ALASKA LEGISLATURE COMMITTEE FILES 1993-1994 8672

8242 SENATE COMMUNITY & REGIONAL AFFAIRS

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I have enclosed a briefing packet which includes the recommendations of the Alaska Sanitation Task Force, as well as additional background materials relating to this critical issue. Also enclosed is my response to Mr. Douglas Mac Arthur's suggestion that we consider the use of Net Operating Losses (NOLs) or other tax incentives to help deal with this issue.

I look forward to working with you on this cooperative effort.

With best regards.

Sincerely,

Walter J. Hickel
Governor

Enclosures

cc: Senator Frank Murkowski
Representative Don Young
John A. Sandor, Commissioner, DEC
John Katz, Governor's Office, D.C.

- Hepatitis A is a viral infection causing nausea, vomiting, abdominal pain, and (for some patients) jaundice (or yellowing of the skin or eyes). Nearly all persons recover without any complications. Infection results in life-long immunity and unlike hepatitis B, there are no hepatitis A carriers or long-term health risks. It is most often spread from person-to-person by the fecal-oral route. There is no specific treatment.

- Hepatitis A has occurred cyclically in Alaska (and the United States) for many years. In Alaska, very large increases (epidemics) in the number of hepatitis A cases occur every 10-15 years – the most recent epidemics were in 1974-77 and 1986-89. Nearly 2,000 cases of acute hepatitis A were recorded during the 1986-89 epidemic, the *actual* number of hepatitis A cases is larger since many children with hepatitis A are not sick enough to need medical attention.

- In October 1992, hepatitis A began occurring in the Kotzebue region. As of January 26, 1993 cases have been identified in Selawik (36 cases), Buckland (5 cases), Kotzebue (1 case), and Shungnak (1 case). As is in the past, the *actual* number of cases is larger. Most of the cases are among children, there are only a few adults affected with the oldest being 32 years of age. One death, a 14-year-old boy, has occurred. This unfortunate event was not completely unexpected, deaths from hepatitis A occur at a rate of about 5 deaths per 1,000 cases.

- Immune globulin (IG) shots are used to try to stop the spread of hepatitis A. However, these shots have not been able to stop outbreaks in Alaska.

- Efforts are now underway to attempt to make a newly developed hepatitis A vaccine available to persons living in the villages affected by the current outbreak. Because vaccine licensure is pending in the United States (it is already licensed in six European countries) before vaccine can be used, special approval must be obtained from the U.S. Food and Drug Administration, as well as the vaccine manufacturer, local and regional health corporations, and a scientific and ethical review board.

- The Section of Epidemiology is working with the Alaska Area Native Health Service and the U.S. Centers for Disease Control and Prevention to coordinate a hepatitis A vaccination program. The program plan has been discussed with Paul Hansen, Health Administrator, Maniilaq Association. For additional details contact Dr. Michael Beller, Section of Epidemiology, Division of Public Health.

Federal Programs Turn Focus to Southern Colonias, While the Needs of the Nation's most Northern Native Communities Go Unanswered.

No roads, remote locations, severe temperatures, and the lack of water and sewer facilities are breeding a human health and safety crisis in Alaska Native Villages. Permafrost and sub-zero temperatures further complicate the situation. 63% of these communities lack sewage facilities and flush toilets - 60% lack water plumbing. Villagers have to dump raw sewage from buckets and haul water by hand - often in sub-zero weather. The following comparison with an article reprinted here from EPA's latest Journal points out the similarities between the problems in the American Southwest Colonias and Alaska Native Villages in the nation's far north.

The federal government has committed to a billion dollar plan to address the problems in colonias. The magnitude of the problems in Alaska Native Villages warrants a similar federal commitment.

THE U.S. COLONIAS: A TARGET FOR AID

Border Shantytowns Are Separate But Unequal

by Jack Lewis

Welcome to the Weslaco colonia in Hidalgo County, Texas, 30 miles upriver from Brownsville, a city of 125,000 people, and an equal distance down the Rio Grande from McAllen, a town of 100,000. Weslaco itself has a population of 25,000 within its city limits, which currently exclude the 2,500 Hispanic Americans who live mostly without urban amenities in a fairly typical "colonia"-a Spanish term for a neighborhood or community on the outskirts of town.

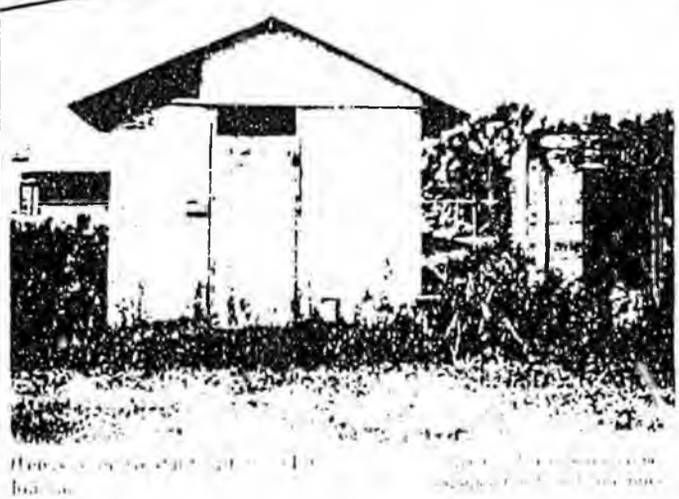
Seventy percent of the colonia inhabitants live without access to any utility-neither fresh water nor sewage hookups, neither gas nor electric power-and their community (largely flat without drainage infrastructure) has unpaved roads that flood frequently, swamping outhouses, cesspools, and primitive septic tanks. Houses are self-built shelters constructed of scrap lumber and other shoddy supplies, and though tiny, they are home to large families of mostly Spanish-speaking farm workers, who face seasonal unemployment rates as high as 20 percent and unnaturally high incidences of dysentery and hepatitis A.

Texas now has laws to prevent new colonias from cropping up, but the existing ones-created by unscrupulous land developers-are still an eyesore and a burden on the conscience of Texas and the nation. For decades these unincorporated rural slums near the Rio Grande have provided substandard housing to tens of thousands of people, most of whom are U.S. citizens whose families have been in this country for generations. Offering no paved roads, little safe drinking water, few sewer or power lines, no fire protection facilities, and only a few community services, these unplanned, unhealthy shantytowns exist today in a shadowland far removed from mainstream America.

Colonias residents have always been too poor to take the initiative on the problems just listed, and the counties in which they live have also been too poor-or too prejudiced-to care. Nearby cities have been all too willing to wash their hands of colonias problems, saying, "They fall outside our jurisdiction." Finally, at long last, state government has intervened in a big way, and so has the federal government.

On February 25,1992, EPA released a comprehensive plan for the cleanup of pollution along the entire U.S.-Mexico border that will involve an expenditure of well over $1 billion over the next several years by the United States, Mexico, the border states, and private industry. The federal government's share in fiscal year 1993 will be approximately $241 million, of which $75 million has been earmarked for drinking water and sewage disposal improvements in the Texas and New Mexico colonias. EPA will administer $50 million for sewage treatment improvements in these colonias, while the U.S. Department of Agriculture's Rural Development Administration devotes $25 million to improving water supply infrastructure.

Commenting on EPA's task in the colonias, EPA Administrator William K. Reilly said, "I don't think there are higher risks to health anywhere in the United States than in these unsewered communities .... The health of thousands of people is at risk in the colonias due to the absence of environmental safeguards that most Americans take for granted. We intend to correct this."



Most of Alaska's 210 Native Villages lack roads, sewers, piped water, and other basic services. Water is hauled from spigots or drawn from creeks or rivers and sewage is dumped from hand held buckets into ponds, creeks, rivers or on the ground directly outside of homes.

On average, per capita income in native villages is $8,883 and 30% of residents live below the national poverty level.

Sixty-three percent of Alaska Native villages lack flush toilets-sixty percent lack fresh water hookups. In these villages, 100% of the residents live without water hook-ups or flush toilets.

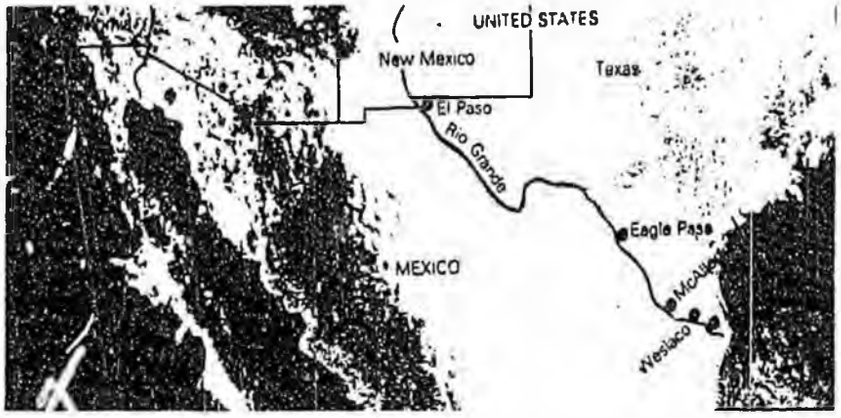
An Interagency Task Force has been formed to develop a comprehensive plan for solving the dire sanitation needs of Alaska's villages. Though the federal government has participated in developing Task Force recommendations, federal funding has not been earmarked to implement the plan.

Incidences of Hepatitis A are not only unaturally high in Alaska's 210 Native Villages, the disease is endemic. Dysentary is so commonplace it is rarely reported.

Over the last twenty years, EPA has awarded a total of $16 million to assist Native Villages address sewage problems. The grant program ended last year.

This is a commendable commitment. A parallel effort is warranted to solve the sanitation problems in Alaska Native Villages.

Steps at EPA



Addressing the water and sewer needs of rural villages is a priority of the State of Alaska. Since 1989, Alaska has spent over $130 million in this effort. Unfortunately, due to declining State revenues, it may be difficult to sustain this level of commitment.

November of 1989, Texas voters permitted the Economically Distressed Areas Program to fund its operations by issuing $100 million in bonds for construction, acquisition, or improvements to water supplies, and/or wastewater collection/treatment works, including all necessary engineering work but not maintenance or ongoing expenses. In 1991, Texas amplified that bond issue fund by $150 million, creating a total pool of $250 million for water works in the Texas colonias.

Another resource that should be mentioned here is the $15 million EPA put into a Colonia Plumbing Loan Program back in 1990; the first applicants for these internal plumbing and house hook-up loans are now awaiting the ruling of the Texas Water Development Board, which will also manage whatever colonias millions Congress appropriates in the fall. (New Mexico's colonias effort is dwarfed by that of Texas; from 1972 to 1990, the state's Environment Department gave out only $12 million in grants and loans for drinking water and wastewater work in the New Mexico colonias.)

There is no such funding plan in the works for Alaska Native Villages, rather, the third world living conditions and dire water and sewer needs of these communities continue to be ignored by Congress and federal agencies.

Discouragingly, some experts have estimated that extending sewage treatment to all Texas colonias residents would cost at least $500 million, while further improvements in the drinking water supply would cost $250 million. In other words, total resolution of the problem, in its present scale, is still beyond our grasp. Part of the rationale for tackling it gradually is that local institutions do not yet exist in most of the 918 colonias housing 215,000 Hispanic farm workers in sixteen Texas and New Mexico border counties. Until local governments fomm or local water utilities show more initiative to handle sewage treatment, it will be difficult to "micro-manage" large construction projects.

Federal and State agencies have estimated the cost of providing acceptable sanitation facilities to all Alaska villages to be $1.2 - $1.3 billion.

Significantly, Lull, Texas—the first colonia to receive construction money from the state's Economically Distressed Areas Program account—was recently annexed by an adjacent city, Edinburg, Texas. In August 1991, the Texas Water Development Board and the Edinburg City Council approved the use of a $565,000 loan and an $885,000 grant to finance water improvements and construction of a wastewater system for the Lull colonia. Lull is a Hispanic community in Hidalgo County with nearly 1,300 inhabitants nll U.S. citizens in good standing—and a history dating back to the 1920s.

