculum in rural schools.

School aged children are typically given the family chore of emptying honeybuckets and hauling water from watering points to their homes. Yet they often lack a full appreciation of the link between adequate sanitation and waterborne disease. Providing curriculum in schools which teaches children how sanitation systems work, their importance, and methods for reducing contact with and the spread of waterborne disease will likely result in reduced incidences of waterborne diseases. Additionally, it would make them aware of the importance of properly operated and funded sanitation systems when they come to the point in their lives that they have to pay water and sewer user fees. It would also introduce future generations to the professions of utility operation and management.

Raising the interest of high school aged children in sanitation related issues in communities targeted to receive construction grants could promote local involvement in project planning. This could be achieved through a variety of methods such as assigning projects to plan community sanitation systems or to require that they attend community planning workshops.

The University of Alaska Southeast - Sitka Campus in conjunction with Mt. Edgecumbe High School and the Sitka School district are in the process of developing an environmental technology curriculum which is tailored to rural Alaska schools. Teachers from rural schools across the State are actively participating in the curriculum development. It will include study guides, workbooks and hands-on materials such as water testing kits.

Unfortunately, the development of environmental health and technology curriculum does not necessarily mean it will be taught. Efforts should be made on several fronts to place the curriculum in the hands of educators across the State and encourage its use in rural science or health classes. The curriculum developers, education associations and the Alaska Department of Education could all make important contributions to this effort.

PROPOSED METHODS FOR IMPLEMENTATION:

The University of Alaska Southeast - Sitka Campus should continue development of rural Alaska environmental health/technology curriculum and offer training for rural school teachers on curriculum delivery. The Department of Education should review the curriculum and support its inclusion as an education module for rural science or health classes as appropriate. Wherever possible, school teachers should partner with technical assistance providers and utility staff to give presentations as part of the curriculum delivery.

The University of Alaska Southeast, as developers of the curriculum, should seek opportunities to make presentations to educational groups such as the Association of Alaska School Boards, Alaska Association of School Administrators, Alaska Health Education Consortium, Alaska Science Teachers Association and others.

In order to promote the curriculum and make it more enticing to school children, the Department of Environmental Conservation and the Alaska Water/Wastewater Management Association should sponsor a State-wide poster/essay contest in rural communities in conjunction with the learning materials. Rural youth could provide a means for relaying success stories.

TARGET DATES AND MILESTONES:

UAS Rural Environmental Technology Program developed and implemented.
Target Date: September, 1997

High School Environmental Health/Technology curriculum developed.
Target Date: September, 1997

Initial training for core group of rural teachers in curriculum delivery offered.
Target Date: August, 1997

Review of curriculum by the Department of Education
Target Date: ?

Based on its review, DOE identifies curriculum to districts and supports its inclusion in annual class workplans.
Target Date: Ongoing

Environmental Health/Technology Curriculum tested in pilot schools.
Target Date: 1997 - 1998 Academic year

DEC and AW\WMA initiate poster/essay contest in conjunction with curriculum.

Target Date: 1997 - 1998 Academic year

Summer Institute for rural teachers in curriculum development and delivery offered.

Target Date: July, 1998

RECOMMENDATION 4:

Award construction grants contingent upon communities meeting agreed upon performance targets.

It makes little sense to construct expensive facilities in communities which have not shown the ability/desire to take on the responsibility of ensuring the continued proper operation and management of facilities once they are completed. Constructing systems under these conditions would place systems in jeopardy of failure which could require costly repairs or the complete rebuilding of the systems. This would be a tremendous waste of money and would impede the progress of the Rural Sanitation 2005 Strategy. The Council therefore recommends that construction grants only be offered to communities which have met certain performance targets or goals or who are making significant progress in working toward meeting such standards.

Performance targets should be developed as a collaborative effort between the community and the funding agency and should recognize each organization's legal and statutory obligations and the community's individual needs.

This partnership between agency and community could be in the form of community action agreements where an agreed upon approach would be the working document guiding the project.

Performance standards should include, but not be limited to: hiring an operator who has or is receiving adequate training and certification; ensuring that the community's administrator, manager, clerk and/or operator obtains utility management training; the utility has sound financial and managerial processes in place; and strong local participation in the planning phase of a project.

These prerequisites to construction funding would provide motivation for communities to become actively involved in project planning and development. Additionally, prioritizing award of State and federal construction grants based upon the ability to properly operate and manage systems will provide an incentive for communities to make trained utility staff a priority.

Dividing sanitation funding into planning and construction phases (see recommendation on page 9) would allow time for communities to meet performance criteria. Planning should clearly outline the steps which communities will need to take in order to meet baseline standards required for progression to the construction phase of a project (such as paying for operation and maintenance). Failure to meet these standards would preclude the construction of sanitation improvements.

PROPOSED METHODS FOR IMPLEMENTATION:

Two options are available for implementing this recommendation: (1) Annual funding priority lists would be developed with grants made either for sanitation planning or construction. Planning grants would be offered to assist communities in increasing local involvement and capacity building efforts to meet the performance standards required to receive a construction grant. Communities which have not met performance standards would not be eligible for consideration on the construction grant priority list. OR (2) A single grant could be made with the stipulation that it be broken into a planning phase and a construction phase with construction not occurring until performance standards are met. This option may be less desirable since it could require tying up construction funds for a prolonged period if a community continued to fail to meet the performance standards necessary to move from the planning phase to the construction phase.

Implementing either of these options will require the cooperation of state and federal sanitation funding agencies namely the Department of Environmental Conservation, Environmental Protection Agency, Indian Health Service, and the Rural Development Administration.

TARGET DATES AND MILESTONES:

Comprehensive Performance Standards developed.

Target Date: October, 1997

Memorandum of Agreement signed between State and federal funding agencies which outlines the performance standards that will be a prerequisite to eligibility on State and federal annual priority funding lists.

Target Date: July, 1998

Performance standards instituted as a prerequisite to construction funding.

Target Date: 1998

RECOMMENDATION 5:

Seek community assessment, evaluation and feedback on the effectiveness of sanitation related programs in responding to local needs.

The key to implementing the Rural Sanitation 2005 Action Plan lies in providing the best possible services to rural communities and getting the "biggest bang for the buck" in delivering such services. The people in the best position to assess their sanitation related needs and evaluate the effectiveness of programs are the programs' customers - residents of rural communities.

Programs can not ensure they are providing the best possible services unless they receive input, feedback, and evaluation from their customers. Tailoring services to meet community needs, and using feedback to improve services will help to better address many rural sanitation related issues. The following key components outline a strategy to accomplish this:

- Find out what people think they need and can afford;
- Assess whether programs/services exist to meet such needs;
- Deliver services or enable communities to utilize assistance programs;
- Create and use feedback loops to let service providers know if they're accomplishing what is intended.

This process will provide a routine way of soliciting information on how to improve existing programs and services to best match the needs of communities and will identify any areas where needs and capacity building are not being met. This process will also strengthen the links between service providers and communities.

PROPOSED METHODS FOR IMPLEMENTATION:

On a statewide level, DCRA, ANHB, DEC, IHS, and EPA should form a workgroup to conduct and evaluate the responses to a comprehensive rural survey/assessment of (1) planning, training, technical assistance, and operation and maintenance and capacity needs and (2) feedback on current program services. If the results of the survey prove useful to programs and service providers, the process should be used as a model and conducted annually.

Additionally, agencies providing sanitation related services should request routine feedback from the communities they are working with about what

portions of their program are of greatest/least benefit and what measures could be taken to improve services. Annually, each program should evaluate its successes, failures, and community feedback to determine what, if any, changes need to be made to the program.

TARGET DATES AND MILESTONES:

Statewide rural survey/assessment:

Gain a commitment from DEC, ANHB, DCRA, IHS and EPA to allow their representative the time necessary to participate in the statewide rural sanitation survey/assessment workgroup effort.

Target Date: October, 1997

Complete development of survey/assessment form and mail/deliver to target respondents

Target Date: November, 1997

Issue draft evaluation of survey/assessment

Target Date: January, 1998

Issue final report and proposed next steps, including recommendations for future use of the statewide survey/assessment.

Target Date: February, 1998

Routine Community Feedback/Program Evaluation

On a program by program basis, seek routine feedback from communities.

Target Date: Ongoing

An evaluation of community feedback by each rural sanitation assistance program to determine changes needed to the program.

Target Date: Annually

COMPONENT II: CAPACITY DEVELOPMENT

THE CHALLENGE:

The 1996 reauthorization of the federal Safe Drinking Water Act requires States to develop and implement programs to assist communities in gaining the "financial, managerial, and technical capacity" to properly operate, maintain, and manage drinking water utilities. If States do not have approveable capacity building and operator training programs in place by 1999, they will lose annual federal funding for loan projects. In Alaska's case this will amount to up to approximately \$4 million per year. Additionally, the law requires States to ensure that all new drinking water systems built after 2000 have adequate financial, managerial, and technical capacity. By the year 2005 the State must ensure that all systems new and old, have this capability. The State of Alaska believes it will be able to meet the federal requirement for an "acceptable" capacity building effort if the recommendations outlined on the following pages are implemented. But the importance of these recommendations go way beyond ensuring the State's ability to maximize federal appropriations.

The need for increased capacity development is mentioned in all of the recent studies on rural Alaska sanitation issues. The 1992 Alaska Sanitation Task Force's report "A Commitment to Alaskans" attributed premature system failures of the past to untrained operators and managers. The 1994 U.S. Congressional Office of Technology Assessment's Report to Congress clearly identified inadequate training and technical assistance as a main culprit for the failure of sanitation systems. The report characterized the situation as "sanitation facilities in villages with few resources are often run by part time operators or volunteers, who are generally ill-trained. As a consequence, the level of oversight is inadequate to respond to system malfunctions." Likewise, the 1995 Federal Field Working Group's Report to Congress states "it will not be possible to improve sanitation in a very significant portion of rural Alaska unless assistance and resources are available enabling community governments to successfully meet the specific challenges required to maintain and manage sanitation facilities". The Governor's Council on Rural Sanitation is in full agreement with these assessments and the need for increased community capacity building.

Protecting the large public investment in rural sanitation facilities demands a similar effort to ensure the technical competency of the operators and managers of these facilities. Otherwise, expensive utilities and public health and safety are put at risk. Trained, competent utility operators and managers are vital to the protection of public health and the ongoing success of sanitation utilities. This is just as true in rural Alaska as it is in urban Alaska.

Although rural water and sewer systems are typically small they are often very complex, making skilled operators and managers important to their continued success. Rural governments are responsible for the management, operation and maintenance of sanitation facilities constructed with State and federal funding. Utility personnel must have the training and technical background necessary to carry out the duties associated with this responsibility. Lack of operational and managerial knowledge can result in the malfunction, freeze-up, or total breakdown of systems.

Existing systems risk premature failure unless greater emphasis is placed on routine operation and preventative maintenance management programs. To protect capital investments in sanitation facilities, technical assistance and training efforts must be utilized by utility operators and managers. There is a direct relationship between the successful continued life of a facility and properly trained staff to operate, maintain and manage the utility. According to the Institute of Social and Economic Research, if the average life of rural sanitation facilities statewide can be extended even by just one year, the benefits from reduced annual capital replacements would approximate \$4.2 million per year. These numbers demonstrate that it is worth investing \$2 - \$4 million per year in capacity development programs which provide training and technical assistance in system operation and maintenance.

Increased regulatory requirements which necessitate new technology and increasingly sophisticated systems in rural communities are another reason that adequate resources for training and education are essential.

It is imperative that a full scale effort to ensure communities develop the capacity to properly plan, operate, maintain, and manage rural sanitation facilities is a key component of the Rural Sanitation 2005 Action Plan.

COMPONENT II

CAPACITY DEVELOPMENT RECOMMENDED FIVE POINT ACTION PLAN

1. **Maintain the Remote Maintenance Worker (RMW) program at a minimum of thirteen positions.**
2. **Incrementally expand the Rural Utility Business Advisor (RUBA) program to at least twelve positions.**
3. **Improve Communication and Coordination between capacity development programs and communities.**
4. **Promote Opportunities for Advanced Training.**
5. **Conduct Regional Workshops and Short Courses for Utility Managers, Operators and Policy Makers.**

RECOMMENDATION 1:

Maintain the Remote Maintenance Worker (RMW) program at a minimum of thirteen positions.

Working in partnership, it is recommended that the State and the U.S. Environmental Protection Agency equally fund a minimum of thirteen Remote Maintenance Worker (RMW) positions annually. This is the program's *existing* base level. These positions will continue current efforts to train local operators, offer communities technical assistance with the operation and maintenance of their facilities and troubleshoot when system emergencies occur.

RMWs reside in "hub" communities and provide assistance to 10-15 villages in the same geographical area. RMW training is provided to operators on-site and is tailored to meet the unique skill requirements associated with each community's water and sewerage systems. An emphasis is placed on assisting local operators in gaining the skills and knowledge necessary to obtain State water and wastewater operator certification at a level commensurate with the complexity of their community's systems.

When emergencies occur, such as those resulting from extreme winter weather or spring flooding, RMWs respond with on-site technical assistance. In such cases, the local operator must be present to help the RMW work through the problem. The RMW helps operators become more confident and proficient at handling emergency situations on their own - a positive step toward self-sufficiency.

RMWs also work with communities to develop and implement preventive maintenance plans for their systems. This includes having an inventory of spare parts readily available and schedules for equipment maintenance.

The long-term goals of the RMW program are as follows:

- Assist communities to become self-sufficient in the operation and maintenance of their water and wastewater systems by improving the skills of village operators. By building local capacity and assisting communities in becoming self-sufficient, the ultimate goal of RMWs is to work themselves out of a job.

- Ensure the maximum design life of sanitation facilities and protect capital investments in rural sanitation systems.

Acting as circuit riders, thirteen RMWs provide assistance to a minimum of 150 villages annually. Each RMW is responsible for:

- On-site, over-the-shoulder training as well as classroom training for village operators and alternate operators in water and wastewater system operation and maintenance;
- Assistance in the development and implementation of preventive maintenance plans and schedules;
- Acting as a liaison to improve communication between operators, village leaders, Councils, utility administrators, health corporations, DEC and IHS;
- Troubleshooting and emergency response assistance, both on-site and over the phone to guarantee continued service during severe cold weather, floods, and operator turnover.
- Evaluating operator performance and developing recommended training schedules;
- Evaluating plant operators and system capabilities;
- Evaluating equipment status, and on-going maintenance efforts;
- Teaching operators and alternate operators testing requirements, procedures and reporting requirements necessary to maintain compliance with federal and State regulations; and
- Assisting engineers in the preparation of operation and maintenance manuals for new or renovated facilities.

PROPOSED METHODS FOR IMPLEMENTATION:

The State should continue its current funding level of \$660,000 annually for RMW services which should be matched on a dollar for dollar basis by the Environmental Protection Agency.

TARGET DATES AND MILESTONES:

RMW services provided to 150 rural communities.

Target Date: Ongoing

RECOMMENDATION 2:

Incrementally expand the Rural Utility Business Advisor (RUBA) program to at least twelve positions.

Working together in partnership, it is recommended that the State and the Environmental Protection Agency fund a minimum of eight RUBA positions in SFY 1999, ten RUBA positions in SFY 2000 and twelve RUBA positions in SFY 2001-2005. This will enable RUBAs to provide services to all rural regions of the State served by RMWs by July, 2000. The reason for incrementally expanding the program as opposed to recommending funding for twelve positions immediately, is to allow time for the program to grow at a controlled rate.

