SJR

25

S NATE COMMITTEE REPC T
FIRST COMMITTEE OF REFERRAL

DATE: 2/26/93

FURTHER: HES

Date of 5-Day Notice: 3/25/93
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: 4-1-93

CRA Committee considered SJR 25

Urging the feder… …ation conditions in rural Alaska and to becom… IMPROVE WATER/SANITATION IN RURAL ALASKA …ning situation.

and recommends: and recommends it be replaced with

[X] replace with ________ CS SJR25 (CRA) and do pass

[ ] attaches amendment(s)

[X] same title
[ ] new title
[ ] technical title change (HB only)

[ ] adopts ____________ Letter of Intent

[ ] further referral to the ____________

[ ] do pass

[ ] do not pass

[ ] no recommendation

[X] individual recommendations

ø FN

FISCAL NOTE INFORMATION

Department	Date	Zero	Fiscal
* DEC	2/25/93	ø	previous
applies to CS			

Department	Date	Zero	Fiscal

[ ] Appropriation No Fiscal Note

[X] Governor's Bill with Previous Fiscal Notes (enter information above)

DO PASS:

Robin L. Taylor / dp
[illegible] Leman / [illegible]
Fred F. Zharoff / Zha
[illegible] Adams / Ada

OTHER RECOMMENDATIONS:

Drue E. Pearce Do Pass
Chair: Signature and Recommendation

FISCAL NOTE

No. 1

STATE OF ALASKA
1993 LEGISLATIVE SESSION

Bill Version: SJR 25
(S) Publish Date: 2-26-93

Revision Date:
Dept. Affected: Environmental Conservation
Title: Resolution urging the federal government to recognize the dire sanitation conditions in rural Alaska and to become a full partner with the State of Alaska in improving this health threatening situation.
BRU: Facility Construction & Operation
Component: Facility Construction & Operation
Sponsor: Governor Hickel
Requestor: Governor Hickel
COMPONENT SERIAL NO. 637

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY94	FY95	FY96	FY97	FY98	FY99
PERSONAL SERVICES	-0-	-0-	-0-	-0-	-0-	-0-
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE FUND SOURCE:	-	-	-	-	-	-

FUNDING: (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	-0-	-0-	-0-	-0-	-0-	-0-
PART-TIME	-0-	-0-	-0-	-0-	-0-	-0-
TEMPORARY	-0-	-0-	-0-	-0-	-0-	-0-

Estimate of current year (FY93) impact: $ -0-

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Keith Kelton, Director
Phone: 465-5135
Division: Facility Construction and Operation
Date: February 4, 1993

Approved by Commissioner: Annie Adair
Date: February 5, 1993
Agency: Alaska Department of Environmental Conservation

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(Rev 11/92) 93fisnote/OBR

WALTER J. HICKEL
GOVERNOR

P. O. Box 110001
Juneau, Alaska 99811-0001
(907) 465-3500

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

25

February 26, 1993

The Honorable Rick Halford
President of the Senate
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

Dear Mr. President:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a resolution concerning the implementation of the recommendation of the Alaska Sanitation Task Force.

The Alaska Sanitation Task Force was established by the Department of Environmental Conservation to examine the critical problems of inadequate water and sanitation facilities in rural Alaska and to provide recommendations for a comprehensive strategy for improving these conditions.

The task force consisted of 27 representatives from federal, state, Native, and regional organizations. Its findings established dramatically that many villages in rural Alaska have inadequate water and sewer facilities and that the lack of facilities has resulted in critical health and safety problems in rural Alaska.

Solving these health and safety problems will not be easy. The task force has provided a road map for their solution. The solution, though, will require the coordinated efforts of state, local, and federal governments, along with Native organizations and other groups.

This resolution requests the assistance of the President of the United States in obtaining the cooperation of the appropriate federal agencies in addressing these important problems. These federal agencies have responsibilities for assuring safe water and sanitation programs and facilities in rural Alaska.