In Lull, as throughout the U.S. colonias, few current citizens now have access to sewage treatment, except in the fomm of archaic, overcrowded, overworked septic tanks, while roughly 80 percent have some kind of amateur fresh-water hookup, for cooking and bathing, but not necessarily for drinking and not necessarily within the home itself. The dwelling can range in quality from a handsome stucco house with several bedrooms to a broken-down hovel built from cinder blocks, tin sheets, scrap lumber, plastic, and cardboard. Most residents use outhouse privies that flood every time rains inundate the undrained, muddy streets and fields of the colonias, where children and animals are frequently seen playing the same day.

Some colonias residents- all of whom own cars or trucks, and many of whom own their own land and dwellings—drive as much as 30 miles to buy bottles of fresh drinking water. The poorest of the poor, however, drink directly from outdoor taps or from the wells feeding those taps, and the ground water that comes from these sources is contaminated with fecal coliform as a result of the repeated sewage floods. Outbreaks of dysentery and hepatitis A are commonplace in the colonias, even though in the rest of the United States these severe water borne afflictions are considered Third World diseases.

Some 16 other colonia-related water and wastewater projects are now in the Texas Water Development Board pipeline, which will grow wider and wealthier in the fall. Six applicants with completed facility plans have, like Lull, recently been awarded cash. These projects include Socorro in El Paso County ($1.6 million); Cameron Park in Cameron County ($6.4 million); Granjeno and Madero in Hidalgo County ($2.89 million); areas outside Eagle Pass in Maverick County ($11 million); Westway in El Paso County ($100,000); Sebastian and Lasara in Willacy County ($3 million). The Hacienda Gardens colonia in Cameron County has a completed facility plan that is now being evaluated, while five other counties are now preparing their engineering facility plans.

Raw sewage pitched from honeybuckets, overflowing sewage bunkers, and uncovered sewage pits filled with human waste pose an immediate threat to the health of village residents. The residents of most Alaska Native Villages lead a traditional subsistence lifestyle. Subsistence activities such as cleaning of fish and gutting of game often take place in close proximity to unconfined wastes-providing a perfect catalyst for fecal/oral/foodborne disease transmission. Unlined sewage pits allow liquid wastes to leach into the groundwater in communities where shallow wells provide the community's drinking water. Children play in close proximity to wastes and can easily trip and fall into sewage pits which scatter village sites. In some villages, honeybucket wastes are pitched onto the banks of the same river from which residents obtain untreated drinking water.

Not just the poorest of the poor, but the entire population of 60% of Alaska's 210 Native Villages must haul their water. 30% of these villages offer residents a single washeteria from which they may obtain water; 20 percent service residents with one to several centrally located spigots from which they haul water; and in 10% residents are forced to carry water or ice from shallow wells, streams, or creeks. Due to the lack of adequate sewerage systems, fecal coliform contamination of drinking water sources occurs frequently.

EPA has estimated the sewerage needs alone of Alaska Native Villages to exceed $495 million (in 1989 dollars). If water supply projects were added to this estimate, it would more than double the costs.

In 63% of Alaska Native Villages, the entire population is forced to use a bucket as a toilet or an outhouse as a restroom, while 60% do not have any type of fresh water hook-up into homes. Many of the insufficient number of homes built by HUD each year in these 210 villages are designed to limit homeowners to using honeybuckets (a pail placed in the home as a toilet) or outhouse privies.

COMPREHENSIVE STRATEGY FOR IMPROVING SANITATION CONDITIONS IN RURAL ALASKA
- OVERVIEW -

PROPOSED REQUEST FOR FEDERAL ASSISTANCE	RECOMMENDED STATE PARALLEL EFFORT
Environmental Protection Agency.	
• Earmark up to $25 million per year for rural Alaska sanitation projects through the Indian Set-Aside program to match State funding on dollar for dollar basis. Up to five percent of each appropriation should be earmarked to fund the training and support necessary to ensure the proper community planning, operation, maintenance and management of rural sanitation facilities.	• Appropriate a minimum of $22 million per year in the capital budget through the Village Safe Water program. • Expand DCRA's Rural Utility Business Management program so that every rural community that needs and desires this type of assistance has access to it. • Increase operator training opportunities in rural Alaska.
• Include an amendment in the Reauthorization of the Clean Water Act to increase funding under the national Indian Set-Aside program from one half of one percent to one percent of funds allotted to State Revolving Loan Fund programs.	• Dedicate a small percentage of each CIP rural sanitation grant to operator and utility management training. This is a separate effort from the Rural Utility Business Advisor and RMW programs. It would fund classroom training in rural "hub" communities and correspondence courses.
• Include an amendment in the Reauthorization of the Clean Water Act to expand eligibility under the federal State Revolving Loan fund program to include drinking water projects and allow States the discretion to set a portion of their federal capitalization grants aside for a small community/economically distressed community sanitation grant program.	
Department of Transportation.	
• $10 million per year through an on-going special program to plan, design and construct utility roads in rural Alaska.	• Dedicate a minimum of $3.2 million per year in ISTEA funding to utility road projects in rural communities.

PROPOSED REQUEST FOR FEDERAL ASSISTANCE	RECOMMENDED STATE PARALLEL EFFORT
Housing and Urban Development.	
• Institute a design policy standard that HUD homes built in rural Alaska include, at a minimum, provisions for a flush toilet and and a 200 gallon water storage tank within the envelop of the house. The increased cost per home for implementing this long overdue design standard should not be absorbed by the limited funds currently allocated to rural Alaska housing.	• Research, develop and field test alternative sanitation technologies which show promise in arctic conditions. Conduct seminars with private and public design engineers to introduce and explain innovative technologies. Increase community awareness, acceptance and understanding of proven alternative technologies.
Public Health Service.	
• Stabilize annual facility design and construction funding levels.	• Stabilize the Power Cost Equalization program funding at the FY 92 level.
• Appropriate funding to the program specified in the Indian Health Care Act which authorizes the Indian Health Service to partially subsidize the operation and maintenance costs of IHS water and sewer facilities in Alaska Native Villages and Indian Reservations.	• Expand the Remote Maintenance Worker program.
	• Appropriate funds for local government specialists to review books, analyze utility costs and determine the extent to which rural communities are financing their sanitation utilities with revenues other than user fees.
Bureau of Indian Affairs.	
• BIA's Housing Improvements Program shall be used to support sanitation improvement to existing homes. A percent of each annual appropriation made through this program should be earmarked specifically for rural Alaska housing improvements.	• Investigate the possibilities of private sector assistance in improving housing/sanitation conditions in rural Alaska.

PROPOSED REQUEST FOR FEDERAL ASSISTANCE	RECOMMENDED STATE PARALLEL EFFORT
Department of Labor.	
• Appropriate funds through the Native American Employment and Training program authorized under the Job Training Partnership Act to institute a rural government management and administration certificate program. Funds could be used either to institute a training center in two-three rural "hub" communities or to develop a program within the University of Alaska. A scholarship program for rural residents will be essential.	• Launch a program through the University of Alaska Anchorage College of Career and Vocational Education to provide formalized education to community administrators, community managers, and utility operators. Define the job skills needed by these professionals and develop curriculum focus accordingly.
American Conservation and Youth Corps.	
• Under the existing ACTION program, set-aside funding to establish full-time and summer youth corps programs in rural villages. Under the programs, village youths (ages 16-25) would work to assist in resolving the sanitation problems in their community and at the same time learn technical skills. Participants would receive a small salary, training and education, and post-service education and training benefits (such as scholarships) for each year of service.	• Design hands-on training that is sensitive to cultural differences and provides practice oriented to real life problems. Separate training program into learning modules to allow for progressive instruction and for maximum flexibility with student schedules.
Department of Education.	
• Appropriate funding for and assist in the development and delivery of an environmental health and sanitation education program in rural communities and schools as a preventative health measure.	• Fund a Health Education Coordinator and support positions to develop an environmental health curriculum specific to rural Alaska sanitation problems. Form an interagency team to guide and assist in program integration and curriculum tailoring. Develop and deliver the program in rural communities and schools throughout rural Alaska as a preventative health measure.

PROPOSED REQUEST FOR FEDERAL ASSISTANCE	RECOMMENDED STATE PARALLEL EFFORT
• **New Administration's National Service concept.** The new Administration has made reference to a national service program which would put unemployed individuals to work. This concept could be used in rural Alaska to resolve sanitation problems. Village participants could work within their community as sanitation system operators-in-training; as members of construction crews for water, sewer, and solid waste projects; or as assistants to health aids, remote maintenance workers, rural utility business advisors, environmental health educators, utility managers, Village Safe Water Engineers, or PHS sanitarians.	

Rural Sanitation Task Force
Summary of Actions Required In the FY 94 Budget
By Department

	Increment Required
Alaska Energy Authority	
Continue funding of the Power Cost Equalization program at the FY 92 level, otherwise the price of operating water and sewer utilities will increase dramatically and many rural residents may not be able to afford the services.	$0
Department of Community and Regional Affairs	
Establish three Rural Utility Business Advisor positions to provide hands-on assistance and one-on-one training for rural clerks and administrators in basic utility management.	$375,000
Hire or detail one Local Government specialist to spend 1-2 weeks in 25 communities to review books, analyze utility costs and determine the extent to which communities are currently subsidizing their sanitation utilities.	$100,000
Department of Education	
Develop and implement an environmental health education pilot program in rural schools. This requires a Health Education coordinator and a part-time Clerk Typist.	$86,000
Department of Environmental Conservation	
Expand the Remote Maintenance Worker program by one position to provide services to 15 additional villages in the Y-K area (along the coast from Scammon Bay to Plantinum - including Hooper Bay).	$120,000
Increase the number of regionalized classroom training opportunities in rural "hub" communities for village operators and utility managers.	$50,000
Department of Transportation	
Support design and construction of utility roads that will facilitate the delivery of water and sewerage services in remote villages.	$3,200,000
University of Alaska - Anchorage	
Conduct Research and Development seminar to explain alternative sanitation technologies with design engineers in the public and private sector.	$20,000

Other: Stable Six Year Budget for Sanitation Projects

Commit to a six stable six year budget for sanitation projects which includes $22 million per year to the Village Safe Water program; $12 million per year to the Municipal Matching Grants program; and 10 million per year to the State Construction Loan program. This equates to forty-four million dollars per year which is $14.5 million less than the 10 year average of annual appropriations for sanitation projects.

Rural Sanitation Task Force
Summary of Major Policy Actions Required
By Department

DOA/ OMB

Limit Direct Grants for sanitation projects to those communities with proven management capabilities and a certified operator. Require a 10% match (consider in-kind services in communities which lack the funds to meet match requirements). This will require amending AS 36 (Direct Grant Statute) and developing criteria for analyzing managerial capability.

DEC/DCRA/OMB

Dedicate a small percentage of each CIP sanitation grant to Operator and Utility Management Training. This is a separate effort from the Rural Utility Business Advisor and Rural Maintenance Worker programs. It would fund class room training in rural "hub" communities and correspondence courses. This will probably require a legal opinion and regulatory amendment.

DEC

Reduce the degree of personnel fragmentation in the Drinking Water program so that funding is not divided among so many positions.

DOE/GOVERNOR'S OFFICE

Sign an Executive Proclamation which directs rural communities and schools to share water and sewerage utilities whenever possible.

A COMMITMENT TO ALASKANS
EXECUTIVE SUMMARY

RECOMMENDATIONS OF THE ALASKA SANITATION TASK FORCE

DRAFT
October 14, 1992

Introduction

The recommendations presented in this document were developed by the Alaska Sanitation Task Force. Taken together, they offer a long term strategy for improving sanitation conditions in rural Alaska.

This is a working document. As such, your comments and suggestions regarding the recommendations outlined on the following pages would be appreciated.

Please address all comments and ideas to:

Lori Telfer
Alaska Sanitation Task Force
410 Willoughby Avenue
Juneau, Alaska 99801-1795

Phone: 465-5139 Fax: 465-5177

A larger, more comprehensive document which details each of these recommendations and explains why they are needed is being prepared and should be completed in December. To receive a copy of the report, contact Lori Telfer at the above address.