Similar to RMWs, RUBAs act as circuit riders serving 10-15 villages each. Unfortunately, the demand and need for RUBAs outstrips the program's current abilities with only three RUBA positions.

RUBAs provide skilled assistance to communities to properly manage their utilities. Training utility managers, clerks and operators on proper financial and management procedures will enable them to set proper user fees and collect revenues needed to pay operating expenses. Utility services upon which residents depend will become more reliable. The RUBA program equips community officials with the necessary skills to manage their utilities like a business by providing on-site training and assistance in the following areas:

- utility organizational structures
- budgeting
- billing procedures and policies
- financial and personnel management
- user fee structures
- user fee collection
- accounting
- computer usage
- IRS debt resolution

RUBAs employ a step-by-step methodical and practical approach in implementing the program.

First, RUBAs establish a working relationship with utility leaders and clerks. Second, the budgeting, record keeping, and accounting practices of each *utility* is assessed together with the proficiency level of key personnel. Based upon these assessments, a training program is developed by the RUBA to meet the unique needs of each utility.

Using one-on-one over the shoulder training, each RUBA:

- works through the budgetary process with utility personnel offering advice and teaching budgeting techniques;
- works with village clerks as they make book entries and assist them in setting up and maintaining accounting systems;
- teaches clerks and administrators methods for handling contracts and purchasing equipment and materials;
- assists utilities in setting up user fee schedules and collection procedures.

Whenever possible, RUBAs should begin their training and technical assistance efforts in communities during the planning phase of a project and ensure practices and skills are in place prior to project construction. This will ensure enough time for the RUBA to provide basic utility management training and to assist communities in conducting an in-depth analysis to determine the type of system they can afford to operate and maintain.

PROPOSED METHODS FOR IMPLEMENTATION:

The State should increase its current funding level to \$500,000 in SFY 1999, \$550,000 in SFY 2000 and \$650,000 per year thereafter for RUBA services. These amounts should be matched on a dollar for dollar basis by the Environmental Protection Agency.

TARGET DATES AND MILESTONES:

RUBA services provided to 84 rural communities.

Target Date: July 1998

RUBA services provided to 120 rural communities

Target Date: July 1999

RUBA services provided to 145 rural communities

Target Date: July 2000 - July 2005

RECOMMENDATION 3.

Improve Communication and Coordination between capacity development assistance programs and between programs and communities.

There are several organizations, agencies, and institutes involved in rural sanitation capacity development. It is essential that these groups coordinate their efforts to stretch limited resources as far as possible and work together to ensure the implementation of a comprehensive approach to training and technical assistance. The following steps are recommended as a means of improving communications and promoting the ability of each service provider to know what the other is doing where and when:

- agencies should integrate training schedules into project planning;
- basic training should be completed prior to the initiation of any sanitation construction project;
- the Alaska Water and Wastewater Management Association (AWWMA) should create a statewide clearinghouse of training information and resources;
- a second rural-interest board member should be appointed to the statewide Governor's Water and Wastewater Works Advisory Board;
- corporations and agencies should (a) coordinate training in order to avoid duplication of efforts, and (b) report training which they plan to provide each year and those training/technical assistance needs which they will not be able to meet. This information can then be directed to other agencies and private trainers who may have access to the resources necessary to address unmet training needs.

It is equally important that communication and coordination be enhanced between capacity development programs and their customers - rural communities. Unless communities understand the requirements which they are expected to meet and the availability of programs to meet their needs, capacity development efforts will not be locally driven. If not locally driven, capacity development efforts will fail. Similarly, if training and technical assistance

providers do not receive input from villages, they will be unable to tailor and structure their programs to provide the best possible services to communities. The following steps are therefore recommended:

- DEC should develop and distribute a directory of rural sanitation training and technical assistance programs. This should include detailed descriptions of each program, how to apply for assistance, and a listing of who to contact for more information. The directory should be mailed to every rural community in the State.
- Newsletters from training providers should be consolidated so that villages have a single comprehensive source of information and updates;
- RMWs, RUBAs, and Regional Health Corporations should work with local operators and managers to develop individualized training programs based upon the critical tasks required to operate and manage a particular system; and
- Agencies should research and implement communication and training techniques that are the most compatible with local cultures. Regionally sensitive cross-cultural training must be conducted for agency staff and should include discussions regarding the diversity of individual communities. Additionally, people in villages need to understand limits of State and Federal government and the culture of the bureaucracy. Cross-cultural training must be built into planning sessions involving both agencies and communities to encourage mutual understanding and to increase communication levels in reaching mutually beneficial system development agreements and in imparting system ownership to the community;
- Annual community based evaluations of capacity building programs should be conducted. Using community input provided either through responses to questionnaires or through rating surveys, capacity development programs should assess their successes and failures and modify their programs accordingly (see Component I - Recommendation 5 on page 24).

PROPOSED METHODS FOR IMPLEMENTATION:

Nearly all of the steps required to implement this recommendation can be achieved through the cooperation of existing programs. However, a small amount of funding may be necessary for (a) the production and distribution of

the training and technical assistance program directory and (b) the Alaska Water and Wastewater Management Association to create a statewide clearinghouse of training information and resources. The Department of Environmental Conservation and the Environmental Protection Agency should provide funding for the assistance directory. If funding is needed for the AWWMA clearinghouse, the National Rural Water Association (NRWA) should be approached. NRWA receives millions of dollars annually to assist rural communities, but to date directs little funding to rural Alaska activities.

TARGET DATES AND MILESTONES:

Training schedules integrated into project planning.

Target Date: beginning July 1998

Basic training required prior to initiation of any construction project.

Target Date: beginning July 1998

Statewide clearinghouse of training information and resources created and maintained by the AWWMA.

Target Date:

Governor appoints a second rural-interest board member to the statewide Governor's Water and Wastewater Works Advisory Board.

Target Date:

Corporations and agencies report planned training and unmet training/technical assistance needs to other agencies and private trainers.

Target Date:

DEC develops and distributes a rural sanitation assistance program directory.

Target Date:

Newsletters and updates from training providers consolidated into a single comprehensive source of information.

Target Date: initiation ????. Ongoing after initiation.

RMWs, RUBAs, and Regional Health Corporations work with local operators and managers to develop individualized training programs.

Target Date: initiation July 1998. Ongoing after initiation.

Conduct research and implement communication and training techniques that are the most compatible with village cultures.

Target Date: Ongoing.

Annual community based evaluations of capacity building programs conducted. Using community input programs assess their successes and failures and modify their programs accordingly (see Component I - Recommendation 5 on page 24).

Target Date: Ongoing.

RECOMMENDATION 4.

Conduct Regional Workshops and Short Courses for Utility Managers, Operators, and Policy Makers.

Funding should be made available annually to assist regional health, non-profit and government agencies in providing workshops for utility operators, managers, administrators and clerks, and policy making bodies. Remote rural communities do not have access to the many support professionals that are found in urban areas. Consequently, rural utility staff must be knowledgeable in many different professional areas and must keep that knowledge current. Workshops provide the means for offering this type of "short-course" training. Short courses in utility management and operation should be offered together with the training necessary to keep up with changing technologies, regulations, and requirements. Training and refresher courses should be provided for rural utility staff in areas such as new equipment technology advances, changes in personnel laws and requirements, and changes in safety regulations. Regional health and non-profit organizations, RUBAs, RMWs, government agencies and private trainers should continue to work together to ensure that workshops are provided to meet the individual needs of each region and utility. This will require close coordination, on-going information exchanges, and regional/local training needs assessments.

PROPOSED METHODS FOR IMPLEMENTATION:

The cost of conducting workshops should be available through existing programs (ie: the Indian Health Service and DEC). However, additional funding will be needed for utility staff travel costs. The Safe Drinking Water Act authorizes EPA to spend up to \$15 million per year nationally to reimburse travel costs incurred by rural operators to attend training. The State should actively pursue an equitable share of this funding once it becomes available and work to ensure that EPA fully understands that costs associated with travel are greater in rural Alaska than elsewhere in the nation.

TARGET DATES AND MILESTONES:

Regional Workshops and short courses conducted for rural utility staff.

Target Date: ongoing

Rural Alaska operators get a fair share of EPA training travel reimbursement funding.

Target Date: ????

RECOMMENDATION 5.

Promote Opportunities for Advanced Training.

The previously described programs primarily consist of over-the-shoulder training or short courses. There is also a substantial need for programs that provide more comprehensive, structured education for individuals seeking employment or enhancement of skills and credentials in the utility operation or management fields. The State and federal government should encourage and support higher education and vocational training such as the University of Alaska Southeast's Rural Alaska Sanitation Education program, the Alaska Job Corps Center, the Ilisagvik College, the University of Alaska Fairbanks' College of Rural Alaska and AVTEC. These institutions should coordinate their efforts with each other and "front-line" delivery agencies such as DEC, PHS, DCRA, and regional health corporations.

The recently passed Safe Drinking Water Act authorizes the EPA to fund regional water training/technical centers. Although authorized, funding was not made available for the centers this year. However, it is anticipated that EPA will seek the funds necessary to establish these centers during the next federal fiscal year. The State, regional health corporations, statewide non-profits and rural communities should aggressively pursue having such a facility located in Alaska.

There are several EPA funded water related regional centers located in the "lower 48" which are easily accessible to operators from surrounding States. A center is not available which can be affordably accessed by Alaska operators. In 1995 the Alaska Congressional delegation made a persuasive case before Congress that Alaska should be considered a region when decisions were made regarding where the authorized technical centers should be located. Alaskans should work together to promote the State as a candidate for such a facility. The training/technical center could be established as a centralized facility where mid-level and advanced operator training may be obtained. The center should be located at an existing institute of higher learning. Due to its current efforts in implementing a rural sanitation curriculum and certification/degree programs, the University of Alaska Southeast may be the optimal site should EPA agree to locate such a facility in Alaska. Any site chosen should have dormitories to reduce living expenses and should also include technical labs for hands-on training. There will be *rural* utility staff who will be unable to leave their communities for an extended period of time and the technical center would only

be able to handle a limited number of students during any given period. It is, therefore, recommended that should a technical center be located in Alaska, one of its efforts should be designing and developing methods for delivering progressive mid-level and advanced short-courses off-site in rural hub communities.

PROPOSED METHODS FOR IMPLEMENTATION:

The State, regional health corporations, statewide non-profits and rural communities should work closely with EPA to sensitize EPA policy makers to Alaska's need for a drinking water training/technical center.

TARGET DATES AND MILESTONES:

If it appears that an appropriation will be made available for EPA funded training/technical centers, Alaska agencies and organizations will produce and forward a proposal for locating such a facility in Alaska.

Target Date: 1998.

COMPONENT III: OPERATION & MAINTENANCE

THE CHALLENGE:

In most rural communities, sanitation services are the most technically demanding and costly community services provided. Water and sewerage systems that meet adequate sanitation standards involve substantial costs for electricity, labor, fuel, equipment, and personnel training. The more difficult the geotechnical conditions, the more expensive and complicated service delivery is likely to be - and Alaska conditions are among the most challenging in the nation.

Rural communities are finding it increasingly difficult to generate the revenues necessary to properly operate, manage, and maintain their sanitation systems. While capital funding is increasing to assist communities construct basic sanitation utilities, funding assistance to run local governments and provide local services is being reduced.

Communities try to generate the necessary revenues for the continued operation and maintenance of their water and sewer utilities through user fees. However, due to the small population base found in most rural communities, O&M costs must be shouldered by a much smaller group than in urban areas. This means that rural residents typically face higher water and sewer rates than urban Alaskans. Likewise, rural residents pay more for electricity than their urban counterparts. Unfortunately, rural communities typically lack a strong economic base and average household income lags far behind that found in urban areas of the State. Rural residents lack the disposable income to pay the high water, sewerage, and electric costs resulting from the lack of economies of scale. Jobs are few and far between and without adequate sanitation services it is difficult for communities to attract industries or other types of economic opportunities.

Unfortunately, as the number of communities that depend on systems with relatively high operation costs grow, State shared revenues of communities are being reduced. The largest sources of discretionary revenue to small rural communities has been revenue sharing and municipal assistance provided by the State of Alaska. Since 1985 these sources of revenue have been reduced by over sixty percent.

NOTE: Adequate O&M also dictates that components I and II of this strategy (local involvement and capacity development) be fully implemented.

COMPONENT III OPERATION AND MAINTENANCE

RECOMMENDED FOUR POINT ACTION PLAN

1. Provide a minimum of \$17 million (FY96 funding level) annually through the Power Cost Equalization Program.
2. Provide a minimum of \$26.28 million (FY96 funding level) through Revenue Sharing and \$31.96 million (FY96 funding level) through Municipal Assistance annually.
3. Identify and evaluate local operation and maintenance problems and successes to determine what types of assistance work best and why.
4. Local governments should analyze the potential of operation and maintenance partnerships.

RECOMMENDATION 1.

Provide a minimum of \$17 million (FY96 funding level) annually through the Power Cost Equalization program.

The Power Cost Equalization (PCE) program has been helping rural electric customers by keeping high electric charges down since 1985. The program is designed to bring the consumer price of electricity in rural Alaska down to a level close to the price prevailing in urban Alaska. Specifically, PCE pays a portion of the difference between the average cost of producing power in rural Alaska and the average cost in urban Alaska. But even with PCE, rural residents typically pay twice as much for electricity in comparison to urban Alaskans. PCE is not a welfare program. It is an EQUALIZATION program. It was developed by the legislature with the intent that an equal amount of funding be spent in rural Alaska as was spent in urban Alaska on dams and reducing energy costs.

Because water and sewer facilities are often large consumers of electricity, PCE is a critical link in making sanitation services affordable in rural Alaska. PCE funds approximately 50 percent of the electrical costs associated with water and sewer systems in rural communities. The loss or reduction of PCE would severely retard implementation of the Rural Sanitation 2005 Action Plan. Rural residents would not only be faced with higher electric bills but their water and sewer bills would also increase substantially. If this happens, many communities may not be able to afford existing sanitation services - let alone improved services. A 1995 study conducted by DEC found that without PCE monthly fees for water and sewer in a rural community with piped systems would more than double from \$47 to \$97 per household per month. Nearly every water and sewer system is energy intensive - even watering points and washeterias.

Of all of the issues deliberated by the Governor's Council on Rural Sanitation, PCE received the greatest public attention. Residents from all over the State called in to provide testimony supporting continuation of the program and to let the Council know the dire impacts reduced PCE funding would have on community sanitation services and the general economy.

The Council strongly urges that a minimum of \$17 million be made available through the PCE program annually. This conforms to the expressed intent of the legislature which in 1993 passed a bill which in part dealt with future

funding for the PCE program. The Act states "The legislature recognizes the high cost of electric power in rural Alaska and intends that funding for power cost equalization from the general fund and from the power cost equalization and rural electric capitalization fund remain at a minimum of \$17,000,000 annually through the year 2013. The legislature further intends that this long-term commitment to the power cost equalization program will permit and encourage the electric utility industry and its lenders to develop the plans, make the investments, and take other actions that are necessary or prudent to meet the utility needs of residents in rural Alaska."1. (HCS CSSB 106)

PROPOSED METHODS FOR IMPLEMENTATION:

State agencies, statewide organizations, and local residents should work together with the Alaska Rural Electric Cooperative Association to develop and distribute educational materials which explain the importance of PCE to the urban public and the State legislature. These materials should outline possible methods for ensuring the recommended funding levels for PCE such as a one time State appropriation to the PCE fund to increase its base to the level necessary to ensure \$17 million per year in interest dividends for distribution or providing annual appropriations to augment existing distribution levels from the fund.