The Department of Environmental Conservation has copies of the Alaska Sanitation Task Force report available for your review.

I urge your support and prompt action on this important resolution.

Sincerely,

Walter J. Hickel

Walter J. Hickel
Governor

Alaska State Legislature

SENATE COMMUNITY AND REGIONAL AFFAIRS COMMITTEE

Senator Randy Phillips, Chair
Senator Robin Taylor, Vice Chair
Senator Rick Halford
Senator Al Adams
Senator Fred Zharoff

SESSION:
State Capitol
Juneau, Ak 99801-1182
(907) 465-4989

INTERIM:
P. O. Box 142
Eagle River, Ak 99577
(907) 694-4949

Floor Comments, 4/14/93

1. Mr. President, I move adoption of CS SJR25(CRA) for consideration by the Senate.

2. One language change was made to CS SJR 25(CRA) on page 2, line 32 and page 3, line 1 as follows:

   "will enable accelerated transformation for residents in rural Alaska from substandard sanitation conditions."

3. Several new addressees were added along with their correct titles to page 3 of the resolution.

4. There were 5 do-pass recommendations by members of the Senate Community and Regional Affairs Committee.

Official Business

COMMITTEE:

SENATE COMMUNITY & REGIONAL AFFAIRS

DATE: 3/30/93

SIGN-IN

Subject of meeting:

SJR 25 IMPROVE WATER/SANITATION IN RURAL ALASKA

PLEASE PRINT!

NAME	ADDRESS (MAILING) & (ZIP)	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
1 CUSSELL HEATH	POBox 22151 Juneau 99802	463-3366	Alaska Environmental Lobby	Y
2 KEITH KELTON	ADEC	465-5125	Village Safe Water	
1 Willie Goodrum	City of Kotzebue	442-3401	City of Kotzebue	Y

ANCHORAGE DAILY NEWS

Sanitation
In Rural Alaska

Sept 20 - 24, 1992

BAD WATER

For Many Bush Alaskans, No Escape From Disease

BOB HALLINEN / Anchorage Daily News photos

Joe Uisok, in rubber rain suit and rubber boots, completes a dirty job in Kotlik: emptying a dumpster filled with waste from honeybuckets.

Third-World Sanitation In 20th-Century Alaska

Villagers drink from dirty wells, haul sewage by hand — and get sick because of it

By DAVID HULEN
Daily News reporter

HOOPER BAY — Morning on the tundra.

In dozens of plywood shacks bunched together on the edge of the Bering Sea, another day begins in one of Alaska's largest and fastest-growing Native communities.

Would you like a drink of water?

You do what Melba Joseph does. You tote a white 5-gallon bucket to the little shed behind city hall. You place your bucket under an outdoor spigot and pull a cord.

The water that pours out is the color of dark tea.

Do you want to flush your toilet?

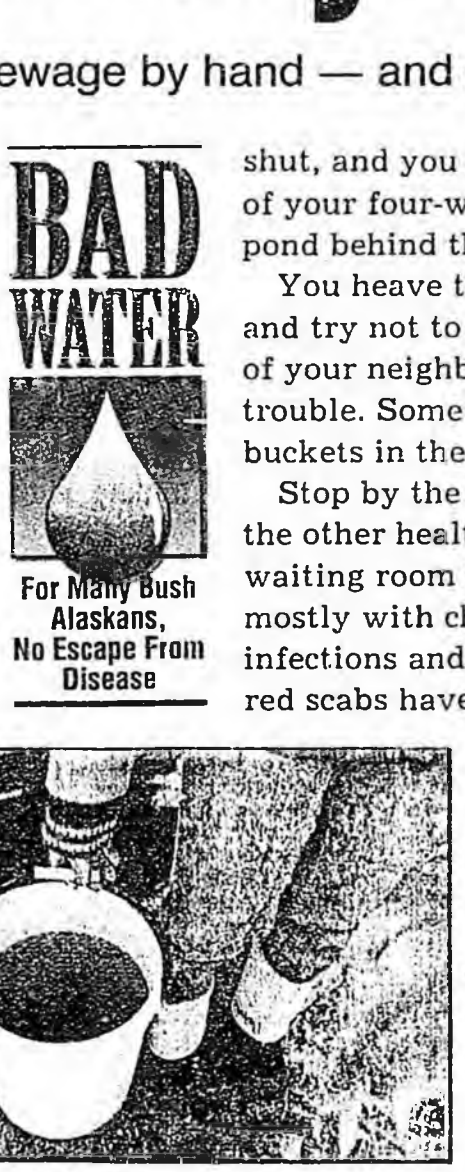
You do what Reuben Hill does. You walk into the bathroom and pick up the 5-gallon bucket with a toilet seat on top. The bucket is lined with a plastic bag, which is filled with urine and toilet paper and excrement. You tie the bag shut, and you strap the bucket on the back of your four-wheeler and drive to the fenced pond behind the school.