About the Task Force

Forty-five individuals from across the State have participated in the Alaska Sanitation Task Force. The group began work in January 1992. Their goal: develop a strategy for improving sanitation conditions in rural Alaska. Due to the complexity and number of issues related to rural sanitation needs, twelve working groups were formed. Each was assigned specific issues to review and analyze. They were responsible for developing the recommendations contained in this document.

The Alaska Sanitation Task Force consisted of the following working groups:

- Corporations
- Direct Grants
- Education
- Enforcement
- Financing
- Housing
- Joint Utilities
- Operator Training
- Research & Development
- Subsidies
- Utility Management
- Utility Roads.

Chaired by Larry Merculieff, Task Force membership included representatives from:

- Alaska Energy Authority
- Alaska Housing Authority
- Alaska Housing and Finance Corporation
- Alaska Native Health Board
- Alaska Village Council Presidents
- Bureau of Indian Affairs
- Dept. of Administration
- Dept. of Commerce & Economic Development
- Dept. of Community &Regional Affairs
- Dept. of Defense
- Dept. of Education
- Dept. of Environmental Conservation
- Dept. of Transportation & Public Facilities
- Environmental Protection Agency
- Housing & Urban Development
- Health and Human Services
- Kuskokwim Corporation
- Legislature
- Lower Kuskokwim School District
- NANA Corporation
- North & Northwest Arctic Mayors Conference
- Office of Management &Budget
- Public Health Service
- Small Business Development Center
- Tananna Chiefs Conference
- University of Alaska
- Yukon Kuskokwim Health Corporation

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ACRONYMNS

AEA	Alaska Energy Authority
AFN	Alaska Federation of Natives
AHFC	Alaska Housing Finance Corporation
ANHB	Alaska Native Health Board
ASCE	American Society of Civil Engineers
BIA	Bureau of Indian Affairs
CES	Continuing Education Service
DCRA	Department of Community and Regional Affairs (State)
DEC	Department of Environmental Conservation (State)
DHSS	Department of Health and Social Services (State)
DOA	Department of Administration (State)
DOE	Department of Education (State)
DOTPF	Department of Transporation and Public Facilities (State)
DW	Drinking Water Program (DEC - State)
EH	Environmental Health Division (DEC - State)
EQ	Environmental Quality Division (DEC - State)
EPA	Environmental Protection Agency (Federal)
FCO/FC&O	Facilities Construction & Operation (DEC - State)
FHA	Farmers Home Administration (Federal)
FHA	Federal Highway Administration
GWWAB	Governor's Water & Wastewater Board
HUD	Housing and Urban Development (Federal)
IHAs	Indian Housing Authorities
ISTEA	Intermodal Surface Transportation Act of 1991
MOU	Memorandum of Understanding
NANA	N.W. Arctic Native Association
NWAB	N.W. Arctic Borough
OMB	Office of Budget and Management (State)
PCE	Power Cost Equalization Program
PHS	Public Health Service
RUBA	Rural Utility Business Advisor
SCRO	Southcentral Regional Office (DEC-State)
SNC	Significant Non-Compliance
UAA	University of Alaska - Anchorage
VSW	Village Safe Water Program (DEC - State)

Operation and Management Subsidy

Overview: Most village utility systems operate at a deficit. This results in eventual system failure and replacement costing the State and federal governments millions in capital funds. The State spent over $11 million during the last three years for system repair and replacement. Lack of operating funds is usually the culprit.

	Recommendation	Action Needed
Continued cuts in the Power Cost Equalization (PCE) program will increase the costs of operating water and sewer utilities in rural Alaska.	• Prevent further reductions in the PCE program.	• Stabilize funding at the FY 92 level. Target Completion: 6/93 Responsible Agency: AEA, Legislature, OMB
	• Evaluate the local utility matching program in the N.W. Arctic Borough to determine feasibility of expanding this pilot program statewide.	• Assign an individual from DCRA to work with DEC and NWAB to monitor the success of the local utility matching program. Target Completion: 6/93 Responsible Agency: DCRA, DEC, NWAB
The N.W. Arctic Borough is administering a local utility matching program for communities in their region.	• Audit communities in a wide geographic area to get an accurate accounting of their sanitation systems, revenues and expenditures.	• Hire or detail one Local Government Specialist for one year to spend 1-2 weeks in 25 communities to review books, analyze utility costs and determine the extent to which communities are currently subsidizing their sanitation utilities. Approximate cost: $100,000. Target Completion: Responsible Agency: DCRA, DEC, Legislature, Office of the Governor

	Recommendation	Action Needed
Develop a pilot program and apply lessons learned statewide.	• Based on experience in the N.W. Arctic Borough and the results of the community audit, establish eligibility criteria and local requirements for a statewide utility matching program.	• Develop: (1) eligibility criteria that considers average household income, costs of facility operation and community revenues; and (2) an ability to pay index based upon average household income, current user fees, local cash flow, and population. Establish baselines under the index to determine the amount of local matching funds which will be required for each community. Target Completion: 6/93 Responsible Agency: DCRA, DEC
	• Base the local utility matching program on performance standards. It should not be a "give away" program.	• Require communities participating in the program to meet operational standards including: (a) operator training and certification; (b) good financial bookkeeping; (c) adequate user fee collection ; (d) regular testing of equipment and reporting of facility efficiency, and (e) good management . Target Completion: 6/93 Responsible Agency: DCRA, DEC

Utility Roads

Overview: Adequate transportation facilities are not presently available for handling water, sewage and solid waste in bush communities. At least $100,000,000 is required to improve utility roads in approximately 100 communities.

Recommendation	Action Needed
• Document the need for utility roads in the villages.	• Develop an inventory utilizing the annual BIA community survey. Modify the BIA questionnaire to assess the need for utility roads. Forward data to DOTPF Regional Planners. Target Completion: May, 1993 Responsible Agency: DOTPF, BIA, VSW, PHS
	• Develop priority lists for projects. Target Completion: December, 1992 Responsible Agency: DOTPF, VSW, PHS
	• Determine building requirements for wetlands, including rights-of-way, availability of materials and construction/maintenance problems. Target Completion: Responsible Agency: DOTPF, PHS, VSW, BIA
• Adopt design standards for rural utility roads/ boardwalks.	• Develop typical standard details for utility roads. Obtain FHA approval. Target Completion: December, 1992 Responsible Agency: DOTPF, PHS, BIA

Recommendation	Action Needed
• Secure adequate funding for designing/building utility roads in the bush.	• Establish funding expenditure guidelines including limitations for use of ISTEA Funds. Target Completion: Responsible Agency: DOTPF, FHA
	• Develop procedures, including a long range development plan, by which ISTEA and other funds can be consolidated into a cohesive project. Target Completion: Responsible Agency: DEC
• Continue interagency coordination on utility road issue.	▪ Exchange agency priority lists to coordinate project planning and construction. Target Completion: Ongoing Responsible Agency: BIA, PHS, VSW, DOTPF
	▪ Educate agencies engineering staff in the use of alternative funding sources. Target Completion: 12/92 Responsible Agency: PHS, VSW, DOTPF
	• Clarify revisions in utility road standards/priority listing as necessary. Target Completion: Ongoing Responsible Agency: DOTPF, BIA, PHS, VSW.
	• Prioritize utility road projects on a yearly basis for the entire unorganized borough and submit it to DOTPF. Target Completion: Responsible Agency:

Utility Management

Overview: Rural communities have experienced difficulty in collecting user fees and ensuring utility revenues are sufficient to cover operation and maintenance expenses. System failures occur as a result. Weaknesses in management are less tangible and precise than technical needs but will lead to system failure as surely as equipment breakdowns.

Invest in an insurance policy . . . The RUBA Program.

Recommendation	Action Needed
• Expand the RUBA program staffing from one to four positions.	• Expand the Rural Utility Business Advisor (RUBA) pilot program to make it a part of DCRA. The current cost of the pilot program is $50,000. An additional $375,000 is needed as an incremental step to expand the program to the rest of rural Alaska. Target Completion: 6/93 Responsible Agency: DCRA
	• Coordinate RUBA activities with DEC's Remote Maintenance Worker Program and the Alaska Energy Authority's Circuit Rider program. Target Completion: 6/93 Responsible Agency: DCRA, DEC, PHS
	• Obtain federal funds to partially support the RUBA program. Target Completion: 1/93 Responsible Agency: PHS

Take advantage of economies of scale . . . . . Regionalize utility management.

Recommendation

- Regional organizations should operate and manage sanitation utilities in communities experiencing chronic facility problems or where a cost savings would be realized by centralizing these functions.

Action Needed

- Form a review team to examine existing regional utility organizations to determine the type of structure which would best lend itself to regionalizing water and sewer system operation and management.
  Target Completion: 12/92
  Responsible Agency: DEC, AEA, PHS, DCRA

- Apply for a $75,000 capital grant for the development and implementation of a pilot regional sanitation utility operation and management project.
  Target Completion: 6/93
  Responsible Agency: DCRA, regional Organization such as a borough or Health Corporation

- Advertise the advantages of a cooperative or multicommunity approach to utility operation and management such as: better lobbying for capital; availability of low interest loans; professional management and maintenance; local involvement through a utility board, lower cost of parts and supplies; dependable service with less headaches; consistent billing; reliable collections.
  Target Completion: 4/93
  Responsible Agency: DEC, AEA, PHS

- Recruit communities that have difficulties with their management and operation and develop incentives for communities to join the organization (i.e. capital grant funding priority and organizational grants form the State).
  Target Completion: 6/93
  Responsible Agency: DEC, PHS, DCRA, Legislature

Develop a responsible approach . . . tailor training to rural needs.

Recommendation	Action Needed
• Tailor training programs to fit the audience.	• Design hands-on training that is sensitive to cultural differences and provides practice oriented to real life problems. Manuals that require extensive reading skills and outdated canned programs should not be used. Monitor and modify training program as needed. Conduct "training for trainers". Target Completion: 6/93 Responsible Agency: DEC, DCRA, PHS, Regional Health Corporation, DOE, ANHB
	• Separate the training program into learning modules to allow for progressive instruction and for maximum flexibility with student schedules. Supplement classroom work with correspondence courses. Target Completion: 6/93 Responsible Agency: DEC, PHS, DCRA, DOE, UAA
	• Secure funds for utility management and operation training. Possible funding sources include: a portion of each water and sewer appropriation; combining State and federal training monies into a single fund; private foundations. Target Completion: 12/92 Responsible Agency: DEC, PHS, DCRA, AEA and others

	Recommendation	Action Needed
Provide opportunities for advanced training.	• Launch a program through the University of Alaska Anchorage College of Career and Vocational Education to provide formalized education to community administrators and utility operators.	• Define the job skills needed for city administration and utility operation. Using this information develop curriculum. An Associates degree program would supply trained personnel to operate and mange utility systems. Target Completion: 12/93 Responsible Agency: UAA, DCRA, DOE, DEC, PHS
Boost community efforts . . . establish performance standards.	• Require communities receiving State and federal money for utility construction and operation to meet some performance standards for management of their utility businesses.	• Condition grants upon the community meeting minimum utility management standards. Form an inter-agency group that includes community representatives to establish minimum management standards. Develop a method for monitoring community performance. Target Completion: Ongoing Responsible Agency: DCRA, DEC, PHS, OMB • Require communities receiving State or federal funding to provide their staff with basic operator and utility management training. If a community fails to complete the training, further technical assistance through RUBA or other State programs would not be considered a priority. Target Completion: 12/93 Responsible Agency: DEC, OMB, DCRA, PHS

Promote a sense of ownership . . . Get residents involved.