TARGET DATES AND MEASURES:

As needed, State agencies, statewide organizations, and local residents should work together with the Alaska Rural Electric Cooperative Association to develop and distribute educational materials on the importance of PCE to rural Alaska.

Target Date: January, 1998

The Alaska legislature abides by its intent expressed in 1993 to keep the PCE program operating at \$17 million per year through the year 2013.

Target Date: Ongoing.

The Governor and the State Legislature adopt a budget which includes a minimum of \$17 million per year for PCE.

Target Date: Annual budget process.

RECOMMENDATION 2:

Provide a minimum of \$26.28 million (FY 96 funding level) through Revenue Sharing and \$31.96 million (FY 96 funding level) through Municipal Assistance¹ annually.

Funds provided through Revenue Sharing and Municipal Assistance¹ have a significant impact on the ability of village governments to afford the operation and maintenance of sanitation facilities. These programs contribute greatly to the financing of local governments in rural Alaska which is especially critical where local governments are responsible for the operation of sanitation facilities. User fees are often inadequate to cover the expenses associated with operating and maintaining sanitation systems. Revenue Sharing and Municipal Assistance help bridge this gap.

For small, rural communities the decline in Revenue Sharing and Municipal Assistance has resulted in increasing reliance on local revenue to support the costs of more and more local government services. Revenues derived from local sources, such as: sales tax, enterprise activities, user fees, fund raisers and gaming are increasingly used by cities and villages to support local services. The efforts of the local governments to raise revenue has in many cases not replaced the financial support lost from State sources for operations. The result is an ever tightening fiscal vise. With the greater number of rural communities receiving improved sanitation systems, the operation and maintenance of water and wastewater systems will compete with public safety, local road maintenance, building and equipment maintenance, and other local government services for scarce local government revenues.

Without the recommended base levels of funding for Revenue Sharing and Municipal Assistance, local governments may not be able afford to pay even a part-time manager, let alone a clerk or sanitation operator. Without a manager and a clerk, it will be difficult if not impossible for local governments to collect user fees - a situation which will lead to the further demise of sanitation systems. If revenue sharing and municipal assistance are cut back below the levels recommended, many communities will only be able to support an operator on a part-time basis and at a salary level that is so low that it will be

¹ The title of Municipal Assistance was changed by SB 29 to the "Safe Communities" program.

impossible to keep a trained employee for any length of time. High turnover rates will lead to an on-going and costly cycle of training new employees.

The graph below indicates the extent of reductions to the Revenue Sharing and Municipal Assistance programs over the past ten years.

State Revenue Sharing Program

Fiscal Year	Total Appropriation*	Fiscal Year	Total Appropriation*
1985	\$60,350,000	1992	\$38,347,000
1986	\$59,632,200	1993	\$35,279,200
1987	\$47,879,100	1994	\$32,809,700
1988	\$40,773,400	1995	\$28,249,133
1989	\$40,773,400	1996	\$26,271,700
1990	\$38,347,000	1997	\$24,170,000
1991	\$38,347,000	1998	\$22,719,800
*Including both the Tax resources Equalization Account and the Miscellaneous Municipal Services Account. (Source: DCRA)			

Municipal Assistance/Safe Communities Program

Fiscal Year	Total Appropriation*	Fiscal Year	Total Appropriation*
1985	\$81,306,800	1992	\$46,648,000
1986	\$81,306,800	1993	\$42,916,200
1987	\$65,858,500	1994	\$39,912,100
1988	\$56,084,400	1995	\$34,364,367
1989	\$56,084,400	1996	\$31,959,000
1990	\$52,747,000	1997	\$29,402,300
1991	\$49,130,200	1998	\$27,638,200
Source: State of Alaska Department of Community and Regional Affairs			

The Council recognizes that the State is facing declining revenues and as such is recommending funding levels which it believes are prudent given the importance of these programs. Funding for the State Revenue Sharing program is recommended at SFY 96 funding levels of \$26.28 million per year and funding for Municipal Assistance is recommended at \$31.96 million. This is over sixty percent less than 1985 funding Municipal Assistance and Revenue Sharing funding levels.

PROPOSED METHODS FOR IMPLEMENTATION:

Given the predominantly "urban" nature of the Legislature, it may be necessary to initiate a campaign to sensitize legislators to the importance of these two programs to rural Alaska and the impacts of reducing funding made available through them.

TARGET DATES AND MEASURES:

Organizations representing local governments such as the Alaska Municipal League and the North and Northwest Mayors Conference determine whether an effort is needed to urge legislators to fund Revenue Sharing and Municipal Assistance at the recommended levels.

Target Date: Annually in January

Organizations representing local governments work to ensure adequate funds are made available through these programs.

Target Date: Annually January through May

The State Budget includes recommended funding levels for Municipal Assistance and Revenue Sharing.

Target Date: Annually in June

RECOMMENDATION 3:

Identify and evaluate local operation & maintenance problems and successes to determine what types of assistance works best and why.

Understanding why some communities are more successful than others in operating and maintaining their sanitation facilities could lead to better targeting of available resources and/or the creation of new resources to address local operation and maintenance (O&M) needs.

Two projects are underway to evaluate the technical/managerial and financial components of local O&M programs. These are the Alaska Native Health Board's O&M Pilot Project program and the Institute of Social and Economic Research's Econometric Study of O&M on Life Cycle Costs.

It is recommended that a third, complimentary project be undertaken to study the role of politics, culture, and sociology on local O&M programs. This should be conducted by a five member working group consisting of representatives from local, regional, state, federal and an at large agency or organization with O&M support programs. This effort should be led by the Alaska Native Health Board with assistance from IHS, DEC, EPA and DCRA.

The working group would organize and facilitate a series of regional open forums inviting people to discuss their O&M problems and successes and to discuss what they feel works and why. The forums could be coordinated to coincide with regularly scheduled regional and sub-regional meetings and workshops of organizations that share an interest in the topic. The working group would prepare a summary of information collected and develop a report on what O&M efforts seems to work, where, and why.

Once this project is completed, relevant agencies should review its findings together with the ANHB and ISER reports. O&M assistance efforts should be adjusted or redefined as appropriate.

PROPOSED METHODS FOR IMPLEMENTATION:

Participating agencies/organizations would be requested to dedicate 10 percent of one employees time for a one year period to the workgroup. Agency assistance to pay for the travel expenses for the local and at-large members may be needed.

TARGET DATES AND MEASURES:

O&M Workgroup formed.

Target Date: October, 1997

Participating Agencies/Organizations agree to dedicate 10 percent of one employees time for one year to the Workgroup.

Target Date: November, 1997

Workgroup organizes and facilitates a series of regional open forums to discuss operation and maintenance issues.

Target Date: December, 1997 - October, 1998

Workgroup completes and distributes a summary of information collected during regional forums and develops a report on what O&M assistance efforts work best where and why.

Target Date: December, 1998.

Relevant agencies review the report together with the ANHB and ISER findings and adjust or redefine their assistance efforts as appropriate.

Target Date: February, 1999.

RECOMMENDATION 4:

Local Governments Should Analyze the Potential of Operation and Maintenance (O&M) Partnerships

The Governor's Council on Rural Sanitation strongly recommends that local governments in rural Alaska consider community partnerships as a means of lowering their O&M costs and improving the delivery of sanitation services.

Economies of scale equate to power in numbers. Due in part to the small population base in most rural communities, the cost per household to operate and maintain sanitation facilities is much higher than in urban areas where these costs are spread over a greater number of households.

By partnering other communities and forming a regional utility group or cooperative, rural residents may be able to tip economies of scale in their favor. Utility costs could be lowered, and a marked improvement in utility operation and management could be realized.

A study conducted several years ago found that regionalization of sanitation operation and maintenance did not appear feasible in the NANA region. However, the study was focused on a single rural area which the Council believes is not necessarily representative of the rest of rural Alaska. Across the rest of the country small rural utilities are successfully joining together to form regional utilities to take advantage of:

- centralized administration, management, and billings;
- shared technical support among local community utilities;
- standardization and sharing of equipment and spare parts; and
- bulk purchases of energy, supplies, and equipment.

Some communities may be reluctant to participate in regionalization if they perceive that there will be a loss of jobs in the community, a rate increase, increased enforcement of billings, or that they will have less of a voice in the operation and management of the regional utility. If the concern is over loss of jobs in the community, the regional utility could retain current operations staff and fill future openings from the local area. If the concern is over control of utility rates, a rate agreement satisfactory to the local community can be negotiated. If concern is over the loss of a voice in the operation and direction of the regional utility, each community could have a position on the governing board of the regional utility.

PROPOSED METHODS FOR IMPLEMENTATION:

Local governments and non-profit regional organizations could work together to determine the viability of O&M community partnerships. The Rural Utility Business Advisor (RUBA) program, if funded at the recommended level (see pages 32-33) could, at the request of three or more communities, assist utilities assess the feasibility, drawbacks and benefits of community O&M partnerships in their area.

TARGET DATES AND MEASURES:

Local governments and non-profit regional organizations work together to determine the viability of regionalization.

Target Date: Ongoing.

RUBAs assist local governments in assessing the feasibility, drawbacks and benefits of regionalization.

Target Date: Ongoing.

COMPONENT IV: FACILITY CONSTRUCTION

THE CHALLENGE:

Approximately 40% of rural Alaska households do not have access to a sanitary means of sewage disposal or an adequate supply of safe drinking water in their homes. In these households, honeybuckets or pit privies are the only methods for disposing of human waste and water must be hand hauled from washeterias, watering points, or untreated sources such as rivers or creeks.

Due to extreme weather conditions, difficult topography and remote locations, installing conventional sanitation utilities in these areas is frequently cost prohibitive both from a capital and operation/maintenance perspective. For this reason, many rural villages are opting for alternative technologies such as the "flush tank and haul system".

Given the size of the needs for rural sanitation capital improvements and the limited State and federal funding available to address these needs, it is absolutely essential that every dollar appropriated be stretched as far as possible. It is vital that we get the "biggest bang" for every buck. With this in mind, the Council recommends that agency priority lists for rural sanitation projects be combined/coordinated; force accounting practices be implemented at communities discretion; and new, less expensive technologies investigated.

COMPONENT IV FACILITY CONSTRUCTION

RECOMMENDED FIVE POINT ACTION PLAN

1. Construct new, adequate sanitation systems for an average of 1,000 rural homes per year and upgrade existing systems as necessary.
2. Wherever possible, at a community's direction, use force account construction for sanitation projects.
3. Combine/coordinate the priority list processes of all State and federal agencies providing sanitation capital funds.
4. Promote the research, development, implementation and testing of appropriate new/alternative technologies.
5. Provide technologies which meet the unique needs/capabilities and environment of each community.

RECOMMENDATION 1:

Construct new adequate¹ sanitation systems for an average of 1,000 rural homes per year and upgrade existing systems as necessary.

Approximately 8,000 households currently lack a sanitary means of sewage disposal or a sufficient and easily accessible supply of drinking water in their homes. In order to meet the health and sanitation needs of these households, it is recommended that adequate systems be constructed for an average of 1,000 homes annually from 1997 to 2005.

The Council recognizes that guaranteeing this level of improvement is outside of the control of sanitation assistance agencies/organizations. The Council firmly believes that the first step in local improvements must be local desire and commitment. Without local involvement, sanitation projects should not commence (see pages 11-24). Likewise, until communities have met agreed upon performance standards and have demonstrated the capacity to operate and maintain sanitation facilities, projects should not be constructed (see page 21). This may slow progress in meeting our goal of eliminating the honeybucket- but it is the only prudent approach to a comprehensive statewide sanitation plan.

It is important that the total focus of on-going sanitation construction efforts is not narrowed solely to eliminating honeybuckets. Many rural communities already have water and sewerage systems in place but need assistance in upgrading their systems or expanding services to new homes in the community.

Percentage Alaska Native village households with adequate water & sewer services



¹Adequate sanitation facilities are defined as systems which deliver water and remove wastewater either through pipes or an enclosed haul method. Homes with adequate sanitation facilities have flush toilets and water faucets.

Additionally, several sanitation systems are nearing the end of their design life and need to be replaced. While these projects may not appear as needed as constructing new systems where none exist, they play an equally important role in protecting public health.

PROPOSED METHODS FOR IMPLEMENTATION:

FUNDING HISTORY

SANITATION PROJECTS IN ALASKA										
STATE FUNDING		FEDERAL FUNDING								STATE/FED. ANNUAL TOTALS
SFY	VSW	FFY	IHS	HUD	EPA	CWA	SDWA	USDA-RD	DOT/PF	
89	\$6,239,043	1989	\$8,290,000	\$3,474,000	\$0	\$0	\$0	\$0	\$0	\$18,003,043
90	\$11,163,865	1990	\$5,300,000	\$4,385,000	\$0	\$6,664,250		\$0	\$0	27,513,115
91	\$6,852,600	1991	\$14,250,000	\$2,392,000	\$0	\$1,700,000		\$0	\$0	25,194,600
92	\$27,157,700	1992	\$16,670,000	\$3,435,000	\$0	\$6,730,200		\$0	\$0	53,992,900
93	\$24,502,600	1993	\$19,233,000	\$3,668,000	\$0	\$3,258,100		\$0	\$1,700,000	80,661,700
94	\$26,732,200	1994	\$12,000,000	\$4,500,000	\$0	\$3,183,000		\$15,000,000	\$1,500,000	61,415,200
95	\$20,788,600	1995	\$12,000,000	\$6,000,000	\$15,000,000	\$3,500,000		\$0	\$8,800,000	57,288,600
96	\$21,373,500	1996	\$11,000,000	\$10,000,000	\$15,000,000	\$2,300,000		\$4,000,000	\$2,900,000	63,673,500
97	\$19,805,400	1997	\$11,300,000	\$2,500,000	\$15,000,000	\$3,400,000		\$7,658,100	\$7,200,000	59,663,500
98	\$23,137,700	1998	*	*	*	*	*	*	\$7,900,000	23,137,700
COLUMN TOTAL	\$187,753,208		\$110,043,000	\$40,354,000	\$45,000,000	\$2,735,550	\$0	\$26,658,100	\$30,000,000	\$470,543,858

* FFY98 FUNDING LEVELS WILL NOT BE IDENTIFIED UNTIL OCTOBER 1, 1997

The State of Alaska should provide a minimum of \$25 million per year for rural sanitation projects. This sum should be matched on a dollar for dollar basis by the Environmental Protection Agency and the Rural Development Administration. Funding through the Public Health Service and HUD should continue at current or increased levels. Funding allocated to Alaska through EPA's Indian Set-Aside programs should increase. Federal highway funding through DOTPF for transportation infrastructure in village sanitation projects needs to be continued.

In order to stretch limited funds, sanitation engineers from the Public Health Service and the Village Safe Water program should continue to assist communities in coordinating the management, planning, designing, and construction of sanitation projects. PHS and VSW engineers provide technical services to villages needed during construction to provide the lowest cost project.

TARGET DATES AND MILESTONES:

Communities actively participate in the planning stage of sanitation improvements and operators/managers gain the necessary training to meet performance standards so that projects may progress to the construction phase.

Target Date: Ongoing

The State and federal governments appropriate recommended funding levels for rural Alaska sanitation construction projects.

Target Date: State - annually each July
Federal - annually each October.

Funding for VSW and PHS engineers continues at current or increased levels.