You heave the bag into a pile of sewage and try not to get any on your boots. Some of your neighbors haven't gone to such trouble. Some of them simply dump their buckets in the weeds.

Stop by the village clinic. Margie Bell and the other health aides are busy, as usual. The waiting room is filled much of the day, mostly with children. Many of them have ear infections and noses runny for so long that red scabs have formed under their nostrils.

Some have rashes on their faces. Flu runs rampant through the village much of the year.

Talk with some of the adults. Chances are good that sometime in their lives they've had hepatitis A or some other serious infectious disease.



For Many Bush Alaskans, No Escape From Disease

A Hooper Bay well produces this for drinking.

Please see Page A-6, SANITATION

SANITATION WOES

In many Alaska villages, modern amenities are common but water and sewage systems primitive and unhealthy

Continued from Page A-1

Step off the mail plane and walk into Hooper Bay — or any of dozens of other growing communities in rural Alaska.

Step into America's Third World.

SOMETIMES PEOPLE DIE

Three decades after the federal and state governments began spending hundreds of millions of dollars to bring modern housing, health care and schools to the most far-flung reaches of the Alaska Bush, daily life in most villages has been transformed.

Gone are killer waves of infectious disease. Even the smallest villages now have roomy, modern schools. Village housing, while still overcrowded in many places, has improved vastly from the 1950s and '60s.

But the quality of drinking water and the means of disposing of human sewage in dozens of Alaska communities remains on a par with the developing world, and is as primitive as anywhere in America.

More than 100 villages in Alaska — more than half of all rural communities — have no running water or sewer systems, according to the Alaska Department of Environmental Conservation. People in dozens of communities haul their sewage by hand from their homes and get drinking water from lakes and melted blocks of river ice.

While many villages have drinking water and waste-water systems that function well, others function only sporadically. Many villages with piped utilities have had chronic maintenance problems, with expensive freeze-ups and breakdowns. Dozens of village water systems are run by uncertified operators with little training and by local governments on the verge of insolvency.

People in Alaska routinely get sick because of bad water and from disease that spreads because of unsafe waste disposal.

Sometimes people die.

The problems are spread across the state:

• In Hooper Bay, a sprawling Yup'ik Eskimo village of nearly 1,000 people and nearly no indoor plumbing, a 41-year-old man died and dozens of neighbors fell ill this past spring after drinking water from a village well. Dangerous levels of fluoride, intended in small doses to reduce tooth decay, were accidentally pumped into a holding tank.

The village had a long history of water and sanitation problems, and like most villages, Hooper Bay didn't have a certified water operator. Also like many villages, Hooper Bay had done a spotty job of monitoring its water for contaminants, having gone nearly two years without submitting results of water monitoring to state regulators.