Recommendation	Action Needed
• Involve communities in the planning the design and construction of their sanitation utilities.	• Conduct community planning prior to funding the construction of utility projects and require some type of local match to ensure local involvement. Small planning grants issued prior to decisions to fund utility projects would result in more involvement form the community and would enable questions to be answered without frustrating construction schedules. Target Completion: 6/93 Responsible Agency: DEC, PHS, AEA, DCRA, Regional Health Corporations
	• Assist DEC and PHS to more closely examine the community's ability to support utility facilities. At minimum, examine household incomes, past community utility business practices, current user fees, and payment delinquency with other utilities. Utility type and design must be supportable by the community. Where possible, design systems which enhance collection of bills (i.e. pre-pay meters). Target Completion: 12/92 Responsible Agency: DCRA
	• Develop an operations and management financing plan. Devise methods of involving the community in the early stages of conceptual design. Ways of using local knowledge and recognizing local concerns need to be developed and implemented. Form an inter-agency group to examine current processes and propose ways of increasing community involvement. Target Completion: 12/92 Responsible Agency: DCRA DEC, PHS, AFN, Mayor's Conference

Operator Training and Certification

Overview: Certified, trained operators are vital to the successful operation of sanitation systems. Of Alaska's 210 rural communities 55 have an operator with some type of certification. Only four have operators who are certified at an appropriate level for all system types. Currently, however, only communities with systems which serve over 500 people or have over 100 service connections are required to employ certified operators for each system type.

Methods for increasing the competency of rural operators must be implemented.

Recommendation	Action Needed
• Expand the Remote Maintenance Worker (RMW) program.	• Expand the RMW program to provide coverage to the rest of rural Alaska. As an incremental step, $120,000 is needed during FY 93 to provide services to 15 additional villages. Target Completion: Ongoing Responsible Agency: DEC, DCRA, Office of the Governor, Legislature
	• Coordinate RMW activities with DCRA's RUBA Program and the Alaska Energy Authority's Circuit Rider Program. Target Completion: 6/93 Responsible Agency: DEC, DCRA, AEA
• Coordinate utility operations and training activities.	• Develop a Memorandum of Agreement to coordinate efforts, share experiences and define the responsibilities of agencies which have a role in technical assistance and training in rural utility operations and management. Target Completion: Completed Responsible Agency: DEC, PHS, DCRA

Recommendation	Action Needed
• Establish and implement a comprehensive rural utility operation and maintenance management training strategy.	• Survey and assess the utility operation and management capability and needs of each rural Alaska community. Target Completion: Ongoing Responsible Agency: DCRA, DEC, PHS
	• Based on survey, assessment, and sanitation task force recommendations, establish and implement a long term rural utility training strategy. Target Completion: Ongoing Responsible Agency: DCRA, DEC, PHS
• Increase operator training opportunities for rural Alaska.	• Increase the frequency of certification testing, regionalized training and over-the-shoulder training in rural locations. Target Completion: Ongoing Responsible Agency: DEC, PHS
	• Augment operator lending library to include additional textbooks, correspondence courses, and videos which are tailored to rural operators. Target Completion: FY 93 Responsible Agency: DEC
	• Provide adequate funding for the operator training program. Commit a portion of capital project appropriations to this effort. Target Completion: Responsible Agency: OMB, Legislature

Recommendation	Action Needed
• Increase community administrator and resident awareness and understanding of the importance of properly operated and managed sanitation utilities and the vital role of operators.	• Combine efforts of utility operation and management training staff to educate community members, administrators, and students on the basic needs and concepts of utility management and operation. Target Completion: Continuing Responsible Agency: DEC, DCRA, PHS
• Ensure that communities have the capability to properly operate water and sewer systems before they are constructed.	• Award sanitation construction grants contingent upon communities hiring a certified operator. Target Completion: Ongoing beginning FY 94 Responsible Agency: DEC, DCRA, DOA, OMB, Legislature
• Review operator certification legislation and regulations to determine if rural needs can be better accommodated. Revise if needed.	• Review education and experience requirements for certification eligibility, availability of operators and issues with the Governor's Water and Wastewater Advisory Board (GWWAB). Ascertain the benefits of requiring all communities, regardless of size, to employ a certified operator. If benefits outweigh drawbacks, amend current law. Target Completion: Ongoing Responsible Agency: DEC, PHS, GWWAB
• Support, advocate, and enforce current operator certification requirements and regulations.	• Develop procedures for coordinating and implementing this approach. FCO will develop and maintain a system classification inventory. Target Completion: FY93 Responsible Agency: DEC

Housing Sanitation Standards For Areas Without Piped Utilities

Overview: Household water/sewer facilities are often substandard in rural Alaska. Honeybuckets must be eliminated and water delivery and storage provided for each home.

	Recommendation	Action Needed
Residents desire flush toilets, not necessarily piped sewers.	• Waste can be temporarily stored in containers under the home and then transported to an appropriate disposal site.	• When piped utilities are not possible, give highest preference to systems which use a storage tank and ATV haul system. Target Completion: FY94 - FY99 Responsible Agency: HUD, AHFC, DEC, PHS, Legislature.
To reduce costs, use haul systems rather than piped utilities.		• Build boardwalks, gravel roads with driveways, or boardwalk extensions to provide vehicle access for waste collection from a location adjacent to each home to a disposal site. Target Completion: FY94 - FY99 Responsible Agency: DOTPF, AHFC, DEC, PHS, Legislature.
	• Require minimum standards for in-home water use.	• Design homes with a minimum 200 gallon water storage tank . Target Completion: Ongoing. Responsible Agency: HUD, PHS, IHAs.

Recommendation	Action Needed
	• Equip homes with water plumbing systems to deliver water to kitchen sinks and bathroom lavatories via hand or foot pumps. Target Completion: Ongoing Responsible Agency: HUD, PHS, IHAs.
	• Prohibit the use of hot water heaters due to the dangers of operating them in non-pressurized systems. Target Completion: Ongoing. Responsible Agency: HUD, PHS, IHAs.
• Improve access for community water hauling systems.	• Provide a community water hauling system based on local planning, available road systems, and the ability to operate in winter months. Equipment may range from a tank truck to smaller ATV vehicles, with sled or trailer mounted 100 gallon tanks with pumps. Target Completion: FY94 - FY 99 Responsible Agency: DOTPF, HUD, DEC, PHS, Legislature.
	• In communities without a gravel road system, boardwalks must be built to provide access for smaller ATV water delivery vehicles. Target Completion: FY94 - FY99. Responsible Agency: HUD, DOTPF, DEC, PHS, Legislature.

Recommendation	Action Needed
	• Build driveways or boardwalk extensions to enable closer vehicle access to homes for water delivery. Target Completion: FY94 - FY99 Responsible Agency: HUD, DOTPF, DEC, PHS, Legislature.
• Develop new water and sewer technologies which are adaptable to conditions in rural Alaska.	• Field test innovative and decentralized water and waste disposal technology. Target Completion: Ongoing Responsible Agency: AHFC, DEC, PHS
	• Collect and analyze housing-related building and infrastructure technological information from other states and countries. Target Completion: Ongoing Responsible Agency: AHFC, DEC

Corporations

Overview: Since it would not be legal or feasible for Native Corporations to fund the construction of rural sanitation systems, other areas where "for-profit" organizations could contribute to solving village water and sewer project were reviewed. A form of privatization known as Contract Operation and Management showed the most potential. This arrangement could provide a solution to the problems many villages have experienced in keeping their sanitation systems functioning properly. To take advantage of economies of scale, a corporation could enter into contracts with several villages in the same geographic region and would hire a single expert to be responsible for the financial management of each village sanitation system. Village operators could be retained by the Corporation under employment contracts. This contractual/partnership arrangement could potentially save communities money, enhance service deliver, and protect expensive systems.

	Recommendation	Action Needed
Investigate privatization of rural sanitation utility operation and management.	• Study the feasibility of contracting operation and management between villages and corporations.	• Prepare a grant proposal and obtain funding for completing the analysis. Target Completion: Completed Responsible Agency: DEC, NANA • Target a Regional Corporation and several villages to participate in the study. Target Completion: 10/92 Responsible Agency: DEC, NANA • Hire a consultant with a strong financial background and an understanding of village utility operations to conduct the study. Target Completion: 11/92 Responsible Agency: DEC, NANA

Recommendation	Action Needed
• Conduct an analysis of the feasibility and cost efficiency of contract utility operations and management arrangements between Corporations and villages.	• Assess the following for each of the villages participating in the study: (a) current users fees and their collection; (b) current revenues in comparison to operating expenses; (c) deficiencies in current utility operating and management practices. Target Completion: 6/93 Responsible Agency: Consultant
	• Analyze the cost savings of: (a) buying and shipping chemicals in bulk; (b) maintaining a single, centrally located utility supply and equipment warehouse for several villages; (c) centralizing management of systems. Target Completion: 6/93 Responsible Agency: Consultant
• If analysis shows the contact relationship has potential develop and institute a pilot program to test its practical application.	• Gain community support for the partnership; develop village/corporation contracts and corporation/operator employment contracts; hire a utility manager to collect user fees and mange systems. Target Completion: FY94 Responsible Agency: Interested Corporations, DEC
• If, after one year of operation, the pilot program proves to be successful, promote similar relationships in villages experiencing chronic operation, maintenance, compliance, and management problems.	• Produce and distribute a step-by-step partnership development and implementation guide. Explain contract benefits to councils in villages experiencing water/sewer operations or management problems. Target Completion: Ongoing Responsible Agency: DEC, DCRA

Financing the Planning, Design and Construction of Sanitation Facilities

Overview: It is estimated that well over $1 billion will be needed to finance sanitation infrastructure in rural Alaska over the next twenty years. This demand greatly exceeds current State and local revenues.

The Department of Environmental Conservation is tapping all available federal/State funding sources for construction of sanitation facilities and federal tax laws make it uneconomical for private corporations (e.g. Native village or regional corporations) to invest in this effort. Because of the limited funding available, it is imperative that the State leverage scarce general funds by seeking federal matching funds, capitalizing revolving loan and grant programs, and requiring a local match to the extent possible. Every community must demonstrate its commitment to the operation and maintenance of public sanitation facilities by supporting provisions which require user fees, proper utility financial management, and trained operators.

	Recommendation	Action Needed
Break the cycle of unpredictable funding . . . stabilize sanitation funding.	• Stabilize State funding for sanitation projects.	• Commit to a five year funding plan for water, sewer, and solid waste projects. Appropriate $22 million per year for five years to the Village Safe Water program, $12 million per year for five years to the Municipal Grants program, and $10 million per year for five years to the State Construction Loan program. Target Completion: FY 94-FY 99 Responsible Agency: Legislature, Office of the Governor

	Recommendation	Action Needed
Develop a farsighted solution . . . funding based on long term planning.	• Continue to follow a sanitation funding plan which is based upon need rather than political considerations.	• Fund only those projects selected through a priority ranking systems and based on a long term planning process. Target Completion: Annually Responsible Agency: Legislature, Office of the Governor, DEC
	• Design facilities to fit the community, including proper scale and appropriate level of technology. The design process should include a role for community participation.	• Establish a review procedure with community participation which ensures that proposed sanitation facilities are matched to the community's fiscal capability. Target Completion: Ongoing Responsible Agency: DEC, DCRA, PHS, OMB, EPA
Maximize State revenues . . . institute an equitable solution.	• Maximize limited State revenues through an equitable division of State and local financing alternatives.	• Develop a Statewide Ability to Pay Index similar to those used in other states based upon median family income, current user fees, population, local cash flow, etc. for boroughs, first class cities and second class with a population over 750. Target Completion: 12/92 Responsible Agency: DEC, DCRA,OMB
		• Establish baselines under the Ability to Pay Index to determine which communities should receive low interest loans, a grant/loan mix, or 100% grants. Target Completion: 1/93 Responsible Agency: DEC, DCRA, OMB

Recommendation		Action Needed
		• Adopt a statewide policy specifying that capital budgets must reflect the Ability to Pay Index baselines. Before this public policy is adopted, its impact on rural communities must be reviewed by Native Regional Organizations. Target Completion: Ongoing Responsible Agency: Legislature, Office of the Governor, DEC
		• Set up a panel (DEC, DCRA, OMB and federal agencies) to determine the appropriate match amounts for second class and unincorporated communities receiving State general fund grants. Before this public policy is adopted, its impact on rural communities must be reviewed by Native Regional Organizations. Target Completion: Annual Responsible Agency: DEC, DCRA, PHS, OMB, EPA, FHA
Capitalize an endowment for the future . . . the Alaska Clean Water Fund.	• Optimize the State's investment in sanitation infrastructures.	• Capitalize the State Construction Loan Program Target Completion: Ongoing Responsible Agency: Legislature, Office of the Governor
		• Institute the Alaska Clean Water Fund as the primary funding vehicle for communities who have the population base and financial capability to repay a low interest loan. Target Completion: FY 94 Responsible Agency: Legislature, Office of the Governor

	Recommendation	Action Needed
Promote federal participation.	• Coordinate with federal agencies in planning and funding facilities.	• Develop a cooperative planning and budget development process between the Department of Environmental Conservation and the Public Health Serve, the Environmental Protection Agency and the Farmers Home Administration. Target Completion: Ongoing Responsible Agency: DEC, PHS, EPA, FHA • Aggressively track and submit comments on federal legislation and regulations relating to water, sewer, and solid waste, particularly those which could affect Alaskan communities. Target Completion: Ongoing Responsible Agency: DEC, Office of the Governor • Continue to investigate other federal funding options and alternatives. Target Completion: Ongoing Responsible Agency: DEC, DCRA

Joint Utilities

Overview: When two water treatment and two sewage collection/disposal facilities exist in a small community, economy of scale is lost. To improve efficiency and service delivery, joint utilities serving the school and the community are essential. Communities and schools need to share utilities, operations, and costs.