Target Date: State - annually each July
Federal - annually each October

1,000 rural households per year currently hand hauling water and/or utilizing honeybuckets receive improved sanitation services.

Target Date: Ann u'ly through 2005

Communities needing system upgrades, expansion, or replacement receive necessary assistance.

Target Date: Ongoing

RECOMMENDATION 2:

Wherever possible, at a community's direction, use force account construction for sanitation projects.

Force accounting is defined as the practice of using local administrative and/or labor resources to complete construction projects. The majority of rural sanitation projects in Alaska are constructed using partial force accounting practices (construction is completed by local laborers directed by a contracted construction superintendent). The decision to use force accounting or contracting methods of procurement is a local decision based on local skills and project complexity and timing.

Advantages of constructing sanitation projects by force account include:

- **The community has more involvement and pride of ownership in the project.** Local residents are involved in the planning, design, scheduling, staffing, quality control, and financial control of the project. Construction is performed primarily by community residents. History has shown when residents are actively involved in each step of a project they develop an increased pride of ownership in the completed facilities. This "pride of ownership" enhances operation and maintenance.
- **Engineering Costs are less.** In a force account project, the engineer does not have to produce detailed performance specifications to protect the village from potential problems with a "low bid" contractor. There are also cost savings by eliminating the advertise/bid/award process, and the legal costs sometimes associated with bid protests.
- **The community gets more project for its construction dollar.** Construction costs are estimated to be 35 percent less in a force account project. This is due to several cost saving advantages typically not available through traditional contracting. For example: (a) communities are not required to pay Davis Bacon wages under a force account project; (b) unlike a contractor, the community does not have to make a profit on the project; (c) mobilization and camp costs are eliminated or reduced since local residents are hired to do the work as opposed to outsiders who require housing; (d) other costs typically charged by a contractor are avoided such as contingency costs and performance/ payment bonds; (e) the project owner (the community) is the contractor and thus has no incentive to skimp on quality of construction this eliminates the need for and expense associated with an inspection team.

- **Increases local skills.** There is an enormous opportunity for local residents to learn and improve job skills, and develop supervisory proficiency. Additionally, by assisting with project development and construction, the community utility operator will become uniquely familiar with the "nuts and bolts" of the system and will be better able to operate the completed system and to repair it in the future.
- **Provides local employment.** Through force accounting, most of the money spent on wages stays in the community and bolsters the local economy. In communities with few jobs and little cash economy, force accounting is an important source of income.

It should be noted that in some instances, contracting may be a more viable procurement option depending upon the local work force in a community and the degree of difficulty, specialized nature, or timing of the project.

PROPOSED METHODS FOR IMPLEMENTATION:

There have been attempts in the past to limit community procurement choices to low bid contracting. The Council strongly recommends that the State and local organizations take immediate action to oppose this limitation to local authority. It is vital that local governments retain the flexibility to choose which procurement method fits their individual needs and situation. Additionally, communities targeted for sanitation funding should be given a copy of the Department of Community and Regional Affairs Force Accounting information document and provided up-front assistance to assist them with any questions or concerns they may have regarding procurement methods available for projects.

TARGET DATES AND MILESTONES:

A copy of DCRA's force accounting information document provided to all communities receiving a sanitation planning or construction grant.

Target Date: Ongoing.

Village Safe Water and Public Health Service Engineers, DCRA Local Government Specialists, Rural Utility Business Advisors and other appropriate agency programs assist communities with any questions or concerns communities may have regarding available project procurement methods.

Target Date: Ongoing.

RECOMMENDATION 3:

Combine/Coordinate the priority list processes of all State and federal agencies providing sanitation capital funds.

The Public Health Service (PHS), Environmental Protection Agency (EPA), U. S. Department of Agriculture - Rural Development (USDA-RD), and to a lesser extent the Housing and Urban Development Agency (HUD), and the Department of Transportation and Public Facilities (DOTPF) play a significant role in funding rural Alaska sanitation projects. The State of Alaska, through the Village Safe Water (VSW) program, has worked hard to cooperate and coordinate funding efforts with these state and federal agencies. By combining/coordinating funding and priority list processes, agencies have maximized the benefits of limited funds and ensured that duplication of effort is avoided. Additionally, this partnership approach has enabled many projects to go forward that would not have otherwise. For example, EPA operates a program that provides grants only for wastewater projects. Most wastewater systems can not be constructed without a water system in place. Agencies participating in the shared priority list process have provided the necessary funding for water projects to compliment the EPA wastewater grants. Similarly, the total funds necessary to complete a project may not be available through a single agency. In such cases, funding from another agency may be used to make up the shortfall.

Rural participation must be built into State and Federal decision making processes for prioritizing sanitation projects. Criteria used for establishing each year's priority list for the funding projects should be reviewed by rural representatives (the Rural Alaska Sanitation Coalition is suggested as a review committee) and their recommendations considered in determining project scores.

The Council is concerned that although EPA has effectively combined and coordinated its priority list process for rural Alaska sanitation grants with relevant State and federal agencies, it may not do so through its new Indian Set-Aside program for drinking water projects. The Council strongly urges EPA to build upon the successes it has achieved to date through cooperative prioritization to date and to continue this process through its new program.

PROPOSED METHODS FOR IMPLEMENTATION:

All state and federal agencies contributing grant funding for rural Alaska sanitation projects should continue to combine/coordinate their priority list processes. If any agency veers away from this successful partnership effort, Congressional assistance may be necessary.

Although EPA is only in the planning phase of its new drinking water Indian Set-Aside grant program, it is believed that its headquarters office will give its regional offices the latitude to determine how grant funding is allocated and distributed. Region 10 should be encouraged to follow procedures established under the wastewater Indian Set-Aside program for prioritizing the projects it funds in Alaska through the drinking water Indian Set-Aside program.

TARGET DATES AND MILESTONES:

IHS/HUD, USDA-RD, EPA, DOTPF, DOE and VSW continue to combine/coordinate their priority list processes.

Target Date: Ongoing

Region 10 agrees to allocate drinking water Indian Set-Aside grants using existing combined/coordinated priority list processes for projects in Alaska.

Target Date: October, 1997

Continued federal and State appropriations require that coordinated priority list development be maintained as a condition of program funding.

Target Date: As needed

RECOMMENDATION 4:

Promote the research, development, implementation, and testing of appropriate new/alternative sanitation technologies.

A process for assessing, documenting, and standardizing the review, approval, and optimal application of non-traditional sanitation technologies is needed. This process should consist of two phases:

Phase I: For each type of technology, combinations of technologies, or portions of technologies an evaluation and analysis of: a) the conditions under which it will or will not work; b) its health impacts; c) its operational requirements; and d) its estimated life-cycle cost.

Phase II: Pilot test an approach through which communities themselves define what is the most appropriate sanitation technology for their community and residents take greater control of the sanitation technology decision making process. Local involvement is key to this phase as residents would take on the role of clients controlling projects as opposed to simply "grant recipients". Phase II would consist of two to three pilot projects through which State and federal agencies work with rural communities to better enable local residents to make decisions regarding what type of technology best meets their needs (see Component I - Local Involvement, Recommendation 2, page 15).

This process proposes:

- Creation of a set of "modularized" systems (which consist of alternative technologies, combinations of technologies, or portions of technologies) and how they can fit together in an optimal manner.
- Creation and demonstration of a new regulatory approach to the application of existing technologies from an inventory of modularized systems.
- Creation of a new regulatory approach that will provide for the identification, examination and conceptual approval of alternative and innovative systems which exist now or become available through this or other efforts.

- Direct and pro-active village participation, and the conscious development of "client skills" within rural communities and their leadership.

PROPOSED METHOD FOR IMPLEMENTATION:

The Alaska Village Initiatives (AVI) Inc. has submitted a grant proposal to the Alaska Science and Technology Foundation to "pilot" test this recommendation. The Council endorses the AVI proposal and encourages ASTF to sponsor it.

TARGET DATES AND MILESTONES:

DEC establishes a joint technical oversight panel including, but not limited to representatives from DEC, IHS, the Alaska Native Science Foundation and AVI to look at optimal methods for reviewing, assessing, and qualifying appropriate rural sanitation technologies.

Target Date: August, 1997.

ASTF approves grant award to AVI.

Target Date: October, 1997

AVI implements pilot project:

Target Date: June, 1998

AVI submits a final report of its findings and test results to all relevant parties:

Target Date: November, 2000

RECOMMENDATION 5:

Provide technologies which meet the unique needs/capabilities and environment of each community

Piped systems are not always the best solution to rural sanitation problems. Examples of other options include flush tank haul systems, large and small truck haul systems, and septic systems, to name a few. It must ultimately be up to each community to determine the type of system that best meets its needs, environment, and financial/technical abilities. This is one of the reasons why it is important that recommendations listed under the local involvement and responsibility component (pages 11-24) of this strategy be achieved. Selecting the most appropriate sanitation technology can be a difficult task for rural communities who might, for example, desire full piped service but lack the financial capability to operate and maintain such a facility.

Communities should be provided with technical assistance in understanding and considering the following variables when determining which type of technology best meets their needs:

Geotechnical

Availability of a year-round water services
Permafrost conditions
Groundwater Table
Susceptibility of area to flooding
Temperature ranges
Annual Precipitation, Snow Accumulation
Soil conditions, stability, depth of bedrock

Demographic

Current and projected population
Housing density, growth patterns, planned upgrades
Housing types, compatibility with proposed systems
Availability of skilled personnel for local O&M
Health education levels within the community
Health status and epidemiological history
Type of roads in the community
Local availability of building materials/equipment

Sociocultural

Community knowledge/perception of alternatives.
Village potential/readiness

Economics

Capital funding viability
O&M potential/readiness

PROPOSED METHODS FOR IMPLEMENTATION:

During the planning phase of each project, Rural Utility Business Advisors should assist communities in defining how much they can afford to pay in

utility bills and which type of technologies fit their financial capabilities. Likewise, project engineers should assist communities in understanding the technology options available to them given local environmental conditions. Together, RUBAs and project engineers should help communities fully understand the skill levels and training requirements associated with each system alternative.

Dividing sanitation grants into planning and construction phases will help ensure that the time necessary for communities to completely understand and weigh and balance system options is available to them prior to the time they make a decision on a system type. As a first step, the comprehensive community sanitation planning manual described on pages 15-16 should be produced and distributed so that communities have a generic understanding of the costs, pros and cons, and technical requirements associated with each type of existing sanitation technology.

TARGET DATES AND MILESTONES:

All sanitation grants divided into planning and construction phases to allow adequate time for community residents to evaluate system options available to them and analyze which system best meets their needs and capabilities.

Target Date: July, 1998

Local residents actively participate in project planning and system selection.

Target Date: Ongoing.

DCRA produces and distributes a comprehensive community sanitation planning manual which includes a description of available sanitation technologies and a generic description of the operation and maintenance costs and skill requirements associated with each system type.

Target Date: April 30, 1998

Engineers, RUBAs, RMWs and other appropriate assistance providers work with communities to assist them in the planning phase of their sanitation improvements.

Target Date: Ongoing.

COMPONENT V: REGULATORY FLEXIBILITY AND PROBLEM REGULATIONS

THE CHALLENGE:

There are a myriad of federal and State regulations which specify requirements for designing, constructing, operating and maintaining sanitation systems. Often, these regulations make little sense for small rural systems or anywhere else for that matter. The negative effects of these requirements are various. They may constrain design engineers, slow construction, and frustrate all ready over-burdened rural staff - often with no practical benefit.

COMPONENT V

REGULATORY FLEXIBILITY AND PROBLEM REGULATIONS

RECOMMENDED FIVE POINT ACTION PLAN

1. Develop and distribute a plain English regulatory guidebook tailored to rural Alaska.
2. Ensure that regulations do not unnecessarily hamper the progress of improving rural sanitation conditions.
3. Focus on results such as public health improvements rather than process.
4. Relax regulations and permitting standards to allow for alternative/innovative rural sanitation technologies.
5. Explore the feasibility of issuing a single community permit for rural water, sewer, and solid waste facilities.

RECOMMENDATION 1.

Develop and distribute a plain English regulatory guidebook tailored to rural Alaska.

The complexity and number of regulations associated with sanitation facilities make it almost impossible for small rural utilities with limited staff to track and meet State and federal requirements. Further, the limited scientific, technical, and professional capacity of many utilities makes understanding and adhering to sanitation related requirements difficult, especially if they are not written in user-friendly language. A guidebook listing environmental regulations applicable to small rural sanitation systems and compliance deadlines associated with each should be produced and distributed to all rural communities. The guidebook or manual should be written so that it can be used by lay persons. Once completed, the guidebook would be used as a tool to assist utilities in understanding and adhering to pertinent requirements. The guidebook should be updated regularly to reflect any regulatory changes.

PROPOSED METHODS FOR IMPLEMENTATION:

The Department of Community and Regional Affairs, with cooperation from DEC and EPA, should research, develop, produce, and widely distribute the "plain English" Regulations guidebook.

TARGET DATES AND MILESTONES:

Specifications for the guidebook developed

Target Date: October, 1997

Professional Services contract awarded for the research into applicable regulations.

Target Date: November, 1997

DCRA publication specialist and consultant work together to ensure that the document is readable and appropriate for rural Alaska.

Target Date: November, 1997 - May, 1998.

Guidebook completed and distributed.

Target Date: July, 1998

RECOMMENDATION 2:

Ensure that regulations do not unnecessarily hamper the progress of improving rural sanitation conditions.

Federal regulations are often written for the "average" community in the United States. Rural Alaska communities are typically very different from this "average". The majority are detached from road systems, have populations of less than 500, have very limited cash economies, and have few technological resources. They frequently have very limited staffs to accomplish the administrative and regulatory tasks that are performed by many specialized employees in larger communities. Likewise, regulations are often written with larger communities in mind. They may be developed by individuals who think of Anchorage, Juneau, or Fairbanks as the norm and who may lack a complete understanding of rural villages. Such regulations often place small rural Alaska communities in a difficult, if not impossible, situation.

Examples of sanitation related "problem regulations" include:

- requiring monitoring of drinking water for pesticides in communities where pesticides have never been used;
- requiring liners on the bottom of landfills in areas of heavy rainfall where liners over the top of a landfill are more appropriate;
- implementing lead and copper water regulations in communities which have an all plastic system and only a handful of customers have copper pipes with lead solder;
- regulations which hinder the introduction of new, innovative sanitation technologies; and
- Statutes (i.e. Title 29) which prohibit communities from joining together to solve environmental issues and dictate tax ceilings (even if a higher tax is approved by a community's voters) thereby limiting the ability for communities to financially provide for operation of sanitation systems.

State and federal environmental regulations relating to sanitation facilities need to be reviewed for their applicability to rural Alaska settings. Where such regulations make little sense, solutions need to be sought. This may mean revising existing regulations, amending statutes, or providing mechanisms for waivers.

PROPOSED METHODS FOR IMPLEMENTATION:

A work group composed of interested stakeholders should be convened and charged with identification of specific regulations and statutes which hinder the progress of rural sanitation efforts or are inappropriate or overburdensome in the rural Alaska setting. Once problem regulations/statutes are identified the group should submit its findings and recommendations to the Governor's Office and State and federal agencies charged with enforcing the regulations. The workgroup, relevant agencies, and the Department of Law should then work together to rectify problems identified and redraft regulations and statutes to ensure they promote - not impede - rural Alaska sanitation improvement efforts.

TARGET DATES AND MILESTONES:

Relevant agencies sign an MOU agreeing to devote the staff time necessary to participate on the workgroup.