• In Kotlik, a village of 450 people near the mouth of the Yukon River, almost 80 people fell ill, including more than 40 who were hospitalized, when an epidemic of viral meningitis raced through the community in July 1990. The disease is spread by contact with human waste; the outbreak occurred after sewage oozed out of full underground pits and into muddy yards where children played.

Rural health authorities believe a similar outbreak could occur in any number of other villages.

• Nearly 2,000 Alaskans across the state, the bulk of them Natives in Interior and coastal villages, contracted hepatitis A in an epidemic that lasted from 1986 to 1991. Like viral meningitis, the disease often spreads through contact with human waste. A state government survey found that hepatitis A rates in 1988 — at the height of the epidemic — were twice as high in villages without running water.

• The clinics in 52 villages — the places where residents go to have wounds treated and sicknesses diagnosed — have no running water or flush toilets. Some health aides resort to heating water in microwave ovens so they can wash between patients, while others keep caldrons of boiling water on stoves.

• In the southeast Alaska village of Angoon, levels of bacteria and other organisms in the drinking water have been so high in recent years — and considered so unsafe by government agencies — that residents have been under repeated orders from the state to boil their water. Earlier this summer, raw sewage was standing in a street after leaking from pipes.

During the first six months of this year, people in 34 communities in Alaska were required for a month or longer to boil water because of bacterial contamination, according to the Department of Environmental Conservation and the U.S. Environmental Protection Agency.

• In Bethel — Alaska's eighth largest city with about 4,200 people — firefighters arrived at the scene of a grass fire earlier this summer and were disgusted to discover a field of shin-deep human waste. It was the product of years of illegal dumping of honeybuckets by residents of Bethel's poorest neighborhood, Lousetown, who don't have flush toilets and apparently weren't willing or able to pay the $35 monthly charge to have their buckets emptied each week by a city crew.

"In mainstream America, things like safe water and adequate sewage disposal, those things are just taken for granted," said Anne Walker, executive director of the Alaska Native Health Board, an Anchorage-based non-profit organization that represents the state's 12 regional Native health agencies.

"That sort of thing has become really the foundation for good public health. It goes back to Roman times: People wondered what was making everyone sick. It was the water. It's a basic fact today — communities need clean water.

"Here in Alaska, that's not the case at all. It's an everyday issue: You carry the water, you dispose of the honeybucket. People live with these risks to health.

"We have all this amazing medical technology and access to modern health care and all of these wonderful things. But in terms of water and sanitation, a lot of villages are still trying to make it into the 20th century."

BOB HALLINEN / Daily News photos

At the clinic in Hooper Bay, health aide Margie Bell, above, administers a blood test to Mary Lake, lying across her mother's lap. At left, David A. Smart, who had an ear infection, has his ear cleaned by health aide Ronald Friday.

BUCKETS IN, BUCKETS OUT

Since 1960, more than $1.3 billion has been spent by government agencies to bring modern water and sewer systems to the villages, according to figures compiled by state and federal agencies.

As a result, virtually every village in Alaska today has some sort of minimal, functioning water and sewer system — at least on paper.

The systems vary widely. There are the Cadillacs — systems like the underground "utilidor" water and sewer system in Barrow, built for $360 million in the early 1980s with oil boom money to serve about 4,000 people. Regional hubs like Kotzebue and Bethel, and dozens of smaller villages, also have piped systems.

Many Interior villages, where soil is much dryer than in coastal areas, have septic tanks outside of homes, and wells that pump a steady supply of safe water. Many of them function well most of the time. Some villages with roads have haul systems, where trucks deliver water and pump out sewage tanks.

But in scores of communities, the bulk of them clustered in coastal areas and in the Arctic, there is no running water, nor are there flush toilets or outhouses — just buckets in and buckets out.

In most of these villages, state and federal agencies have built central washeterias, each with washing machines and a well from which villagers draw water and carry it home. The water is often treated with chlorine, to kill bacteria, and fluoride, to reduce the risk of tooth decay.