School districts and communities compete against each other for capital project funds.

Recommendation	Action Needed
• Consolidate utilities wherever possible.	• Develop an executive proclamation for the Governor's signature which directs communities and schools to share utilities whenever possible. Target Completion: 12/92 Responsible Agency: Office of the Governor
• Identify schools and villages with dual utilities and verify the need to upgrade or combine facilities.	• Survey villages and their schools during visits to communities. Target Completion: 6/93 Responsible Agency: DEC
• Coordinate funding requests for utilities in small communities.	• Develop an MOU between DEC and DOE to facilitate joint planning of utilities for villages and schools. Target Completion: 12/92 Responsible Agency: DEC, DOE

	Recommendation	Action Needed
Water systems may need to be upgraded to meet new regulations.	• Give priority to joint utilities when evaluating applications for upgrade funding.	• Develop an MOU between DEC, DOE, and PHS that would give priority to joint utilities. Target Completion: Responsible Agency: DEC, DOE, PHS

Education

Overview: The lack of understanding of the link between environmental pollution, poor sanitation practices and waterborne illness aggravates public health problems and sub-standard sanitation conditions in many villages. An environmental/health education program needs to be developed and implemented in rural schools and communities.

	Recommendation	Action Needed
Focus and develop educational resources	• Develop and implement an environmental health education pilot program in rural schools.	• Establish a Health Education Coordinator and a part-time Clerk Typist position within DOE. Approximate one year cost is $86,000. Target Completion: Responsible Agency: DOE
		• Establish an interagency team to guide and assist in program integration and curriculum tailoring for pilot project. Target Completion: Responsible Agency: PHS, DOE, DHSS, EPA, UAA.
Implement a pilot project		• Target three to five villages in the Yukon Kuskokwim Health Corporation to participate in a pilot program and identify health information needs for each. Target Completion: Responsible Agency: DOE, PHS, DHSS, DEC

	Recommendation	Action Needed
Analyze and expand the pilot project	• Using experience gained and lessons learned from the pilot program, develop an environmental health education program for implementation throughout rural Alaska.	• Implement and evaluate the pilot program. Target Completion: Responsible Agency: DOE, Schools • Based on the pilot program evaluation modify/enhance learning materials. Include utility systems and environmental health modules in statewide science and environment curriculums. Target Completion: Ongoing Responsible Agency: DOE • Include a civics module to provide context for public ownership of utilities. Target Completion: Responsible Agency: • Expand and improve the teacher training program for environmental health and natural resources. Target Completion: Responsible Agency: CES, UAA
Focus community health resources	• Develop and institute a community environmental health education program to be run concurrently with the environmental health school program.	• Work with the education pilot communities to explain the importance of the program and why it is needed. Target Completion: Responsible Agency: CES, PHS, DEC

Recommendation	Action Needed
	• Establish an interagency team to guide and assist in educating community residents of the relationship between environmental health, sanitation practices, and waterborne disease; the importance of utility systems and how they work. Target Completion: Responsible Agency: PHS, DOE, DHSS, EPA, UAA
	• Utilize existing or develop additional teaching materials and videos as needed by village health aids, ANHB, PHS, DCRA, and DEC for use in community health education efforts. Target Completion: Responsible Agency: ANHB, DOE, DHSS, DCRA, DEC
	• Educate and sensitize "field staff" (e.g. local health aids, circuit riding health professions) of the importance of environmental health education and have them explain it to residents during the course of the normal one-on-one consultations they perform. Target Completion: Responsible Agency: DHSS, PHS, ANHB

Enforcement

Overview: Alaska has a very large number of serious, long-term drinking water violators. The rate of non-compliance is among the highest in the nation. This situation impacts the ability of the State to improve drinking water quality and demonstrates that providing technical assistance alone has not been effective in accomplishing the task of reducing the number of violations, and in particular, reducing the number of consistent, long-term violators.

Enforcement action is needed to assure that all Alaskans have clean drinking water.

Recommendation	Action Needed
• Restructure the organization of the Department of Environmental Conservation's Drinking Water program.	• Reduce the degree of personnel fragmentation in the Drinking Water program so that funding for the 31 full time positions is not divided among 70-80 people. Target Completion: 1993 Responsible Agency: DEC • Complete the Drinking Water program plan. Identify problems, solutions and needed action. Target Completion: Delayed Responsible Agency: DEC (regional & central offices) • Separate enforcement and technical assistance functions within the Department. Target Completion: 12/31/92 Responsible Agency: DEC (regional offices)

Recommendation	Action Needed
• Coordinate and improve "field" services such as sanitary surveys, technical assistance visits, and on-site training.	• Expand State, federal, and non-profit organization field efforts to include emphasis on monitoring and reporting requirements. Target Completion: 6/30/93 Responsible Agency: DEC, PHS, Health Corporations
	• Provide hands-on technical assistance to villages before they are included on the significant non-compliers (SNC) list. After the first monitoring violation is recorded, the Department will initiate assistance to correct the deficiency and prevent the system violation from reaching the SNC list. Target Completion: Immediately Responsible Agency: DEC (EQ, EH, FC&O)
• Promote the use of consistent and continued application of formal enforcement actions	• Re-examine DEC's enforcement policy to reduce the number of long term violators. Prioritize significant non-complying systems and develop a target number of cases for enforcement annually. Target Completion: 12/92 Responsible Agency: DEC
	• Notify significant non-compliers and initiate formal actions. Target Completion: 3/93 Responsible Agency: DEC
	• Escalate enforcement actions in timely and appropriate fashion and initiate enforcement action at the request of other agencies such as PHS. Target Completion: Ongoing Responsible Agency: DEC

Recommendation	Action Needed
• Establish and implement timely and consistent compliance/enforcement procedures with penalties.	• Update the State's Compliance/Enforcement Strategy and ensure careful adherence to the strategy's documentation procedures which must be adequate to potentially support a case in a court of law. Include a mission statement, the program's philosophy, future direction, and a strategy for improving water system compliance with drinking water regulations. An analysis of compliance statistics is suggested as an effective approach for solving non-compliance problems. Target Completion: 9/30/92 Responsible Agency: DEC (DW program)
• Improve compliance with drinking water monitoring and reporting requirements.	• Develop and distribute an easy to follow table of drinking water requirements in order to overcome confusion in regulation interpretation. Target Completion: 12/31/92 Responsible Agency: DEC (DW program)
	• Enhance communication between DEC, PHS, and EPA through the use of electronic mail and mandatory exchanges of rural travel plans, priorities, inspection reports and trip reports. Designate a contact person for each agency to organize and circulate this documentation. Target Completion: 12/31/92 Responsible Agency: DEC, PHS, EPA
	• Produce a series of public service announcements to promote safe drinking water, community awareness and citizen responsibility. Target Completion: 12/31/92 Responsible Agency: DEC, EPA

Recommendation	Action Needed
	• Fully implement DEC's 1989 Rural Strategy as an alternative to formal enforcement action. Continue to develop individual strategies for rural systems in non-compliance which define realistic, attainable steps to compliance. Adopt a department-wide focus on strategy implementation. Initiate enforcement action at English Bay as a model joint agency approach to returning a system to compliance. Target Completion: 6/30/93 Responsible Agency: DEC (SCRO, DW coordinator)
• Coordinate federal and State drinking water efforts.	• Initiate or update Memorandums of Agreement between PHS, EPA and DEC regional offices. Target Completion: 6/30/93 Responsible Agency: DEC (DW program)
• Promote rural public health education to assist rural residents understand the hazards associated with unsafe drinking water and poor sanitation practices.	• Give villages who are in violation of drinking water reporting and monitoring standards the option of participating in community environmental health education programs as an alternative to fines. Target Completion: Ongoing Responsible Agency: DEC

Direct Grants

Overview: The Direct Grants Program provides funds to communities for sanitation projects; however, some of these projects are not successful and do not meet state and federal standards. Requirements are necessary to ensure the successful completion and continued operation of projects funded with Direct Grants.

Recommendation	Action Needed
• Award Direct Grants only to those communities providing at least 10% of the total project costs, or an equivalent amount of in-kind services. Before this public policy is adopted, its impact on rural communities must be reviewed by Native Regional Organizations.	• Change Department of Administration Direct Grant requirements, which necessitates an amendment to the Direct Grant program's authorizing legislation. Target Completion: FY 94 budget Responsible Agency: Governor's Office/ Legislature
• Award Direct Grants only to those communities that have demonstrated the managerial capability to competently administer a grant project and manage a utility.	• Develop criteria to analyze this capability. Target Completion: FY 94 Budget/Ongoing Responsible Agency: DOA, DCRA, DEC, Legislature
• Provide Direct Grants to only those communities that have an operator with the proper level of certification for the facility.	• Develop criteria to analyze this capability. Target Completion: FY 94 Budget/Ongoing Responsible Agency: DOA, DEC

Recommendation	Action Needed
• Allow a percentage of each Direct Grant to be used to obtain the capability of operating and managing a sanitation utility system.	• Change the Department of Administration's Direct Grant Statute or specify in capital budget. Target Completion: FY 94 Budget/Ongoing Responsible Agency: Legislature/Department of Administration
• Award Direct Grants based upon a priority ranking system.	• Develop and institute a set of criteria which considers public health, environmental concerns, and local commitment. Target Completion: FY 94 Budget Responsible Agency: DOA, DEC, DCRA

Research and Development of Alternative Sanitation Technologies for Rural Alaska

No single technology will solve Alaska's rural sanitation problems.

Overview: The focus of the Research and Development workgroup was to find innovative alternatives to the "honeybucket system".