Target Date: October, 1997

Workgroup initiates work to identify specific "problem" regulations/statutes.

Target Date: November, 1997

Workgroup issues report which details its finding, identifies problem regulations/statutes and offers recommendations.

Target Date: March, 1998

Workgroup, relevant agencies, and the Department of Law initiate efforts to rectify problems and redraft regulations/statutes as necessary.

Target Date: June, 1998

Requested statute changes submitted to the State legislature.

Target Date: January, 1999

RECOMMENDATION 3.

Focus on results such as public health improvements rather than process.

The goal of flexibility in regulation implementation is not to violate the intent or goal of environmental regulations but to improve a community's ability to comply and protect its environment and the health of its residents. This recommendation differs from the previous one in that its focus is on changing the way regulations and requirements are implemented/enforced as opposed to written.

Often the reason utilities are deemed out of compliance with sanitation regulations is simply because they have not followed a dictated process for meeting the goals of the regulation. Achievement of overall environmental results should take precedence over how a result is achieved. Often innovative solutions are the best answer to sanitation problems in rural Alaska. On a case-by-case basis, utilities should be allowed to deviate from traditional processes and choose what is least costly and most effective for them while still protecting their environment and public health.

Additionally, communities often feel that they do not receive credit or recognition for the steps they take toward reaching compliance with regulations. Government agencies should work with local governments to develop mutually accepted agreements which outline compliance issues that the community needs to address (prioritized by the community) and steps the community plans to take to reach regulatory goals. Regulatory agencies then need to give recognition to each positive step communities take in solving their compliance issues.

PROPOSED METHODS FOR IMPLEMENTATION:

The staff of regulatory agencies need to be instructed to assist and work with rural communities in developing creative methods to meet the intent/goal of regulations. Their primary emphasis needs to be on "compliance assistance" as opposed to "enforcement". This will require allowing staff to consider the unique nature of the communities with which they are dealing and the latitude to exercise a degree of flexibility in their interpretation of regulations and requirements. The focus of sanitation regulatory implementation must be on

results rather than how the results were obtained. The internal policies of regulatory agencies should be revised if necessary to reflect this philosophy. Staff who may have previously simply "followed the book" in regulatory and enforcement matters may need to be retrained in methods of problem solving and working with communities to find viable solutions to compliance issues.

TARGET DATES AND MILESTONES:

Agency directives issued giving field staff latitude to work with communities to seek creative solutions to address the goals of regulations/requirements.

Target Date: October, 1997

Internal policies of relevant enforcement agencies revised, if necessary, to focus on results rather than process when dealing with rural communities on sanitation related issues.

Target Date: December, 1997

Staff training in problem solving and methods for working with communities to find viable solutions to compliance issues.

Target Date: January, 1998 and annually thereafter.

Reactivate the community agreement process.

Target Date: October, 1997.

RECOMMENDATION 4.

Relax regulations and permitting standards to allow for alternative/innovative rural sanitation technologies.

Existing water, wastewater, and solid waste regulations may hinder the introduction of new or innovative technologies which could have a significant benefit to the quality of life in rural Alaska. Often regulations do not make allowances for alternative or novel ways to address rural sanitation deficiencies.

The regulations which control many solution oriented activities used by planners and engineers seldom make specific reference to the use of alternative technologies or make allowances for meeting the intent of regulations in an innovative or progressive way. Examples of issues relating to sanitation technologies which frustrate planners and regulatory agency staff include:

- Often there is little flexibility for regulatory staff to consider local or extenuating conditions. Usually, regulatory compliance is prescribed by technical design, conventional methods, or best available technologies (BAT), rather than by performance characteristics or ability to meet reasonable objectives with available resources.
- Regulations frequently do not differentiate between various uses of water and types of wastewater. For example, there is no provision for the disposal of grey water (dishwater, bathwater, etc) as opposed to black water (sewage). Nor are there different standards for the treatment of utility (non-drinking water) as opposed to drinking water.
- Regulations often specify solutions for statewide application irrespective of local or regional circumstances. Most often, these methodologies are specified in State regulations having been adopted from conventional technology acceptable in other areas of the United States, but not necessarily applicable in Alaska. For example, a local solution for wastewater disposal and treatment, such as a tundra pond, may be an appropriate means of treatment in contrast to use of a conventional lagoon, which is most often specified as the regulatory solution.

Careful, thoughtful, and innovative application of new and existing technology, guided by regulations which enable agency staff to exercise its considerable expertise on a site-by-site basis, will result in immediate improvement in delivery and effectiveness.

The introduction of new technologies should be accomplished *based on results* through a process of preliminary screening, pilot scale design testing, field demonstration, and performance evaluation based on *results* rather than design.

PROPOSED METHODS FOR IMPLEMENTATION:

The Department of Environmental Conservation should convene a workgroup composed of interested stakeholders to: (1) identify barriers which hinder the introduction of non-standard rural water and wastewater systems and recommend corresponding solutions; (2) propose new regulatory language which facilitates the introduction of new technologies, methodologies, and systems; and (3) propose recommendations to consolidate design reviews and other related regulatory functions within a single division/group.

TARGET DATES AND MILESTONES:

Alternative Technology regulatory workgroup convened.

Target Date: October, 1997

Workgroup issues report which includes the identification of barriers to the introduction of "non-standard" sanitation technologies and recommendations for corresponding solutions including regulatory language changes.

Target Date: February, 1998

Workgroup issues recommendations concerning the consolidation of design reviews and other related rural sanitation regulatory functions within a single group.

Target Date: March, 1998

RECOMMENDATION 5.

Explore the feasibility of issuing a single community permit for rural water, sewer, and solid waste facilities.

Small, rural communities often operate all sanitation infrastructure with each sanitation facilities requiring its own permits from both State and federal regulatory agencies setting forth numerous requirements and stipulations and having varying expiration dates. The complexity of obtaining a variety of permits and keeping them current exceeds the financial capacity and staffing available to most small rural communities. As a result, facilities are often operated without valid permits and facility operations often suffer and fall out of compliance.

PROPOSED METHODS FOR IMPLEMENTATION:

The Department of Environmental Conservation should work with the Environmental Protection Agency and the Division of Governmental Coordination to determine the feasibility of multi-media permits. If such permits seem feasible, the two agencies should identify steps necessary to implement multi-media community permits on a pilot basis. The cost savings, benefits and deterrents realized from the pilot consolidated permit process should be clearly documented.

TARGET DATES AND MILESTONES:

DEC, EPA and DGC determine whether community multi-media permits are feasible.

Target Date: January, 1998

If permits appear feasible, DEC, EPA and DGC identify steps necessary to conduct pilot project(s).

Target Date: February, 1998

If permits appear feasible, DEC, EPA and DGC initiate pilot project(s).

Target Date: March, 1998

COMPONENT VI: BUDGET

THE CHALLENGE:

Since 1960, the State and federal governments have spent over \$800 million to plan, design, and construct sanitation facilities in rural Alaska. As a result, piped water and sewerage facilities are available in over one-half of Alaska's villages. Although much has been done to improve village sanitation conditions, especially over the last several years, much more remains to be done. The Governor's Council on Rural Sanitation estimates that it will cost approximately \$1.108 million per year to provide all rural residents with piped water and a sanitary means of sewage disposal by the year 2005. This estimate approximates similar projections by the U.S. Environmental Protection Agency and the Congressional Office of Technology Assessment.

In order to address this need, the Council recommends the following budget strategy which is further detailed on the next twelve pages: (1) a minimum annual State appropriation of \$25 million and an equal federal match through EPA and USDA; (2) continued funding through HUD, IHS, DOT, and Indian Set-Aside programs (\$26 million); (3) an estimated additional \$10 million per year in funding through HUD, IHS, and the EPA Clean Water and Drinking Water Indian Set-Aside programs if these agencies reevaluate and adjust their methodology for distributing funds to ensure they are based strictly on need; and (4) issuance of \$150 million in State General Obligation bonds to augment existing sanitation construction funding. Taken together these recommendations would result in an estimated \$107 million per year for rural sanitation construction improvements. This closely approximates the \$110 million per year needs estimate identified by the Council.

Construction and technology needs have historically been the focus of State and federal funding efforts. However, the Council firmly believes that equally vital is funding for non-construction needs such as local capacity building, technical assistance, training, education, and operation and maintenance assistance. For this reason, the Council strongly recommends that a minimum of \$2 million in State funding and \$2 million in federal funding be obligated annually for capacity building, technical assistance, training, local involvement and education efforts. Additionally, necessary financial assistance should be made available through the State's Power Cost Equalization program, Revenue Sharing, and Safe Communities (formerly Municipal Assistance) programs to help rural communities afford the operation and management (O&M) costs of sanitation facilities.

COMPONENT VI

BUDGET

RECOMMENDED FIVE POINT ACTION PLAN

1. Provide a minimum of \$25 million per year in State funds to be matched through a combination of federal EPA and USDA-RD appropriations for sanitation construction projects managed through the Village Safe Water program.
2. Ensure that Alaska gets an equitable share based upon its needs, of federal formula funding (i.e. EPA Indian Set-Aside funds and IHS/HUD funding).
3. Issue State General Obligation bonds to augment annual State general fund appropriations for rural sanitation and construction projects.
4. Provide \$2 million per year in State funds and \$2 million per year in federal funds for capacity building (this includes funding for RMWs, RUBAs, operator training and certification, utility management training, and local involvement efforts).
5. Provide stable financial assistance through the State PCE, Revenue Sharing, and Safe Communities programs as recommended in the Operation and Maintenance component of this strategy.

RECOMMENDATION 1.

Provide a minimum of \$25 million per year in State funds to be matched through a combination of federal EPA and USDA-RD appropriations for construction projects.

The Governor's Council on Rural Sanitation estimates that it will cost approximately \$1.108 billion to provide all rural residents with piped water and a sanitary means of sewage disposal by the year 2005.¹ In developing this projection, the needs of the North Slope Borough were excluded since these needs will be paid for through bonds issued by the Borough.

The Council's rural sanitation capital needs projection is based on the following formula:

(Estimated cost for new projects X population growth factor X present worth value) + (replacement costs X present worth value) = \$1.108 billion over a 10 year period.

An explanation of how components of this formula were derived follows:

(1) **New Projects.** Existing needs for new facilities were assessed by combining data from the Indian Health Service's Sanitation Deficiency System (SDS) data base and statistics from the 1990 census.

(a) **Native villages:** The SDS system only contains information and sanitation needs estimates for communities defined as Alaska Native villages in the Alaska Native Claims Settlement Act. The SDS projection for current needs (excluding Native villages in the North Slope Borough) is \$460,000,000 (see Appendix A).

(b) **"Non-Native" rural communities:** Information from the 1990 U.S. census was used to determine existing sanitation levels in the 115 rural communities which are not classified as "Alaska Native villages". Based on historic project costs, the Indian Health Service and the Alaska Department of Environmental Conservation developed multipliers to

¹ Based on 1997 dollar estimates

estimate the cost of providing sanitation systems in rural Alaska. By applying these multipliers to census data for "non-Native" communities, a needs assessment of \$109,606,500 was derived (see Appendix B).

(2) Population Growth Factor. A 2% annual projected population growth factor was adopted by the Council. Several demographic projections were considered in arriving at this estimate: a) revised Department of Labor population growth projections; b) a comparison of rural birth and death rates; and c) the Long-Range Fiscal Planning Commission's statewide population growth projection. In all cases, an attempt was made to back out population data related to larger and urban communities.

(3) Replacement Costs. Between 1976 and 1996, approximately \$500 million was invested in rural sanitation systems. The average design life of a system is 20 years. Over the next ten years an estimated \$250 million in rural water and sewer facilities will reach the end of their design life and will need to be rehabilitated.

(4) Present Worth Value was expressed as an equivalent annual uniform series using a 3% inflation rate for 10 years. This multiplier was applied to the cost estimate for new construction and replacement costs.

The Council realizes that \$50 million per year, even when augmented with approximately \$25 million from existing federal sanitation formula funding programs, will not meet the total estimated \$1.108 billion ten year need for planning, designing and constructing rural Alaska water and sewer improvements. For this reason, Recommendations 2 and 3 on the following pages should also be implemented. Adjusting existing federal funding formulas to distribute funds based solely upon needs would mean an estimated additional \$10 million per year in federal funding (see Recommendation 2 on page 82). Issuance of General Obligation bonds at the level endorsed by the Council would add another \$21.6 million per year (see Recommendation 3 on page 84). If implemented in its entirety, the Council's budget strategy would result in approximately \$107 million per year which closely tracks the estimated annual rural sanitation funding need of \$110 million.

PROPOSED METHODS FOR IMPLEMENTATION:

The Council advocates that full federal funding levels for rural Alaska sanitation efforts authorized under the Safe Drinking Water Act and the Farm Bill be appropriated annually. These acts authorize up to \$15 million each for rural Alaska sanitation improvements. Of these amounts, it is recommended that \$13 million of the \$15 million authorized through the Safe Drinking Water Act and up to \$12 million of the \$15 million authorized through the Farm bill be used for Village Safe Water construction projects. The remaining \$2 million from the Safe Drinking Water Act appropriation should be applied to training, technical assistance, and other capacity building efforts (see Recommendation 2 on page 82). It is advised that Safe Drinking Water Act funding be fully matched dollar for dollar by State funds as required by law. However, given the fiscal realities facing the State, the Council recommends that only \$10-\$12 million of the \$15 million authorized through the farm bill be contingent upon a State match. Federal appropriations which are matched by State funds should be allocated based upon the Village Safe Water annual priority list as is the current practice. Appropriations made through the Farm Bill which are not matched with State funds should be used by the U.S. Department of Agriculture - Rural Development's (USDA-RD) Alaska Office to meet emergency sanitation needs or to fund sanitation related projects which the director deems would alleviate immediate health risks.

TARGET DATES AND MILESTONES:

State capital budget authorization includes up to \$25 million for rural sanitation projects.

Target Date: Annual budget process.

EPA and USDA-RD include recommended funding levels for rural Alaska sanitation construction projects in their annual budget submittal.

Target Date: Annual budget process

If EPA or USDA-RD does not include recommended funding levels for rural Alaska sanitation construction projects in their budget requests, seek assistance from the Alaska Congressional delegation.

Target Date: As necessary

RECOMMENDATION 2:

Ensure that Alaska gets an equitable share based upon its needs of sanitation related federal formula funding.

The Indian Health Service has assisted in improving rural Alaska sanitation conditions for many years. They have been a strong partner and leader in this effort. However, the methodology used to determine how their funding is allocated throughout the U.S. is affected by high unit costs. The methodology used results in a number of projects being considered unfeasible because of high unit cost.

Similar to the Indian Health Service, the Environmental Protection Agency administers formula funding programs for sanitation projects for which Alaska Native Villages are eligible. These programs are the Indian Set-Asides for wastewater and drinking water projects.

The Indian Set-Aside wastewater grant program has been in effect for nearly ten years, the drinking water grant program is new. During the initial years of the wastewater grant program, funding was allocated based upon a competitive application process which primarily considered environmental and health related criteria. Alaska villages scored consistently high under this process and obtained a high percentage of the grant funding made available through the program. Several years ago, however, the method for allocating funds was changed. Alaska's share of the national grants dropped. EPA is now in the process of determining a new allocation mechanism for the wastewater grant program. The Council strongly recommends that Alaska Native villages, regional organizations, and the State work with EPA to ensure that these funds are allocated according to need relating to cost and public health concerns.