In government reports describing the crudest village sewage systems, residents empty their full honeybuckets into covered containers scattered throughout the villages and city employees come around every few days to haul the full dumpsters to sewage lagoons. On paper, residents pay bills to keep the systems going. On paper, the containers don't spill as they're being carted off. On paper, children playing on village boardwalks don't have contact with sewage.

In reality, many of these systems aren't working very well, according to village residents, public health officials and other people familiar with them.

Honeybucket dumpsters fill up and spill over. They spill as they're carted off. In many villages, boardwalks and dumpsters are splattered with residue of lime, used to disinfect honeybucket spills.

Village governments — hit by steady cuts in state and federal funding and often with tiny local tax bases, little administrative expertise and residents unwilling or unable to pay for services — often can't afford to keep dumpsters emptied.

Sometimes village water operators turn off chemicals that make drinking water safer because residents don't like the taste.

And villages with piped utilities have problems as well.

Systems have been built, broken, then rebuilt. Some systems have broken and have only partly been replaced. In the Interior village of Venetie, an extensive, piped utility system, complete with fire hydrants, was built, then froze up in one of the first winters. It's never been fixed, and today people use their bathtubs as laundry bins.

"I think there's been a lot of systems break down and communities just walk away," said Dennis Degross, an Anchorage public health consultant and former head of the Alaska Native Health Board.

"So many of 'em, they're just too damned expensive to operate. You build a $1 million system for a community of 400 people, but maintaining them and keeping them running is a whole other story.

"In the Midwest, the landmarks of a forgotten era are those old grain silos. Here in Alaska, I'm afraid someday it might be these water and sewer systems that are just too damn expensive to operate."

THE HEPATITIS THREAT

"As long as everything's working just right, the village water and sewer systems are functional," said Dr. Donn Kruse, medical director of the Bethel-based Yukon-Kuskokwim Health Corp. Of the 48 villages served by the agency, 10 have piped systems, with the rest relying on honeybuckets and central watering points.

"They still require an amount of energy and activity that no one in Anchorage would tolerate. When people move from the villages into town, and then return to the village again, that's what you hear: 'It's a lot of work.' But the water coming out of the well is safe and sewage has an appropriate spot to go. It's a functional system.

"The thing is, any number of factors can knock the whole system out of whack and cause considerable public health risk. It happens pretty easily and it happens all the time."

For example, Kruse said, water is typically brought home from the village well and dumped into a 30-gallon plastic garbage pail in the kitchen — enough water to last a family with several children a few days. But it doesn't stay pure for long. A thirsty child who hasn't washed his hands because there's no faucet or hot water dips a pitcher into the barrel. The barrel is contaminated.

When people live without a regular supply of clean water, or have regular contact with human sewage and can't wash their hands, chances increase dramatically that they will become sick. On this, there is little disagreement among doctors and other public health authorities.

But just how much healthier communities with modern water and sewer systems are is hard to measure. It's never really been studied in Alaska, and many infectious diseases that have plagued the Bush — such as tuberculosis, hepatitis B and often-fatal bacterial meningitis — have little, if anything, to do with water and sanitation. Their spread has much more to do with overcrowded living conditions.

But public health officials in Alaska believe there's at least a partial

BOB HALLINEN / Anchorage Daily News

Margie Bell plays with her daughter, Nellie, after helping other Hooper Bay children with ear infections, flu and other ailments at the village clinic, where she is a health aide.

BAD WATER

For Many Bush Alaskans, No Escape From Disease

THE SERIES

TODAY

The quality of drinking water and the means of disposing of human sewage in dozens of Alaska communities remains on a par with the developing world and is as primitive as anywhere in America. Sickness often results.

MONDAY

Human sewage leaked from underground pits two summers ago in Kotlik, sparking an epidemic of viral meningitis. It shows what can happen in an Alaska village that lacks modern water and sewer facilities.

TUESDAY

Even when a village has running water, there is no guarantee that the system is functioning safely. Take the case of Dominic Smith, who died of fluoride poisoning in the spring of this year in Hooper Bay.