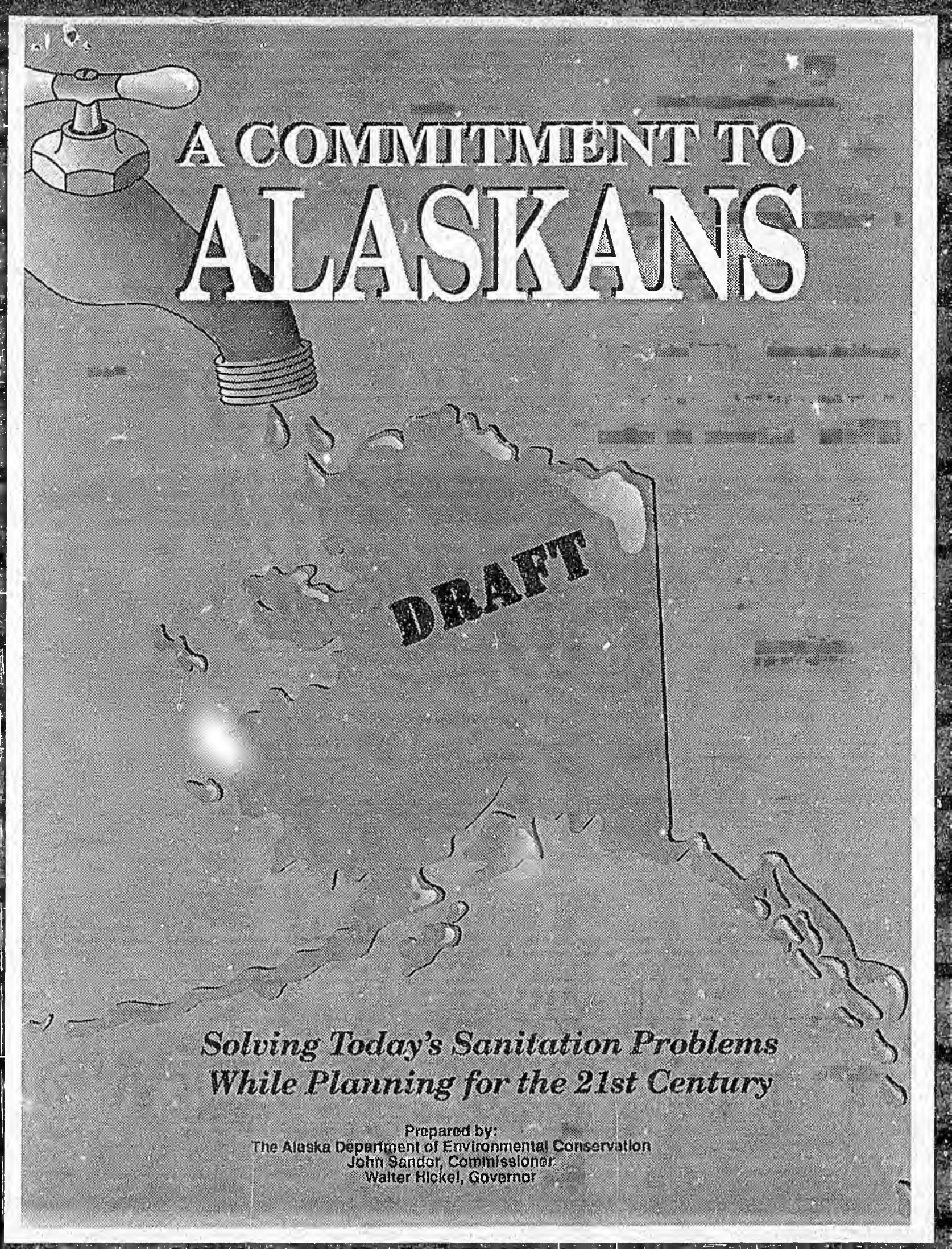
The workgroup concluded that (a) alternative technologies exist, however, conditions are so diverse that there is no single technology available nor was a "black box" found to solve all of Alaska's rural sanitation needs and (b) successful application of available technology is not strictly a technical problem but includes socio-economics, public administration, and management in the villages.

Recommendation	Action Needed
• Eliminate the use of honeybuckets in 104 villages.	• Provide rural Alaskans with practical methods for removing sewage wastes from their homes. Targeted villages are identified in the report. Target Completion: Ongoing Responsible Agency: DEC, PHS, EPA
• Increase the professional engineering community's awareness of the availability and capability of alternative wastewater technologies.	• Conduct alternative technology seminars with design engineers in the public and private sector. Target Completion: Annually. Responsible Agency: UAA- Engineering
• Increase community awareness, acceptance and understanding of practical alternative sanitation technologies.	• Promote the use of practical alternative technologies when consulting with village leaders. Target Completion: Continuing. Responsible Agency: DEC, PHS, Private Sector Engineers, ASCE.

Increasing community awareness and understanding of alternative technologies is vital.

	Recommendation	Action Needed
An interdisciplinary approach is needed.	• Use a multidisciplinary approach to solve complex sanitation problems in selected communities.	• Recommend appropriate technologies to meet residents' needs based on financial, technical and management capabilities of the community. Target Completion: FY 94 Responsible Agency: DEC, PHS, DCRA, UAA-Engineering
Research and development should be an ongoing and intricate part of Alaska's sanitation programs.	• Secure funding to continue research and field testing of alternative sanitation technologies to determine their feasibility/effectiveness in rural Alaska.	• Submit a grant proposal to the Alaska Science and Technology Foundation for field testing of composting toilets. Target Completion: Done Responsible Agency: UAA-Engineering • Seek additional funding sources (i.e. EPA, private foundations) as needed to continue research and development efforts. Target Completion: As necessary. Responsible Agency: DEC, UAA-Engineering

A COMMITMENT TO ALASKANS



Solving Today's Sanitation Problems While Planning for the 21st Century

Prepared by:
The Alaska Department of Environmental Conservation
John Sandor, Commissioner
Walter Hickel, Governor

"A Commitment to Alaskans" is a working document meant to lay the foundation for a more refined plan in the future. As such, the Department would like to solicit public and agency input regarding information contained in this draft as well as any additional information or ideas which could be of assistance in this planning effort.

Additionally, an Interagency Task Force is being formed to act as a catalyst for advancing and refining the goals, strategies and objectives outlined on the following pages. If you are interested in participating in one of the Task Force's working groups, please let us know.

Please address all comments/ideas to:

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As Alaska looks to the future and a growing population, it is essential that we strive to provide sanitation services which protect the public health of our residents and provide a foundation for economic development opportunities.

It is the goal of this Administration that no Alaskan be deprived of the quality of life afforded by the provision of water, sewerage, and solid waste services.

OVERVIEW

Without adequate water, sewerage, and solid waste facilities, the vitality of Alaska's communities is hampered, public health threatened, and opportunities for economic development severely restricted.

As the State looks towards the twenty-first century, it is critical that we commit to an efficient, well planned approach to providing these public services to all Alaska.

This document offers a strategy for formulating a systematic approach to addressing the water, sewerage, and solid waste needs of Alaska's communities. It presents recommendations for maximizing the efficiency of current sanitation systems and optimizing future capital project investments. As a long-term management proposal, goals are outlined and action strategies presented for review.

This is a working policy document meant to lay the foundation for a more refined implementation plan.

A BLUE PRINT FOR SOLVING ALASKA'S SANITATION NEEDS

FUNDAMENTAL GOAL:

It is the goal of this administration that no Alaskan be deprived of the quality of life afforded by the provision of adequate water, sewerage, and solid waste services.

STRATEGY:

To achieve this goal, a five point management strategy is recommended.

- Develop a Comprehensive Interagency Approach to Problem Solving.
- Adhere to a Stable Six Year Funding Commitment.
- Six Year Capitalization of the Alaska Clean Water Fund.
- Promote a Solid State/Federal/Community Partnership.
- Enhance the State's "Insurance Policy" Programs (Training & Technical Assistance).

TIME FRAME:

If the recommendations outlined in this plan are effectively implemented, water, sewerage, and solid waste services will be provided in every Alaskan community by the year 2010. Intermediate steps may be required to achieve the final level of service.

Due to the distinct demographic and economic conditions as well as the diverse sanitation needs of Alaska's urban and rural communities, two separate plans for implementing the State's overall sanitation management strategy are required.

The first plan, outlined on pages ** through **, is a strategy for addressing the sanitation needs of the State's urban communities. The second plan, which begins on page **, presents recommendations for solving the water, sewerage, and solid waste problems in rural areas. These plans are intended to stand alone and may, therefore, contain some redundancy.

Under each plan, management goals are presented followed by action strategies for goal advancement.

GOALS AND STRATEGIES FOR SOLVING THE SANITATION NEEDS OF URBAN ALASKA

The Sanitation Needs of Urban Communities are Dramatic.

The immediate and long term need for increasing the availability of funds for urban water, sewer, and solid waste management projects is dramatic. During the next twenty years, it is estimated that a minimum of $1 billion will be needed to plan, design, construct, expand, upgrade, replace, and rehabilitate sanitation systems in the State's incorporated municipalities.

AGING FACILITIES

The majority of urban water, sewerage, and solid waste facilities in place today were constructed between 1973 and 1985 at a cost which exceeded $750 million. Since the average useful life of these facilities is 15-20 years, it is projected that there will be a major demand for system replacement between 1992-2005. The exact extent of these replacement costs is not yet known, however, due to inflation and a variety of other economic factors, costs will exceed the first round investment.

POPULATION GROWTH

Alaska is the second fastest growing State in the nation and it's highest growth rates have traditionally been concentrated in incorporated communities. The population in many of these communities has already increased beyond the design capacity of their sanitation systems and system overload has become a serious problem. This increased burden on a treatment facility shortens its useful life and can result in inadequate treatment, recurring system malfunctions, or a complete system breakdown. New facilities need to be constructed or old facilities expanded to accommodate the growing population of these communities.

In addition to replacing aging systems and accommodating population growth, local governments will soon be faced with meeting new federal drinking water and solid waste standards. Complying with these new standards will require a major investment in extensive system upgrades for many communities.

NEW DRINKING WATER REQUIREMENTS

The federal government has recently redefined safe drinking water requirements. The fiscal impact of the new standards is currently under review. It is known, however, that a major investment will be required to bring systems into compliance with new surface water filtration and lead/copper rules.

NEW SOLID WASTE REQUIREMENTS

Due to the expense of upgrading landfills to meet new federal requirements, many cities will likely opt to close their landfills and build new ones. This will not be cheap. A recent study for the Juneau landfill, for example, estimated closure costs of approximately $10 million. When constructing new facilities, communities will be required to meet federal design standards which will necessitate a substantial expenditure.

AN ENDOWMENT FOR THE FUTURE

GOALS

The following goals have been identified as cornerstones to addressing the sanitation needs of urban Alaska:

- **Maximize limited State revenues through an equitable division of State and local financing alternatives.**
- **Promote a State/Community partnership approach to problem solving.**
- **Assist communities protect public health and attain/ maintain compliance with State and federal requirements.**
- **Develop a systematic approach to meeting community facility rehabilitation and replacement needs.**
- **Formulate an effective strategy for meeting population growth needs and ensuring adequate sanitation services are provided throughout urban Alaska.**

Four Action Strategies are recommended as solid practical steps toward achieving these goals:

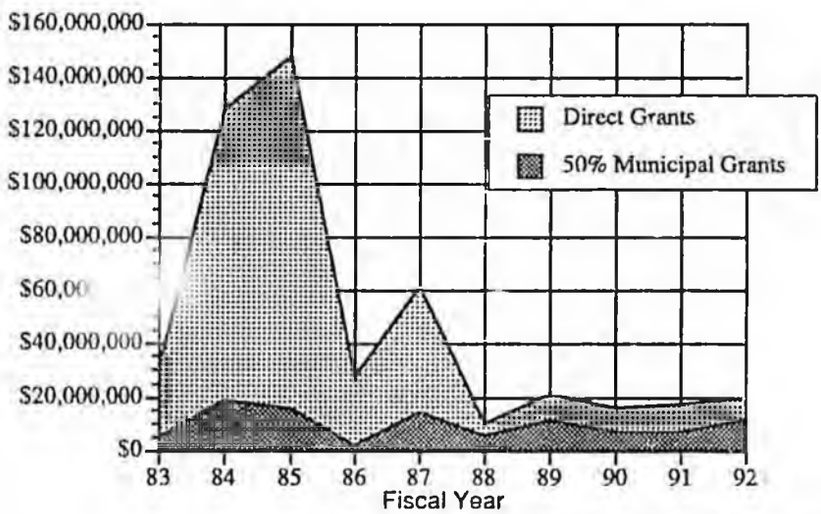
- **Stabilize funding for sanitation infrastructure.**
- **Optimize the State's investment in sanitation facilities.**
- **Promote State/Community partnerships**
- **Develop a planning database.**

ACTION STRATEGY:
Stabilize funding for sanitation infrastructure.