Villages, regional organizations, and the State also need to work with EPA to ensure that grants through the new drinking water Indian Set-Aside grant program are allocated based upon need. Under Congressional direction, EPA recently conducted a drinking water needs survey for Indian Tribes and Alaska Native Villages. The survey concluded that Alaska Native villages accounted for over 57 percent of the national drinking water needs for Indian Tribes and Alaska Native villages. However, EPA is considering a number of funding allocation formulas for the drinking water Indian set-aside program which would either disregard or only partially consider the findings of the need

survey. The Council strongly recommends that EPA allocate drinking water Indian Set-Aside grants based upon the Congressionally mandated drinking water needs survey. This is the same method EPA uses for allocating drinking water and wastewater capitalization grants among States.

PROPOSED METHODS FOR IMPLEMENTATION:

Working together, Alaska villages, regional organizations, statewide organizations, the State, and the Congressional delegation should make the Indian Health Service and the Environmental Protection Agency aware of the tremendous sanitation needs of Alaska villages in comparison to the rest of the United States. These groups should press federal agencies to distribute sanitation grant funding based upon health and environmental needs.

The Indian Health Service should be asked to review their current unit cost threshold limits to ensure they accurately reflect the difference between unit costs in the "lower 48" and Alaska.

TARGET DATES AND MILESTONES:

The State should work with IHS and EPA to allocate national funding for sanitation construction grants based upon documented needs and not disregard more expensive but greatly needed projects in their allocation determinations.

Target Date: Ongoing

RECOMMENDATION 3.

Issue State General Obligation bonds to augment annual State general fund appropriations for rural sanitation construction projects.

The Council recommends the legislature authorize a ballot proposition for the issuance of \$150 million of State General Obligation bonds for the installation, replacement, and repair of rural sanitation facilities. Authorization of bonds would provide a stable and predictable annual funding source for village sanitation projects. Currently, State funding for rural water and sewer improvements is determined on an annual basis and is vulnerable to large fluctuations depending upon oil revenues, competing capital projects, and the make-up of the legislature. Although appropriation levels have been fairly consistent over the last few years, funding is always uncertain from one year to the next. The unpredictable nature of annual appropriations makes long term capital improvement planning difficult for local utilities. Likewise, it hampers the development of a systematic, long-term statewide approach to address rural water and sewerage needs. The Council believes State issued General Obligation bonds would address this problem by providing a predictable and stable funding source.

As discussed on page 80, State and federal appropriations fall short of meeting the funding required to address rural sanitation needs statewide. Proceeds from the issuance of State General Obligation bonds would nearly fill this fiscal gap by making an additional \$21.6 million available annually between 1999 and 2005.

An additional benefit of a bond issue for rural water and sewer improvements would be the message sent to federal funding agencies. Federal funding for rural sanitation facilities generally requires a dollar-for-dollar State match. The existence of voter approved bonds would demonstrate a stable long-term source of funding for the required State match. This should better assure the success of our Congressional delegation's efforts to obtain additional federal funding for rural Alaska water and sewer facilities.

The Council further recommends that \$20 million of the \$150 million bond issue be used to capitalize the Alaska Clean Water and Alaska Drinking Water revolving loan funds. These programs offer financial assistance to communities that have the financial capacity to repay low interest loans for water and

wastewater capital projects. \$20 million in proceeds from the bond issue could be used to leverage \$100 million from the federal government over the next several years to capitalize the water and wastewater loan programs.

PROPOSED METHODS FOR IMPLEMENTATION:

Issuing State General Obligation bonds would first require legislative authorization and then voter approval through a statewide ballot measure.

TARGET DATES AND MILESTONES:

Draft bill which would authorize a ballot measure for the issuance of General Obligation bonds for sanitation projects.

Target Date: December, 1997

Introduce legislation authorizing a ballot measure for the issuance of General Obligation bonds for sanitation projects.

Target Date: January, 1998

Ballot measure authorization passed.

Target Date: May, 1998

Relevant organizations work together on a public education campaign to promote the ballot measure.

Target Date: June, 1998

Ballot measure approved or disapproved by Alaska voters.

Target Date: November, 1998

RECOMMENDATION 4.

Provide a minimum of \$2 million per year in State funds and \$2 million per year in federal funds for capacity development efforts.

The Council strongly believes that funding for capacity development efforts such as utility management and operator training and technical assistance is equally as important as capital construction funding. Without trained operators and managers as well as the support of a well organized community, expensive systems will fail. Funding capacity development programs is in effect like buying an insurance policy for the federal and State investment in water and sewer capital projects. Additionally, unless capacity development efforts are funded at an appropriate level, many rural Alaska communities will never qualify for sanitation improvement grants. It simply is not prudent to construct systems in communities which lack the financial, managerial, and technical expertise to properly operate and maintain sanitation systems.

A total of \$4 million per year in State and federal funds should be used to provide the services outlined in Components 1 and 2 of this Action Plan (pages 11-40). These services include regional and community workshops and presentations, operator training and certification, utility management training, technical assistance through the Remote Maintenance Worker and Rural Utility Business Advisor programs and local involvement efforts. Full funding at the recommended levels for components 1 and 2 is essential to the success of the Rural Sanitation 2005 Action Plan.

Further, it should be noted that the recent reauthorization of the Safe Drinking Water Act requires States to create and implement an approved capacity development strategy and operator training program. If a State fails to do so, it will lose a portion of the funding made available to it for community water project loans. In Alaska's case this could mean the loss of up to \$4 million per year in future years in federal capitalization funds for low-interest loans. The Council believes that the State will have an approvable capacity development and operator training program in place if funding is made available to implement components 1 and 2 of this strategy.

PROPOSED METHODS FOR IMPLEMENTATION:

\$2 million from funding authorized for rural and Native Alaska sanitation improvements under the Safe Drinking Water Act should be allocated to implement this recommendation. This will require a \$2 million State match. The services of Village Safe Water, RMW, and RUBA staff should be considered as part of the State matching requirement.

TARGET DATES AND MILESTONES:

DCRA, DEC, EPA and other relevant agencies should include funding for the recommendations outlined in components 1 and 2 of this Action Plan in their operating budget requests.

Target date: Annual budget process

Congress approves federal funding for the recommendations outlined in components 1 and 2.

Target date: Annual budget process

The State Office of Management and Budget approves agency budget requests for capacity building efforts at the recommended funding levels.

Target Date: Annual budget process

The Legislature approves agency budget requests for capacity building efforts at the recommended funding levels.

Target Date: Annual budget process

RECOMMENDATION 5.

Provide stable financial assistance through the State PCE, Revenue Sharing, and Safe Communities² programs.

The important role the Power Cost Equalization (PCE), Revenue Sharing, and Safe Communities play in making on-going sanitation operation and maintenance affordable for rural communities is explained on pages 34-38. Unless adequate funding is made available through these programs, communities may be unable to financially afford to operate sanitation services and expensive systems will have to be shut down. Communities where significant progress has been made in sanitation improvements may have to revert back to hand hauling water and utilizing honeybuckets. A decrease in funding through these programs would not only hamper the progress of the Rural Sanitation 2005 Action Plan, it could completely negate any progress made over the last twenty years in improving rural sanitation conditions.

Unless alternative methods for assisting rural Alaska villages afford the cost of sanitation operation and maintenance is identified, the Council recommends annual funding for these important programs at FY96 levels as follows:

PCE:	\$17.00 million
Revenue Sharing:	\$26.28 million
Safe Communities:	\$31.96 million

PROPOSED METHODS FOR IMPLEMENTATION:

Working together, the Alaska State legislature and the Governor need to ensure adequate annual appropriations through the Revenue Sharing and Safe Communities programs. The Power Cost Equalization capitalization fund either needs to be replenished or its annual earnings/dividends need to be augmented with State general funds.

² Note: The Safe Communities program was previously titled the Municipal Assistance Program.

TARGET DATES AND MILESTONES:

Statewide and regional organizations representing Alaska communities and local governments need to aggressively work to educate the legislature about the importance of the PCE, Revenue Sharing, and Safe Communities programs.

Target Date: Ongoing.

The Governor includes the recommended funding levels in his Operating Budget.

Target Date: Annual budget process

The Legislature approves the recommended funding levels in the State's FY 99 Operating budget.

Target Date: Annual budget process

COMPONENT VII: PARTNERSHIP APPROACH

RURAL SANITATION 2005 ACTION PLAN MEMORANDUM OF UNDERSTANDING

Whereas the sanitation conditions in rural Alaska are in dire need of improvement and such conditions threaten public health, denigrate the environment, and hamper the quality of life of rural residents;

Whereas improving rural sanitation conditions effectively, over the long term requires a comprehensive strategy which incorporates capital funding, local involvement, planning, construction, operation and maintenance, and capacity building;

Whereas the Rural Sanitation 2005 Action Plan provides such a strategy; and

Whereas effectively implementing the Rural Sanitation 2005 Action Strategy requires a partnership approach by State and federal agencies, statewide and regional organizations, local governments and residents;

Therefore, be it resolved that we the undersigned agree to:

Implement the Rural Alaska Sanitation 2005 Action Plan;

Address recommendations outlined in the plan that are targeted to us for implementation;

Increase communication, cooperation, and coordination of resources between all parties active in the plan;

Work together to ensure that Congress and the State legislature are fully apprised of Alaska's rural sanitation needs and the importance of fully funding the activities outlined in the 2005 Action Plan; and

Participate in annual evaluations of the plan's progress and work together to amend and update the plan as necessary.

Signatories:

DEC, EPA, ANHB, IHS, USDA-RD, DCRA, TCC, YKHC, AVCP, SEARHC, BBHC, NNWMA, DOE, DOT, AML, ARECA, others.....

APPENDIX

APPENDIX A
SDS PROJECTIONS FOR CURRENT NEEDS
(ALASKA NATIVE VILLAGES ONLY)

SDS NAME	WATER COST	SEWER COST
AKHIOK - Water & Sewer	\$100,000.00	\$45,000.00
AKIACHAK - Community System	\$540,000.00	\$675,000.00
AKIAK - Water/Sewer Haul	\$360,000.00	\$400,000.00
AKIAK - water tank circ. Main	\$1,370,000.00	\$0.00
AKUTAN Sludge Dspl./ Water Line	\$250,000.00	\$0.00
ALAKANUK - Water & Sewer	\$390,000.00	\$490,000.00
ALAKANUK - Water & Sewer, Piped	\$3,500,000.00	\$4,100,000.00
ALATNA - Haul System	\$250,000.00	\$400,000.00
ALLAKAKET - New Town Washeteria.	\$400,000.00	\$200,000.00
ALLAKAKET - Water & Sewer*	\$2,500,000.00	\$1,500,000.00
ALLAKAKET - Water & Sewer Improve.	\$425,000.00	\$525,000.00
AMBLER - Water & Sewer	\$210,000.00	\$200,000.00
ANGOON - Outfall Rehab/Sewer Ext.	\$0.00	\$300,000.00
ANGOON - Water Storage Tank	\$675,000.00	\$0.00
ANIAK - Individual Water & Sewer	\$60,000.00	\$20,000.00
ANVIK - Lagoon Construction	\$0.00	\$150,000.00
ARCTIC VILLAGE - Water & Sewer	\$1,000,000.00	\$1,000,000.00
ARCTIC VILLAGE - Water & Sewer *	\$1,175,000.00	\$1,363,000.00
ATKA - Sewer upgrade	\$200,000.00	\$0.00
ATMAUTLUAK - Water/Sewer Haul	\$884,000.00	\$1,326,000.00
BEAVER - Washeteria/WTP Upgrade	\$400,000.00	\$0.00
BEAVER - Water & Sewer	\$1,000,000.00	\$1,200,000.00
BETHEL, CITY OF - Water & Sewer*	\$30,150,000.00	\$40,000,000.00
BETHEL, City of - Phase 2	\$900,000.00	\$900,000.00
BETHEL, City of - Phase 3	\$1,400,000.00	\$1,400,000.00
BIRCH CREEK - Water & Sewer*	\$1,715,000.00	\$1,222,000.00
BIRCH CREEK - Water Improvement	\$250,000.00	\$0.00
BREVIK MISSION - HUD	\$768,000.00	\$470,000.00
BREVIK MISSION - Water & Sewer *	\$1,800,000.00	\$1,800,000.00
BREVIK MISSION - Water/Sewer Haul	\$280,000.00	\$5,000,000.00
BUCKLAND - Haul System	\$150,000.00	\$150,000.00
BUCKLAND - New Town Wtr & Swr.	\$408,000.00	\$443,000.00
BUCKLAND - Old Town Water & Sewer	\$805,000.00	\$1,585,000.00
CANTWELL - Scattered Individual	\$68,000.00	\$100,000.00
CHALKYITSIK - Water & Sewer	\$2,450,000.00	\$2,450,000.00
CHALKYITSIK - Water Source/Tmnt	\$600,000.00	\$0.00
CHEFORNAK - Washeteria & Lagoon	\$1,000,000.00	\$500,000.00
CHEFORNAK - Water/Sewer Haul	\$952,000.00	\$1,248,000.00
CHENEGA BAY Water/Sewer	\$100,000.00	\$50,000.00
CHEVAK, Piped Water & Sewer	\$1,200,000.00	\$1,500,000.00
CHIGNIK BAY - Water	\$1,200,000.00	\$0.00

SDS NAME	WATER COST	SEWER COST
CHIGNIK LAGOON - Water & Sewer	\$160,000.00	\$350,000.00
CHIGNIK LAKE - Indiv. Water/WST	\$400,000.00	\$0.00
CHISTOCHINA - Scattered	\$168,000.00	\$100,000.00
CHITINA - Scattered	\$250,000.00	\$200,000.00
CHUATHBALUK - Water/Sewer/S.W.	\$560,000.00	\$1,200,000.00
CIRCLE - Haul System	\$336,000.00	\$420,000.00
CLARK'S POINT - Lagoon Rehab.	\$0.00	\$100,000.00
COPPER CENTER- Scattered	\$68,000.00	\$100,000.00
COPPER VALLEY - Scattered	\$375,000.00	\$300,000.00
COUNCIL - Water & Sewer	\$200,000.00	\$160,000.00
CRAIG - Sewer & Solid Waste	\$0.00	\$200,000.00
CROOKED CREEK - Water & Sewer	\$1,000,000.00	\$1,050,000.00
DEERING - HUD Water & Sewer	\$120,000.00	\$121,000.00
DEERING - Water & Sewer *	\$345,000.00	\$130,000.00
DOT LAKE - Individual Water & Sewer	\$41,500.00	\$73,500.00
EAGLE VILLAGE - Haul System	\$125,000.00	\$125,000.00
EAGLE VILLAGE - Water & Sewer	\$1,100,000.00	\$800,000.00
EEK - Haul System	\$1,144,000.00	\$1,716,000.00
EGEGIK - Water & Sewer	\$180,000.00	\$90,000.00
EKLUTNA - Individual Water/Sewer	\$90,000.00	\$60,000.00
ELIM - Solid Waste/Sludge Disposal	\$0.00	\$200,000.00
ELIM - Water Source	\$100,000.00	\$0.00
ENGLISH BAY - Water Tank/SWTR	\$1,100,000.00	\$0.00
EVANSVILLE - Individual Water & Sewer	\$180,000.00	\$200,000.00
FALSE PASS - Water/Sewer System	\$400,000.00	\$340,000.00
FORT YUKON - Water & Sewer	\$150,000.00	\$250,000.00
FORT YUKON - Water & Sewer	\$350,000.00	\$6,000,000.00
GAKONA - Scattered	\$68,000.00	\$100,000.00
GALENA - Water & Sewer	\$180,000.00	\$220,000.00
GAMBELL - Water & Sewer*	\$2,500,000.00	\$2,400,000.00
GOLOVIN - HUD*	\$645,000.00	\$380,000.00
GOLOVIN - Water & Sewer	\$260,000.00	\$260,000.00
GOLOVIN - Water & Sewer*	\$1,552,500.00	\$1,668,000.00
GOODNEWS BAY - Water & Sewer	\$2,404,000.00	\$1,810,000.00
GOODNEWS BAY - Water Source/Drill	\$170,000.00	\$0.00
GRAYLING - Water Tank/Sewer/Solid Waste	\$354,000.00	\$66,000.00
HOLY CROSS - Ghost Creek Subdiv.	\$100,000.00	\$50,000.00
HOLY CROSS - Solid Waste/Water	\$125,000.00	\$0.00
HOONAH - O&M Upgrades	\$0.00	\$0.00
HOONAH - Water Treatment	\$1,100,000.00	\$0.00
HOOPER BAY - Water/Sewer Haul	\$3,938,000.00	\$2,907,000.00
HUGHES - Water & Sewer	\$495,000.00	\$825,000.00
HUSLIA - Water Main Upgrade	\$683,000.00	\$0.00
HUSLIA - Water/Treatment Upgrade	\$1,102,800.00	\$0.00
IVANOF BAY - Solid Waste/Water	\$100,000.00	\$0.00