WEDNESDAY

More than $1.3 billion has been spent during the past 20 years on water and sewer systems in rural Alaska. Yet until recently, much less attention was paid to maintaining village systems once they were built.

THURSDAY

Ten years ago the villagers of Emmonak decided they'd had enough. They were sick — literally — of not having water and sewer systems. They took action, and everything is working just fine now.

nnection between primitive water and sewer systems in the Bush and high rates of other disease — in some cases a direct connection.

"It's a significant, real health problem," said Paul Hansen, health services director of the Maniilaq Association, the health agency that serves 11 mostly Native villages in northwest Alaska.

"It's hard to overstate the relationship between simply being able to wash your hands and the spread of disease. If you don't have water, it makes washing your hands very *difficult*. Most people just aren't going to be willing to haul 50 gallons of water a day to their house so we'll have enough for everyone to always be washing their hands."

The most common disease with the most direct link to bad water and sewer in Alaska is probably hepatitis A, which every few years races through pockets of the Bush. It's rarely fatal, but leaves people sick for weeks at a time, especially children. Its symptoms include fever and severe abdominal pain.

Alaska is hardly the only place in America with outbreaks of hepatitis A, but rural Alaska — especially Native communities — has a disproportionately high rate. In the most recent epidemic, from 1986 to '91, about 1,800 Alaskans — two-thirds of them Native — were diagnosed with hepatitis A. Overall, Natives make up only about 15 percent of the state population. Officials think the number of cases of hepatitis A was seriously underreported.

A person exposed to hepatitis A develops immunity that lasts a lifetime. So it comes and goes in waves, with each wave hitting a new generation of children hardest. Because so many rural Alaskans were exposed in the late 1980s, the number of cases has dropped substantially the past two years. Doctors expect another wave to begin by the mid-1990s, although they're hopeful an effective vaccine — now being tested in Alaska hospitals — can be developed before then.

Aside from hepatitis A, simple infections — such as strep throat and colds and flu, which lead to ear infections, and skin infections like impetigo — often spread faster because of a lack of sanitary conditions in villages, according to several doctors. Rural Alaska, especially the Yukon-Kuskokwim Delta, has some of the highest rates of influenza and chronic ear infections in America, studies by the U.S. Indian Health Service have shown. Giardia, an intestinal parasite spread through untreated water, has been a recurring problem in rural Alaska as well.

'NOT NEARLY AS BAD'

"People who come up from outside Alaska are shocked all the time," said Perry Eaton, a Kodiak Native and president of the Community Enterprise Development Corp., a cooperative which works to develop business in rural Alaska.

"I've taken slides of villages out east and I ask groups of people, 'Where was this picture taken?' They say Russia or Eastern Europe, Norway, Finland, someplace like that.

"They can't believe it's America."

In a report to Congress in May, the U.S. Public Health Service said that almost 60 percent of the water and sewer needs in Native American communities nationally — more than $1 billion worth of projects — are in Alaska.

"There are problems like this, really, throughout Indian country," said Gary Hartz, environmental health director for the Public Health Service in Washington, D.C.

"Alaska isn't the only place. I mean, I've been in Navajo country where people have to use horses to haul water miles to their houses," Hartz said.

And while many Alaska water and sewer systems are not appreciably different from those in Third World nations, such as in Asia or Central America, overall environmental health conditions are far better here.