A stable and predictable funding commitment for the construction of sanitation facilities is necessary to achieve the goal of adequate sanitation services in every Alaskan community.

As shown in the graph below, State funding of community sanitation facilities has been sporadic at best. When State revenues were high, it was relatively easy for local governments to obtain grants. However, as oil revenues declined so did the State's investment in these projects. The unpredictable nature of this "boom and bust" funding cycle has made planning for long term capital improvements virtually impossible for local governments. In fact, there have been instances where communities were successful in receiving State funding for the planning, design and the first construction phase of a project, but have not received financial assistance for the phases necessary to complete the project.

State Funding History of Sanitation Projects*



* exluding projects funded through Village Safe Water

By committing to a stable Municipal Matching Grants budget, the State and local governments would be able to plan for and finance public sanitation projects in a more effective and efficient manner.

Likewise, by capitalizing the Alaska Clean Water Fund loan programs, the State would provide Alaska's urban communities with a predictable, perpetual and, eventually, self-sustaining financial resource (as describe in objective 2 of the next Action Strategy.

ACTION STRATEGY:
Optimize State investment sanitation infrastructure.

It is estimated that well over $1 billion will be needed to finance sanitation infrastructure in incorporated cities and boroughs during the next twenty years.

This demand greatly exceeds limited State and local revenues. It is therefore vital that we: (a) provide a financially prudent, long term strategy to solve sanitation needs and (b) stretch and leverage every dollar spent on sanitation infrastructure to the greatest extent possible.

Objective 1 — Obtain State match for leveraging federal capitalization of the Wastewater Loan Program.

Since 1972, Alaska communities have relied upon federal wastewater grants to partially fund their larger, more complex wastewater treatment and collection systems. However, in 1987 Congress phased out the 15 year old grant program and replaced it with state administered revolving loan funds. This action marked the beginning of a new era in financing wastewater projects. The Federal Wastewater Loan Program was the State's response to this change in national direction.

As part of its FY 93 budget request, the Department will pursue an appropriation of $1.6 million as its final capitalization request for the Federal Wastewater Loan Program. This appropriation will fulfill the State's matching requirements for capturing all remaining federal "seed" monies ($23 million) earmarked for the program.

After State Fiscal Year 1993, State appropriations will not be required to keep the program operating. It will be self-sustaining through loan repayments and will have the resources available to offer an average of $9.3 million in loans per year for community wastewater projects.

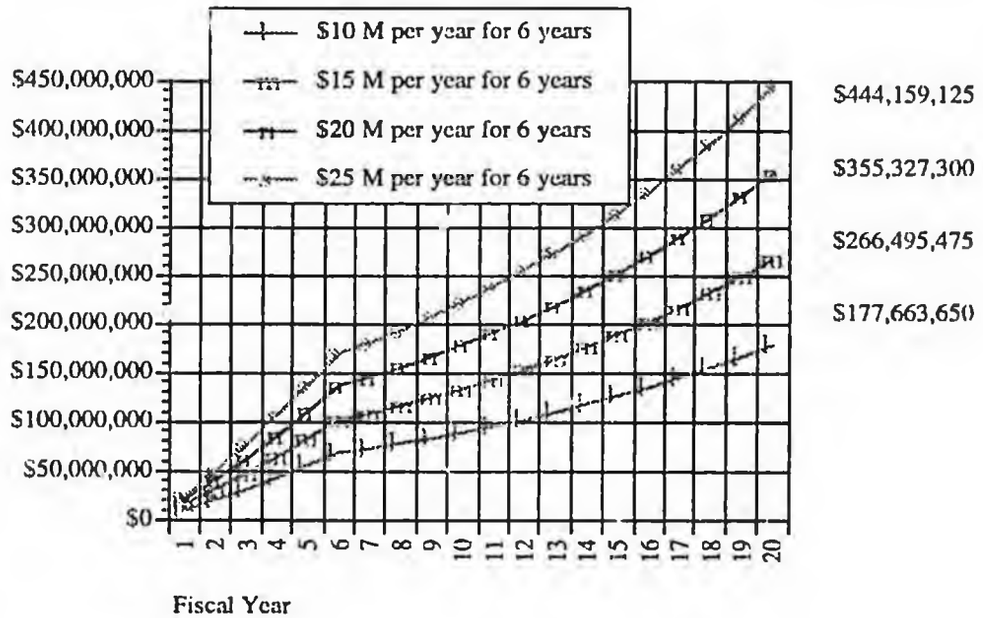
Objective 2 Capitalize the State Construction Loan Program.

For the next six years, the Department plans to request an appropriation to the State Construction Loan Program as part of its capital budget submission. Due to the large demand for financial assistance from this loan program (last year alone, community requests exceeded $95 million), a minimum capitalization of $10 million per year for six years is recommended. At this level, over $177.7 million in sanitation projects could be financed over twenty years.

If revenues are available, a more aggressive six year capitalization commitment is recommended.

AN ENDOWMENT FOR THE FUTURE.

The graph below compares the value of new projects which could be financed through the State Construction Loan Program over a twenty year period under four capitalization scenarios, where $10, $15, $20 and $25 million are appropriated each year for six years.



Under Scenario 1, the State capitalizes the fund at the rate of $10 million per year for six years. This commitment level would allow the fund to finance $177,663,650 worth of projects over a twenty year period.

As the capitalization level increases under the remaining three scenarios, the number of projects that can be funded over a twenty years and the average return to the revolving fund increase proportionately. Under each scenario the State would realize more that a 225 percent return on its initial investment after 20 years.

How would the program work?

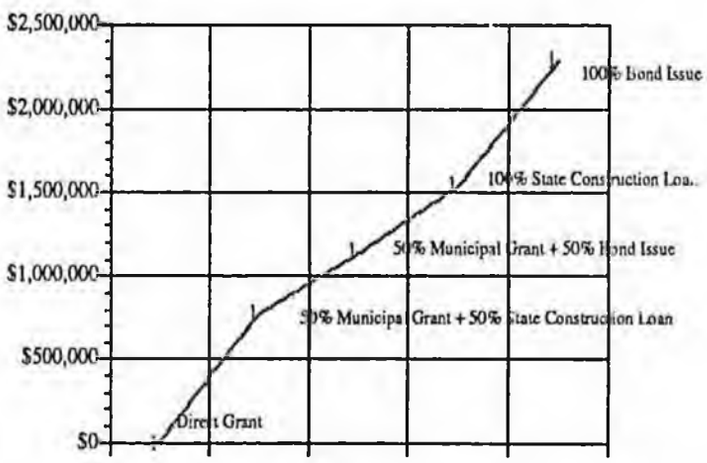
Like any revolving loan prog ,pecific amount is appropriated to capitalize the fund. These monies are then loaned to communities for a specific purpose-in this case, to plan, design and construct water, sewerage, and solid waste management projects. Once a project is completed, communities have one year to collect user fees or assessments before they begin repaying the loan. As monies are repaid, they are reloaned to finance additional projects. In this way, the fund continually recycles its assets. The cycle is perpetual, funds keep revolving, and a continually greater number of projects are constructed from the "seed" monies appropriated to capitalize the fund.

(insert graphic = overview of loan fund concept)

The program's financing terms are attractive. Communities may receive low interest loans through the program for up to 100 percent of costs associated with water, sewer, and solid waste projects. Interest rates are based on two-thirds of the Municipal Bond Index rate at the time a loan is made. Over the last two years, this has equalled an average interest rate of 4.5 percent. Loan repayment periods may be up to twenty years.

Although most of the State's larger communities can afford to repay a loan for 100 percent of a projects costs, some of the smaller cities do not have the population or economic base to repay a large loan. For these communities an equitable solution is a grant/loan mix. This "package" approach could be accomplished by combining State Construction Loans with Municipal Matching Grants.

A strategy to assess the appropriate grant/loan mix for these communities will be pursued as part of the Department's on-going planning effort. This effort will require analysis of several factors on a community-by-community basis including current user charges, operation and maintenance expenses, community population, per capita income, and the availability of various local revenue streams which could be dedicated to loan repayment.



Cost to Community to Construct a $1 Million Project Under 5 Funding Options

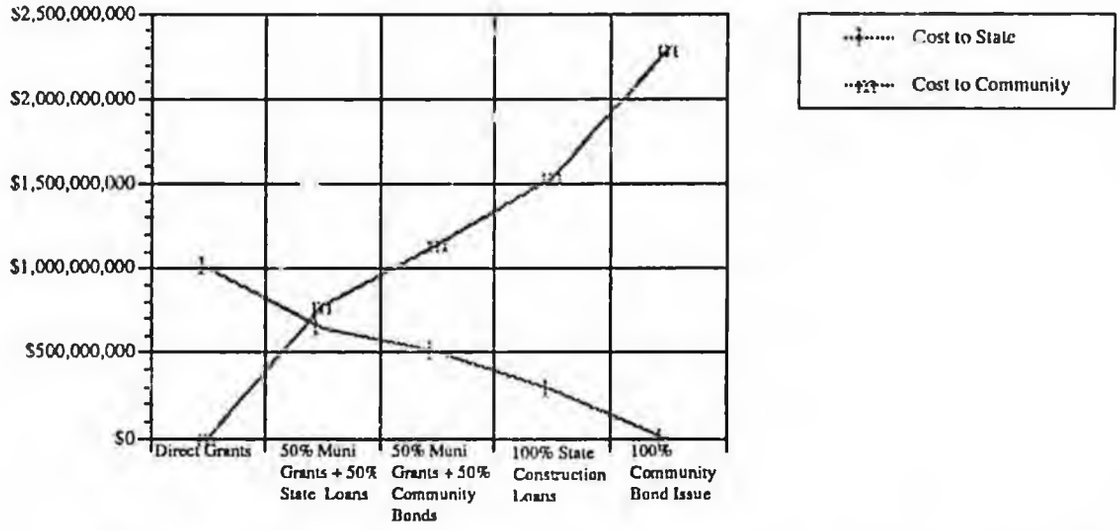
Objective 3 Promote an equitable solution to capital project financing.

Addressing the water, sewerage, and solid waste needs of the State's urban communities is estimated to cost in excess of $1 billion over the next 20 years. Unfortunately, local governments and the State have limited financial resources. So the question arises ... how will the planning, design and construction of these projects be financed?

The State can not do it alone. Revenues are declining and demands on budgets are already burdensome. Neither can communities afford to finance multi-million dollar projects. There are few revenue streams which local governments can dedicate to sanitation facility construction. Residential user fees are already steep in most communities and are earmarked for system operation, maintenance, and replacement costs.

The Department recommends an equitable division of financial responsibility between the State and local governments. The graph below compares the costs to communities and the State to construct $1 billion in projects over the next twenty years under five financing mechanisms: State Direct Grants, State Construction Loans; Municipal Bonds; Municipal Grants combined with State Construction Loans; and a 50/50 Municipal Grant/community bond combination.

Comparison of cost to communities and the State to Construct 1 Billion in projects over the next 20 years under 5 financing alternatives.



As shown above, the most equitable division of financial responsibility between the State and local governments would be provided by combining Municipal Grants and State Construction Loans. The grant/loan ratio could be changed based upon a community's financial capabilities. This approach is used in many States throughout the U.S. where grant/loan blends for water and sewer projects are based upon what is called an ability to pay index.

Objective 4 Increase funding through the Municipal Grants Program

The Department proposes a Municipal Grants capital budget commitment of $12 million per year for the next six years to help communities defray a portion of their water, sewer, and solid waste costs. The program leverages community participation on a dollar for dollar basis, so the reach of each dollar appropriated as a municipal grant is doubled when compared to direct grants. Since it has been proven that the success of a project depends on local participation, the Department will work to persuade local governments and the legislature to utilize the program as the State's primary grant mechanism for sanitation projects in larger communities. To assist cities and boroughs finance the local share of their project costs, low interest State Construction loans and Federal Wastewater loans will be offered. After capitalization of the Alaska Clean Water Fund, reliance on Municipal Grants as a funding mechanism will gradually decrease.