SDS NAME	WATER COST	SEWER COST
KAKE - Solid Waste/O&M	\$0.00	\$60,000.00
KAKE - Water Source/Transmission Line	\$4,000,000.00	\$0.00
KALTAG - Solid Waste & Source	\$20,000.00	\$0.00
KALTAG - Water & Sewer	\$125,000.00	\$146,000.00
KARLUK - Solid Waste/Water	\$200,000.00	\$0.00
KASIGLUK - Water Tank/Lagoon	\$5,000,000.00	\$400,000.00
KASIGLUK - Water/Sewer Haul System	\$1,064,000.00	\$1,596,000.00
KING COVE - Water	\$700,000.00	\$0.00
KING COVE - Water Storage	\$1,400,000.00	\$0.00
KIPNUK - Haul System	\$1,360,000.00	\$2,540,000.00
KIPNUK - Water Source/Haul Improvements	\$600,000.00	\$100,000.00
KIPNUK - WTP/Washeteria Completion	\$300,000.00	\$100,000.00
KIVALINA - HUD*	\$500,000.00	\$250,000.00
KIVALINA - Water & Sewer	\$4,600,000.00	\$900,000.00
KIVALINA - Water/Sewer/SW/O&M	\$500,000.00	\$200,000.00
KLAWOCK - Sewer Upgrade	\$0.00	\$320,000.00
KLAWOCK - Water & S.W.T.R.	\$800,000.00	\$0.00
KLUKWAN - Water Treatment	\$200,000.00	\$0.00
KOBUK - Circ. Water & Sewer	\$402,000.00	\$466,000.00
KOBUK - HUD*	\$200,000.00	\$200,000.00
KOKHANOK - HUD indiv. Water/sewer	\$100,000.00	\$100,000.00
KONGIGANAK - Water & Sewer	\$4,300,000.00	\$1,700,000.00
KOTLIK - Haul System	\$1,382,000.00	\$2,073,000.00
KOTLIK - Water Storage/Lagoon	\$546,000.00	\$700,000.00
KOTZEBUE - Native Service W&S	\$1,360,000.00	\$1,360,000.00
KOTZEBUE - Sewer Improvements	\$0.00	\$652,000.00
KOTZEBUE - Water Supply Improvements	\$180,000.00	\$20,000.00
KOYUKUK - Water & Sewer	\$500,000.00	\$600,000.00
KWETHLUK - Comm. Piped Water/Sewer	\$4,464,000.00	\$4,476,000.00
KWIGILLINGOK - Haul System	\$926,000.00	\$1,389,000.00
KWIGILLINGOK - Water Source	\$330,000.00	\$400,000.00
LARSEN BAY - Water Plant /S.W.	\$647,000.00	\$0.00
LIME VILLAGE - Washeteria/Privy	\$150,000.00	\$60,000.00
LIME VILLAGE - Water & Sewer	\$275,000.00	\$165,000.00
LITTLE DIOMEDE - Water & Sewer	\$940,000.00	\$790,000.00
LITTLE DIOMEDE - Water & Sewer *	\$4,455,000.00	\$800,000.00
LOWER KALSKAG - Water & Sewer	\$400,000.00	\$367,000.00
MANLEY HOT SPRINGS - Water & Sewer	\$370,000.00	\$525,000.00
MANOKOTAK - Water & Sewer	\$900,000.00	\$0.00
MARSHALL - Sewer& Solid Waste	\$0.00	\$400,000.00
McGRATH - Sewer	\$0.00	\$500,000.00
McGRATH - Sewer	\$0.00	\$1,450,000.00
MEKORYUK - Water/Sewer Haul System	\$940,000.00	\$1,410,000.00
MEKORYUK - Water and Sewer *	\$4,400,000.00	\$3,600,000.00
MENTASTA LAKE - Water & Sewer	\$900,000.00	\$1,100,000.00

SDS NAME	WATER COST	SEWER COST
METLAKATLA (ANNETTE) Water /O&M	\$700,000.00	\$0.00
METLAKATLA - Sewer	\$0.00	\$300,000.00
MINTO - Water & Sewer	\$325,000.00	\$100,000.00
MOUNTAIN VILLAGE - Water & Sewer	\$467,000.00	\$676,000.00
NAPAKIAK - Water/Sewer Haul System	\$1,880,000.00	\$1,480,000.00
NAPASKAK - Water/Sewer Haul	\$1,396,000.00	\$2,940,000.00
NENANA - Water & Sewer	\$550,000.00	\$638,000.00
NEW STUYAHOK - Water & O&M	\$300,000.00	\$0.00
NEWTOK - Water/Sewer Haul System	\$934,000.00	\$1,401,000.00
NEWTOK - Water/Sewer/S. Waste	\$1,000,000.00	\$625,000.00
NIGHTMUTE - Water/Sewer/S.W.	\$250,000.00	\$300,000.00
NIGHTMUTE - Water/Sewer Haul System	\$572,000.00	\$858,000.00
NIKOLSKI - Water	\$260,000.00	\$0.00
NOME - Water & Sewer	\$250,000.00	\$250,000.00
NOORVIK - Water & Sewer	\$532,000.00	\$533,000.00
NULATO - Water & Sewer	\$540,000.00	\$675,000.00
NUNAPITCHUK - Haul System	\$1,056,000.00	\$1,584,000.00
NUNAPITCHUK - Water & Sewer *	\$4,900,000.00	\$5,400,000.00
NUNAPITCHUK - Water Tank/Sewer Haul	\$400,000.00	\$580,000.00
OLD HARBOR - Water Treatment/O&M	\$200,000.00	\$50,000.00
OSCARVILLE - Water/Sewer Haul	\$260,000.00	\$520,000.00
PILOT STATION Water & Sewer	\$840,000.00	\$310,000.00
PILOT STATION - WTP/System Upgrade	\$650,000.00	\$250,000.00
PITKAS POINT - Storage/WTP/Wash.	\$1,200,000.00	\$900,000.00
PITKAS POINT - Water & Sewer	\$616,000.00	\$616,000.00
PLATINUM - Water & Sewer	\$200,000.00	\$600,000.00
POINT LAY - Piped Utilities*	\$10,200,000.00	\$15,500,000.00
POINT LAY - Truck Haul Utilities*	\$495,000.00	\$1,000,000.00
PORT GRAHAM - Water (SWTR)	\$200,000.00	\$0.00
PORT HEIDEN - Water & Sewer	\$125,000.00	\$125,000.00
PORT LIONS - Water/S.W. /O&M	\$400,000.00	\$0.00
PORTAGE CREEK - Water Pt./Privy	\$80,000.00	\$6,000.00
QUINHAGAK - Haul System	\$1,280,000.00	\$1,920,000.00
QUINHAGAK - Water & Sewer	\$405,000.00	\$405,000.00
QUINHAGAK - Water & Sewer	\$500,000.00	\$600,000.00
RAMPART - Piped Water & Sewer	\$1,600,000.00	\$1,300,000.00
RAMPART - WTP/Washeteria	\$330,000.00	\$400,000.00
RED DEVIL - Water/Sewer/S.W.	\$400,000.00	\$350,000.00
RUBY - Water & Sewer *	\$2,285,000.00	\$2,635,000.00
RUSSIAN MISSION - WTP/S.W.	\$350,000.00	\$0.00
SAINT PAUL - Ocean Outfall	\$0.00	\$250,000.00
SAINT PAUL - Water & Sewer	\$100,000.00	\$200,000.00
SAND POINT - Solid Waste/Water	\$90,000.00	\$0.00
SAVOONGA - Sewer & Water	\$230,000.00	\$500,000.00
SAVOONGA - Water & Sewer Piped	\$1,323,000.00	\$1,436,000.00

SDS NAME	WATER COST	SEWER COST
SAVOONGA - Water & Sewer- Piped	\$1,323,000.00	\$2,117,000.00
SAVOONGA - Water Source & Sewer	\$200,000.00	\$1,000,000.00
SAVOONGA - Water Storage/Source	\$800,000.00	\$0.00
SAXMAN - Water Treatment /Storage	\$1,200,000.00	\$0.00
SCAMMON BAY - Water & Sewer	\$400,000.00	\$250,000.00
SELAWIK - Water and Sewer	\$510,000.00	\$563,000.00
SELAWIK *	\$956,000.00	\$943,000.00
SELAWIK*	\$357,000.00	\$357,000.00
SELAWIK*	\$1,212,000.00	\$1,212,000.00
SELDOVIA - Water Source/Trtmt.	\$400,000.00	\$60,000.00
SHAGELUK - Water & Sewer Piped	\$2,190,000.00	\$3,050,000.00
SHAKTOOLIK - Water Improvements	\$450,000.00	\$0.00
SHELDON POINT - WTP/Fuel/Dozer	\$225,000.00	\$150,000.00
SHELDON POINT - Water/Sewer Haul	\$1,235,000.00	\$1,235,000.00
SHISHMAREF - Service Connections	\$1,900,000.00	\$6,300,000.00
SHISHMAREF - Water Treatment	\$2,600,000.00	\$0.00
SHISHMAREF - Water/SewerHaul	\$300,000.00	\$300,000.00
SLEETMUTE - Water & Sewer Indiv.	\$195,000.00	\$400,000.00
SAINT MARY'S - Solid Waste/Water/Sewer	\$70,000.00	\$70,000.00
SAINT MICHAEL - Piped Utilities*	\$8,335,000.00	\$876,000.00
SAINT MICHAEL - Water Storage	\$1,000,000.00	\$0.00
SAINT GEORGE - Water & Sewer	\$0.00	\$250,000.00
STEBBINS - Haul System	\$585,000.00	\$585,000.00
STEBBINS - Haul System	\$572,000.00	\$572,000.00
STEBBINS - HUD Homes	\$400,000.00	\$200,000.00
STEBBINS - Sewer	\$0.00	\$1,728,000.00
STEBBINS - Sewer, Part II	\$0.00	\$1,288,276.00
STEBBINS - Solid Waste/HB Pond	\$0.00	\$200,000.00
STEBBINS - Water Treat/Mains	\$8,027,444.00	\$0.00
STEVENS VILLAGE - Haul System	\$240,000.00	\$300,000.00
STONY RIVER - Indiv. Water/Sewer/Solid	\$250,000.00	\$380,000.00
TAKOTNA - Water & Sewer	\$30,000.00	\$37,500.00
TANACROSS - water & sewer & SW	\$248,000.00	\$307,500.00
TANANA - Water & Sewer	\$1,800,000.00	\$2,000,000.00
TANANA - Water & Sewer	\$1,800,000.00	\$2,250,000.00
TATITLEK - Water Tank/ S.W	\$300,000.00	\$0.00
TAZLINA - Scattered	\$250,000.00	\$300,000.00
TELIDA - Water & Sewer	\$50,000.00	\$125,000.00
TELLER - Haul System	\$300,000.00	\$400,000.00
TELLER - HUD*	\$600,000.00	\$900,000.00
TELLER - Water & Sewer	\$4,000,000.00	\$2,000,000.00
TETLIN - Piped Utilities	\$1,500,000.00	\$1,100,000.00
TETLIN - Washeteria Upgrade	\$100,000.00	\$200,000.00
TOKSOOK BAY - Water Source	\$612,000.00	\$115,000.00
TOKSOOK BAY - Water System Upgrades	\$344,000.00	\$67,000.00

SDS NAME	WATER COST	SEWER COST
TULUKSAK - Indiv. Water & Sewer	\$1,080,000.00	\$795,000.00
TUNTUTULIAK - Water & Sewer	\$3,096,000.00	\$3,384,000.00
TUNTUTULIAK - Water/Sewer/SW	\$427,000.00	\$640,000.00
TUNUNAK - Water/Sewer Haul System	\$1,515,000.00	\$1,765,000.00
TWIN HILLS - Solid Waste/Water	\$146,000.00	\$24,000.00
TYONEK - Solid Waste, Water	\$200,000.00	\$0.00
UGASHIK - Water/Solid Waste	\$161,000.00	\$0.00
UNALAKLEET - Transmission Line*	\$3,500,000.00	\$0.00
UNALAKLEET - Water Source	\$600,000.00	\$60,000.00
UNALASKA - WTP	\$400,000.00	\$0.00
UPPER KALSKAG - Indiv. Water/Sewer	\$240,000.00	\$300,000.00
VENETIE - Water & Sewer	\$4,000,000.00	\$3,000,000.00
WALES - Haul System	\$500,000.00	\$280,000.00
WALES - Haul System II	\$500,000.00	\$500,000.00
WALES - HUD*	\$500,000.00	\$400,000.00
WALES - Water/Sewer Haul System	\$2,600,000.00	\$950,000.00
YAKUTAT - Sewer Plant/Sludge Pit	<u>\$0.00</u>	<u>\$600,000.00</u>
	\$240,701,244.00	\$220,198,776.00

\$460,900,020.00

APPENDIX B **Estimated Costs for Non SDS Rural Communities**

COMMUNITY	TOTAL POP. (100%)	TOTAL HOUSE HOLDS	AVE. POP. PER HOUSE HOLD	% SEWER "OTHER MEANS"	#HOUSE- HOLDS SEWER = OTHER MEAN	\$ MULTIPLIER PER HOUSE- HOLD	ESTIMATED IMPROVEMENT COSTS*
Anchor Point CDP	866	267	3.24	0.20	53.40	\$15,000	\$801,000
Anderson City	628	145	4.33	0.02	2.90	\$15,000	\$43,500
Annette CDP	43	13	3.31	0.00	0.00	\$15,000	\$0
Bettles City	36	22	1.64	0.12	2.64	\$15,000	\$39,600
Big Delta CDP	400	130	3.08	0.15	19.50	\$15,000	\$292,500
Central CDP	52	27	1.93	0.74	19.98	\$35,000	\$699,300
Chase CDP	38	19	2.00	0.67	12.73	\$35,000	\$445,550
Chikaloon CDP	145	38	3.82	0.26	9.88	\$15,000	\$148,200
Circle Hot Springs Station	29	16	1.81	0.97	15.52	\$100,000	\$1,552,000
Clam Gulch CDP	79	43	1.84	0.55	23.65	\$35,000	\$827,750
Coffman Cove, City	186	71	2.62	0.08	5.68	\$15,000	\$85,200
Cohoe CDP	508	201	2.53	0.40	80.40	\$15,000	\$1,206,000
Cold Bay, City	148	66	2.24	0.08	5.28	\$15,000	\$79,200
Cooper Landing, CDP	243	108	2.25	0.37	39.96	\$15,000	\$599,400
Coperville CDP	163	57	2.86	0.67	38.19	\$35,000	\$1,336,650
Crown Point CDP	62	28	2.21	0.44	12.32	\$15,000	\$184,800
Delta Junction City	652	243	2.68	0.05	12.15	\$15,000	\$182,250
Dry Creek, CDP	106	27	3.93	1.00	27.00	\$100,000	\$2,700,000
Eagle City	168	64	2.63	0.79	50.56	\$100,000	\$5,056,000
Ekwok, City	77	28	2.75	0.05	1.40	\$15,000	\$21,000
Elfin Cove, CDP	57	17	3.35	0.93	15.81	\$100,000	\$1,581,000
Emmonak, City	642	156	4.12	0.44	68.64	\$15,000	\$1,029,600
Ester, CDP	147	72	2.04	0.12	8.64	\$15,000	\$129,600
Eyak CDP	172	50	3.44	0.12	6.00	\$15,000	\$90,000
Fox CDP	275	96	2.86	0.20	19.20	\$15,000	\$288,000
Fox River CDP	382	75	5.09	0.29	21.75	\$15,000	\$326,250
Fritz Creek CDP	1,426	482	2.95	0.34	163.88	\$15,000	\$2,458,200
Game Creek CDP	61	14	4.36	0.87	12.18	\$100,000	\$1,218,000
Gustavus CDP	258	92	2.80	0.40	36.80	\$15,000	\$552,000
Halibut Cove CDP	78	28	2.79	0.49	13.72	\$15,000	\$205,800
Happy Valley CDP	309	107	2.89	0.37	39.59	\$15,000	\$593,850
Harding Lake CDP	27	16	1.69	0.66	10.56	\$35,000	\$369,600
Healy CDP	487	156	3.12	0.28	43.68	\$15,000	\$655,200
Healy Lake CDP	47	15	3.13	1.00	15.00	\$100,000	\$1,500,000
Hobart Bay CDP	187	59	3.17	0.14	8.26	\$15,000	\$123,900
Hollis CDP	111	44	2.52	0.81	35.64	\$100,000	\$3,564,000
Hope CDP	166	86	1.87	0.74	63.64	\$100,000	\$6,364,000

COMMUNITY	TOTAL POP. (100%)	TOTAL HOUSE HOLDS	AVE. POP. PER HOUSE HOLD	% SEWER "OTHER MEANS"	#HOUSE- HOLDS SEWER = OTHER MEAN	\$ MULTIPLIER PER HOUSE- HOLD	ESTIMATED IMPROVEMENT COSTS*
Houston, City	697	250	2.79	0.35	87.50	\$15,000	\$1,312,500
Hydaburg, City	384	129	2.98	0.04	5.16	\$15,000	\$77,400
Hyder CDP	99	51	1.94	0.19	9.69	\$15,000	\$145,350
Igiugig CDP	33	6	5.50	0.67	4.02	\$35,000	\$140,700
Iliamna CDP	94	20	4.70	0.15	3.00	\$15,000	\$45,000
Kachemak, City	365	148	2.47	0.19	28.12	\$15,000	\$421,800
Kalifornsky CDP	285	116	2.46	0.00	0.00	\$15,000	\$0
Kasaan City	54	24	2.25	0.07	1.68	\$15,000	\$25,200
Kasilof CDP	383	131	2.92	0.09	11.79	\$15,000	\$176,850
Kenny Lake CDP	423	148	2.86	0.53	78.44	\$35,000	\$2,745,400
Kiana, City	385	93	4.14	0.46	42.78	\$15,000	\$641,700
King Salmon CDP	696	171	4.07	0.04	6.84	\$15,000	\$102,600
Knik CDP	272	104	2.62	0.29	30.16	\$15,000	\$452,400
Koliganek CDP	181	53	3.42	0.31	16.43	\$15,000	\$246,450
Koyuk City	231	62	3.73	0.96	59.52	\$100,000	\$5,952,000
Labouchere Bay CDP	149	43	3.47	0.07	3.01	\$15,000	\$45,150
Lake Minchumina CDP	32	15	2.13	0.76	11.34	\$100,000	\$1,134,000
Lazy Mountain CDP	838	288	2.91	0.12	34.56	\$15,000	\$518,400
Levelock CDP	105	43	2.44	0.24	10.32	\$15,000	\$154,800
Lignite CDP	99	41	2.41	0.64	26.24	\$35,000	\$918,400
Long Island CDP	198	44	4.50	0.00	0.00	\$15,000	\$0
Lutak CDP	45	13	3.46	0.30	3.90	\$15,000	\$58,500
McCarthy CDP	25	12	2.08	0.92	11.04	\$100,000	\$1,104,000
McKinley Park CDP	171	87	1.97	0.55	47.85	\$35,000	\$1,674,750
Manokotak City	385	92	4.18	0.07	6.44	\$15,000	\$96,600
Mendeltna CDP	37	14	2.64	0.58	8.12	\$35,000	\$284,200
Meyers Chuck CDP	37	12	3.08	0.18	2.16	\$15,000	\$32,400
Moose Creek CDP	610	238	2.56	0.00	0.00	\$15,000	\$0
Moose Pass CDP	81	15	5.40	0.24	3.60	\$15,000	\$54,000
Mosquito Lake CDP	80	23	3.48	0.48	11.04	\$15,000	\$165,600
Naknek CDP	575	206	2.79	0.06	12.36	\$15,000	\$185,400

COMMUNITY	TOTAL POP. (100%)	TOTAL HOUSE HOLDS	AVE. POP. PER HOUSE HOLD	% SEWER "OTHER MEANS"	#HOUSE- HOLDS SEWER = OTHER MEAN	\$ MULTIPLIER PER HOUSE- HOLD	ESTIMATED IMPROVEMENT COSTS*
Naukati Bay CDP	93	42	2.21	0.23	9.66	\$15,000	\$144,900
Nelson Lagoon CDP	83	32	2.59	0.07	2.24	\$15,000	\$33,600
Newhalen City	160	42	3.81	0.05	2.10	\$15,000	\$31,500
Nikiski CDP	2,743	899	3.05	0.11	98.89	\$15,000	\$1,483,350
Nikolaevsk CDP	371	92	4.03	0.12	11.04	\$15,000	\$165,600
Nikolai City	109	40	2.73	0.76	30.40	\$100,000	\$3,040,000
Ninilchik CDP	456	189	2.41	0.31	58.59	\$15,000	\$878,850
Noatak CDP	333	75	4.44	1.00	75.00	\$100,000	\$7,500,000
Nondalton City	178	57	3.02	0.09	5.13	\$15,000	\$76,950
North Pole City	1,456	561	2.60	0.06	33.66	\$15,000	\$504,900
Northway CDP	123	33	3.73	0.64	21.12	\$35,000	\$739,200
Northway Junction CDP	88	21	4.19	0.38	7.98	\$15,000	\$119,700
Northway Village CDP	113	36	3.14	1.00	36.00	\$100,000	\$3,600,000
Ouzinkie City	209	77	2.71	0.03	2.31	\$15,000	\$34,650
Paxson CDP	30	10	3.00	0.35	3.50	\$15,000	\$52,500
Pedro Bay CDP	42	11	3.82	.034	3.74	\$15,000	\$56,100
Pelican City	222	76	2.92	0.23	17.48	\$15,000	\$262,200
Perryville CDP	108	26	4.15	0.09	2.34	\$15,000	\$35,100
Pilot Point Cdp	53	17	3.12	0.72	12.24	\$35,000	\$428,400
Pleasant Valley CDP	401	101	3.97	0.07	7.07	\$15,000	\$106,050
Point Baker CDP	39	25	1.56	0.94	23.50	\$100,000	\$2,350,000
Polk Inlet CDP	135	30	4.50	0.35	10.50	\$15,000	\$157,500
Port Alexander, City	119	35	3.40	0.79	27.65	\$100,000	\$2,765,000
Port Alice CDP	30	6	5.00	0.59	3.54	\$35,000	\$123,900
Port Alsworth CDP	55	18	3.06	0.43	7.74	\$15,000	\$116,100
Port Protection CDP	62	28	2.21	0.90	25.20	\$100,000	\$2,520,000
Primrose CDP	63	30	2.10	0.34	10.20	\$15,000	\$153,000
St. Johns Harbor CDP	69	22	3.14	0.25	5.50	\$15,000	\$82,500
Salamatof Cdp	999	243	4.11	0.02	4.86	\$15,000	\$72,900
Salcha CDP	354	114	3.11	0.45	51.30	\$15,000	\$769,500
Shungnak City	223	58	3.84	0.36	20.88	\$15,000	\$313,200

COMMUNITY	TOTAL POP. (100%)	TOTAL HOUSE HOLDS	AVE. POP. PER HOUSE HOLD	% SEWER "OTHER MEANS"	#HOUSE- HOLDS SEWER = OTHER MEAN	\$ MULTIPLIER PER HOUSE- HOLD	ESTIMATED IMPROVEMENT COSTS*
Skagway City	692	306	2.26	0.10	30.60	\$15,000	\$459,000
Skwentna CDP	85	50	1.70	0.97	48.50	\$100,000	\$4,850,000
Slana Cdp	63	23	2.74	0.62	14.26	\$35,000	\$499,100
South Naknek CDP	136	38	3.58	0.37	14.06	\$15,000	\$210,900
Sutton CDP	308	83	3.71	0.17	14.11	\$15,000	\$211,650
Talkeetna CDP	250	127	1.97	0.43	54.61	\$15,000	\$819,150
Tenakee Springs, City	94	49	1.92	0.98	48.02	\$100,000	\$4,802,000
Thorne Bay, City	569	192	2.96	0.25	48.00	\$15,000	\$720,000
Togiak, City	613	154	3.98	0.40	61.60	\$15,000	\$924,000
Tok CDP	935	370	2.53	0.40	148.00	\$15,000	\$2,220,000
Tonsina Cdp	38	4	9.50	0.00	0.00	\$15,000	\$0
Trapper Creek CDP	296	100	2.96	0.63	63.00	\$35,000	\$2,205,000
Two Rivers CDP	453	154	2.94	0.19	29.26	\$15,000	\$438,900
Whale Pass Cdp	75	19	3.95	0.64	12.16	\$35,000	\$425,600
White Mountain, City	174	53	3.28	0.91	48.23	\$100,000	\$4,823,000
Whittier, City	243	108	2.25	0.04	4.32	\$15,000	\$64,800
Willow CDP	285	84	3.39	0.42	35.28	\$15,000	\$529,200
Womens Bay, CDP	620	237	2.62	0.12	28.44	\$15,000	\$426,000
TOTALS	32,953	11,067	2.98	0.26	3.25		\$109,606,500

*Estimated multipliers = $\leq 50\%$ served by "other means" = \$15,000 per household
51% - 75% served by "other means" = \$35,000 per household
75% - 100% served by "other means" = \$100,000 per household

"other means" = non-piped

Glossary of Acronyms

AML	Alaska Municipal League
ANHB	Alaska Native Health Board
ARECA	Alaska Rural Electric Cooperative Association
ASTF	Alaska Science and Technology Foundation
AVI	Alaska Village Initiatives
AW/WMA	Alaska Water /Wastewater Management Association
BAT	Best Available Technologies
DCRA	Department of Community and Regional Affairs (State)
DEC	Department of Environmental Conservation (State)
DGC	Department of Governmental Coordination (State)
DOE	Department of Education (State)
DOL	Department of Law (State)
DOT	Department of Transportation (State)
DOT/PF	Department of Transportation/Public Facilities (State)
EPA	Environmental Protection Agency (federal)
FFY	Federal Fiscal Year (October 1 - September 30)
G.O. bonds	General Obligation bonds
HUD	Housing and Urban Development (federal)
IHS	Indian Health Service (federal)
ISER	Institute of Social and Economic Research
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NRWA	National Rural Water Association
OMB	Office of Management and Budget (State)
O&M	Operation and Maintenance
PCE	Power Cost Equalization
RMW	Remote Maintenance Worker
RUBA	Rural Utility Business Advisor
SDWA	Safe Drinking Water Act
SFY	State Fiscal Year (July 1 - June 30)
UAS	University of Alaska Southeast
VSW	Village Safe Water

ANCHORAGE WATER UTILITY 1998-2003 CAPITAL IMPROVEMENT BUDGET FINANCIAL SUMMARY

(\$\$ x 1000)

PROJECT CATEGORY	1998	1999	2000	2001	2002	2003	TOTAL
GENERAL PLANT	3,360	4,225	2,654	2,713	4,624	11,669	29,245
REPAIR & REHABILITATION	1,610	1,800	1,300	1,300	1,300	1,300	8,610
TRANSMISSION/DISTRIBUTION	10,350	10,000	6,400	20,100	4,400	3,700	54,950
WELL, TANK, PRV	800	4,800	800	600	650	300	7,950
IMPROVEMENT DISTRICTS	0	250	250	250	250	250	1,250
TOTAL	16,120	21,075	11,404	24,963	11,224	17,219	102,005

SOURCE OF FUNDING	1998	1999	2000	2001	2002	2003	TOTAL
DEBT	14,917	19,699	10,334	23,318	9,504	15,729	93,501
EQUITY	1,203	1,376	1,070	1,645	1,720	1,490	8,504
STATE GRANT	0	0	0	0	0	0	0
TOTAL	16,120	21,075	11,404	24,963	11,224	17,219	102,005

*Approximately \$.7 million of in-house labor will be spent on capital projects in 1998

ANCHORAGE WASTEWATER UTILITY 1998-2003 CAPITAL IMPROVEMENT BUDGET FINANCIAL SUMMARY

(\$\$ x 1000)

PROJECT CATEGORY	1998	1999	2000	2001	2002	2003	TOTAL
GENERAL PLANT	4,945	3,905	3,814	2,598	2,259	6,709	24,230
REPAIR & REHABILITATION	1,345	3,410	4,180	4,500	8,300	1,700	23,435
TRUNK/INTERCEPTOR	1,100	100	325	100	100	4,460	6,185
IMPROVEMENT DISTRICTS	0	250	250	250	250	250	1,250
TOTAL	7,390	7,665	8,569	7,448	10,909	13,119	55,100

SOURCE OF FUNDING	1998	1999	2000	2001	2002	2003	TOTAL
DEBT	5,877	6,484	7,514	6,168	9,504	11,639	47,186
EQUITY	1,513	1,181	1,055	1,280	1,405	1,480	7,914
STATE GRANT	0	0	0	0	0	0	0
TOTAL	7,390	7,665	8,569	7,448	10,909	13,119	55,100

*Approximately \$.3 million of in-house labor will be spent on capital projects in 1998

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ELEMENTARY
EAST SIDE Middle School
ANCHORAGE Port System

SNOW + WATER
WATER LINE heading South

ANCHORAGE Jail
fy

Call Tim Rogers

JAIL
500,000 - 99
200,000 - 2000
15,000,000 - 2001

70%

Mark Premeo
WATER + Sewer
99
2000
2001
2001
- 14 ~~th~~ work water

35
17,500
17,500
5000

400,000