Objective 5 Establish a policy specifying the conditions under which Direct Grants may be used as a funding alternative.

In order to increase the efficiency of limited State revenues, it is recommended that Direct Grants only be used when communities (a) do not have the population or economic base to repay a low interest loan or to provide the match requirements of the Municipal Grants program, (b) have the proven managerial capability to administer a grant; (c) have in-house technical experts to oversee planning, design, and construction activities related to the project; (d) are willing to provide at least 10% of project costs or the equivalent in in-kind services; and (e) have proven the capability to operate and maintain a facility.

ACTION STRATEGY:
Promote a State/community partnership.

It is essential that community participation in a project go beyond signing a grant offer or passing a resolution. It is equally vital that the State's role transcends simply disbursing payments. Experience has shown that communities who actively work with the State and participate in the solution to their sanitation problems are more likely to adequately operate and maintain their facilities.

Objective 1 Local commitment to participate in funding.

Requiring a local funding commitment not only ensures that projects are a community priority, it also increases community interest in operating and maintaining projects in which they have made a financial investment. Historically, the matching requirement of the Municipal Grants program has been the catalyst for this commitment in urban communities. Now, the Alaska Clean Water Fund loan programs are also available to assist all urban communities participate in project costs.

Objective 2 Cooperative planning.

A successful project requires adequate and cooperative planning. Without planning, resources may not be available to complete construction; a community may get a project which is different from what they wanted; the facility constructed may not be feasible, practical, or the most cost effective alternative available; and the cost of operating and maintaining the system may be too expensive for the community. It is, therefore, vital that both local residents and individuals with experience and expertise are part of the planning team. Project cost estimates must be accurate or construction could be halted prior to completion. Public hearings should be held frequently during planning to ensure the community gets what it wants and has the information necessary to choose the most cost effective, feasible, and practical project alternative.

Cooperative Planning between communities and the Department is an integral part of successful projects. It is a requirement of Municipal Grants, Federal Wastewater Loans, and State Construction Loans.

Objective 3 Operation and maintenance.

In addition to a commitment to properly operate and maintain their facilities, funding for sanitation projects should be conditioned upon a local commitment to (a) hire operators certified at a level commensurate with the technical complexity of the facility, and (b) require operator participation in refresher courses and skill advancement training.

The Department will provide assistance for addressing these requirements by (a) ensuring communities are aware of operation and maintenance costs associated with a project prior to construction, (b) assisting communities to calculate user fees sufficient to finance operation and maintenance costs, and (c) by offering training, technical assistance, and certification programs for system operators.

ACTION STRATEGY:
Develop an inventory database for use as a planning tool.

Objective 1 Conduct a statewide survey of the existing facilities in incorporated cities and boroughs.

The Department will conduct surveys of incorporated cities and boroughs to develop a computerized inventory of the existing level of sanitation services provided in each community.

Objective 2 Ascertain the rehabilitation, replacement, and expansion needs of each community.

The Department will work with Municipalities to inspect their water, sewer, and solid waste facilities to document the condition of each and to ascertain rehabilitation, replacement, upgrade, and expansion needs. This information will be entered into the State's data base and will be used as an intricate component of an ongoing planning effort to assist communities in financing and constructing needed system improvements in the most systematic and efficient manner.

Objective 3 Examine the financial capability of each community.

Using information obtained from communities, the State Department of Labor, and the U.S. Census Bureau, the financial capabilities of each incorporated city and borough will be evaluated to determine the most equitable method of financing their sanitation needs. Economic variables which will be included in the assessment will include per capita income, current user fees, population base, average household size, bond rating, and extent of the community's outstanding debt.

Objective 4 Develop a 20 year analysis of community sanitation needs.

Objective 5 Develop a comprehensive long range facility funding plan.

GOALS AND STRATEGIES FOR SOLVING THE SANITATION NEEDS OF RURAL ALASKA

Providing Adequate Sanitation Services is Crucial to the Vitality, Public Health, and Economic Growth of Rural Alaska.

As Alaska looks to the future and a growing population, it is essential that we strive to provide services which protect the public health of our rural residents and lay a foundation for economic development opportunities.

Adequate water, sewerage, and solid waste services are cornerstones to realizing these goals.

As the twenty-first century nears, citizens in over half of the State's rural communities do not have piped water or flush toilets. Over ninety percent of the sewerage facilities in rural Alaska have been assessed by the federal government as inadequate. State and federal agencies have estimated the costs of providing acceptable sanitation facilities in every rural community to be $1.2 to $1.3 billion. These are startling statistics and they highlight the magnitude of the problem.

PUBLIC HEALTH

Without adequate water and sewerage facilities, personal hygiene is difficult, if not impossible. The lack of facilities to properly dispose of human waste, combined with insufficient quantities of safe water often result in threats to public health. Village residents experience a number of waterborne and communicable diseases which could be avoided if means to support improved personal hygiene and safe drinking water were available.

ECONOMIC DEVELOPMENT

The provision of acceptable sanitation services is often a prerequisite to economic development and growth. However, many villages lack these basic facilities. Numerous rural communities, for example, are unable to attract the seafood processing industry because their water and sewerage facilities do not meet standards required to support the industry. Likewise, the full potential of the tourism business may not be realized in rural Alaska since even the most seasoned traveler would prefer to visit an area where safe drinking water and flush toilets are available and refuse is consolidated out of sight. Another example of an economic development opportunity which demands sanitation infrastructure is port development. To attract shoreline businesses, not only do our ports and harbors need adequate docks and breakwaters, but adequate water and sewer are also critical. Under MARPOL, coastal communities must also provide solid waste facilities in order to engage in marine commerce, yet adequate facilities are not available in many of our more promising rural ports.

QUALITY OF LIFE

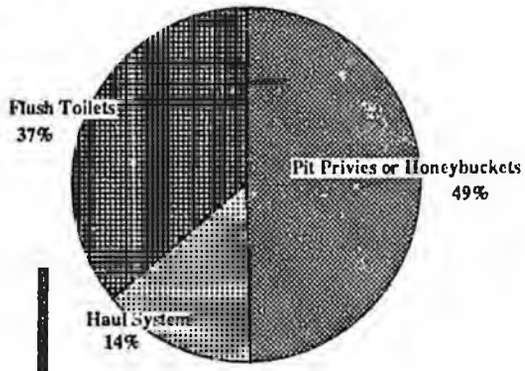
One of the indicators often used to measure the quality of life in a community is the public service infrastructure provided to residents. Carrying a sloshing bucket of human waste to pitch in a pond or hauling water from a watering point would not be acceptable to the vast majority of Americans, yet many rural Alaskans contend with these hardships daily. Providing water, sewerage, and solid waste services to every community by the year 2010 will allow all Alaskans to experience the quality of life taken for granted throughout the rest of the nation and much of the world.

CURRENT SANITATION CONDITIONS

Considerable progress has been made in constructing water, sewerage, and solid waste systems in rural areas, however, much remains to be done. Currently, approximately 40 percent of the State's rural communities provide piped water to residents' homes and only 37 percent have flush toilets.

WASTEWATER

EXISTING WASTEWATER SERVICE LEVELS IN RURAL ALASKA

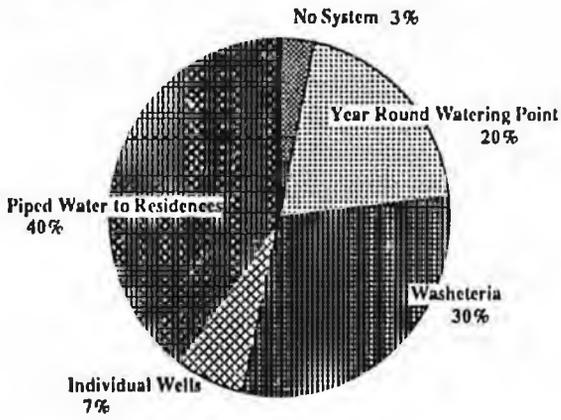


Sewage disposal methods in 63 percent of the State's villages are substandard to flushing toilets. Fourteen percent of the State's rural communities operate a **sewage haul system.** This basic collection/disposal service consists of residents hand-hauling filled honeybuckets to mobile dumpsters located throughout the community. The dumpsters are then hitched to a vehicle and hauled to a lagoon or pond for disposal. Forty-nine percent of Alaska's villages have service levels which are frequently compared to those in third world nations. These methods consist of **pit privies and individual honeybucket haul.** With the individual honeybucket haul method, a bucket serves as a toilet. Plastic garbage bags are used as a liner for the bucket. As the bucket fills, residents lift the plastic bag and its contents out of the bucket and hand carry the bag to a bunker, lagoon, tundra pond, landfill or, too frequently, undesignated dumping areas located within the residential area.

WATER

Water systems in rural Alaska vary greatly in complexity and service level. Approximately 40 percent of Alaska's villages provide residents with piped water; 30 percent own and operate a community **washeteria**; and 20 percent operate year round **watering points** which may vary from several spigots located throughout the village to a single building from which potable water is dispensed and hand carried by residents to their homes. In the remaining 10 percent, a community water system is not in place and water is **collected individually** by residents either from individual wells (7%) or from ice, streams, creeks, or by rain catchment (3%).

EXISTING WATER SERVICE LEVELS IN RURAL ALASKA



A CALL TO ACTION.

After twenty years of trying to address the sanitation needs of rural Alaska, it is clear there are no quick fix solutions.

The problem is multifaceted. First, our current selection process for determining which projects will receive grant assistance is short-sighted. Too often the State's annual sanitation funding plan is thrown together during the closing days of the legislative session based upon political criteria rather than need. A long term, stable funding approach has not been available.

Second, it has become clear that technology alone will not address the water, sewerage, and solid waste needs in rural Alaska. Competent operators , adequate user fees, proper accounting, and the support of a well managed community government are equally vital components to solving sanitation problems.

Third, demographic, economic, and climatic conditions make sanitation system construction and operation in rural Alaska among the most expensive and technically challenging in the world. Yet little research has been conducted to develop alternatives to expensive and complex piped systems capable of providing an equal level of service.

Finally, a long term strategic approach to solving rural sanitation needs has never been formulated. Rather, planning has been limited to a one year period and has been based solely upon the outcome of the State capital budget process. This process has proven ineffective.

As the first step toward addressing these and other related issues and instituting a more unified approach to solving the sanitation problems of rural Alaska, the Department recommends the formation of an Interagency Task Force. This group would act as the catalyst for advancing and refining the goals, strategies and objectives outlined on the following pages.

STATE BUDGET PLAN

As a vital step toward meeting the administration's ultimate goal of providing piped water and flush toilets in every Alaskan community, the Department proposes a preliminary six year capital budget plan.

- Provide washeterias and sewage haul systems in 48 of the State's 48 villages which now have Level I Drinking Water Systems (watering points or individual haul from non-treated sources).

  Estimated Cost: **$72 million**
  Required capital funding per year (for 6 years): **$12 million**

- Improve solid waste systems in 36 of the State's 210 villages to meet required EPA solid waste standards.

  Estimated Cost: **$18 million**
  Required capital funding per year (for 6 years): **$ 3 million**

- Upgrade piped systems in 12 of the State's 210 villages to comply with the new federal Surface Water Treatment Rule and effluent standards.

  Estimated Cost: **$42 million**
  Required capital funding per year (for 6 years): **$ 7 million**

TOTAL COST PER YEAR (for 6 years): **$22 million**

This preliminary six year budget plan will be further refined based upon the recommendations of the Interagency Task force, the availability of federal funding, and the success of innovative technologies as an alternative to conventional piped systems.

Implementing this budget plan will require a change to the State's current criteria system for prioritizing projects as well as a commitment by the State legislature to allocate capital funds in accordance with the plan. Further, a decision to provide water and wastewater services to all rural residents will require that the issue of State subsidies be addressed.