Please see Page A-9, SANITATION

SEWAGE DISPOSAL IN THE BUSH

Level of Sewer Service in Villages (organized by regional corporation areas)

KEY

Percent of villages with level A or B service

Percent of villages with level C, D, or E service

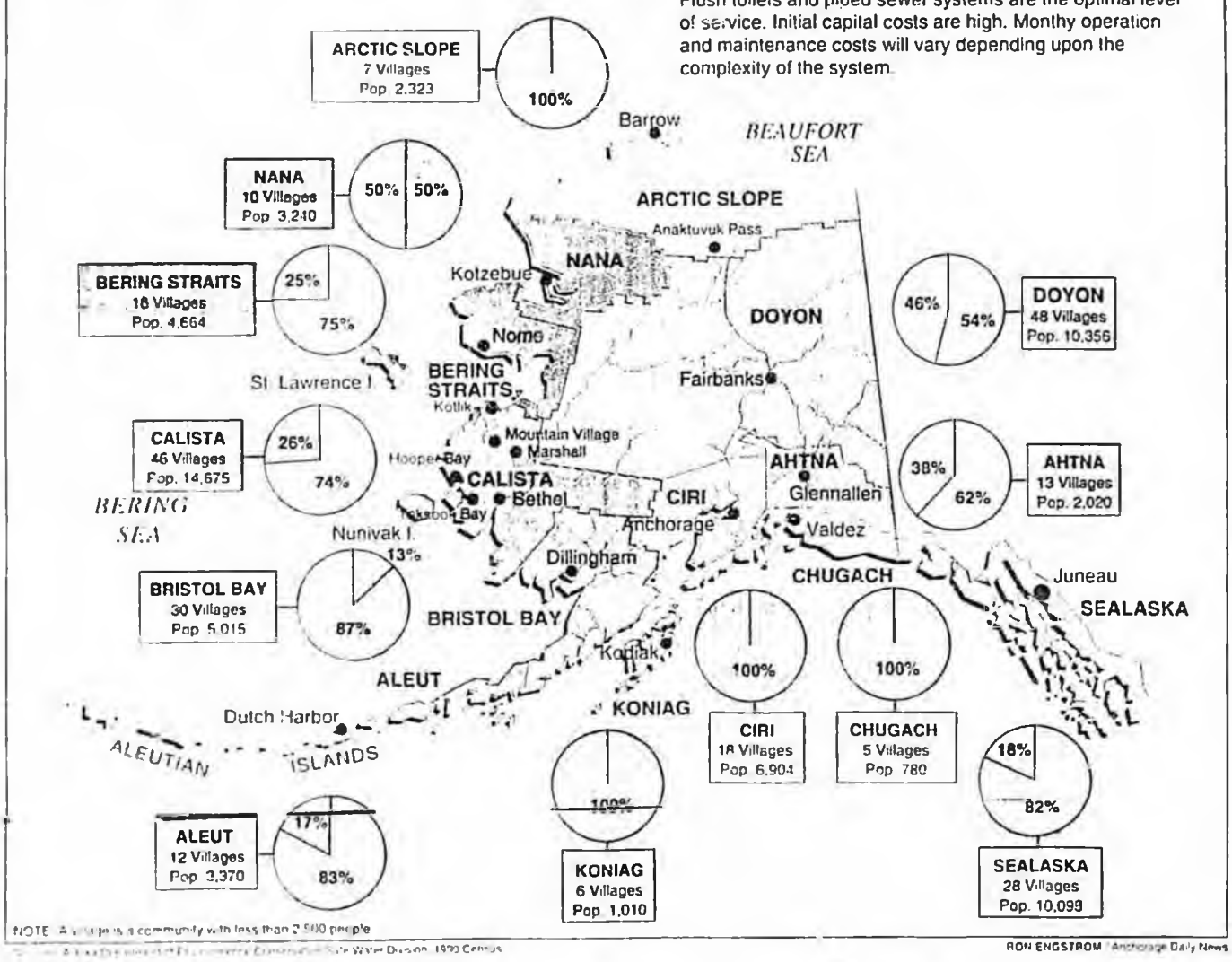
Level A:
The lowest level of service, principally pit toilets and honeybuckets. Honeybuckets are either disposed of immediately outside the residence, carried and emptied into nearby pit bunkers, or emptied in a frozen river, ocean, tundra pond or sewage lagoon.

Level B:
Includes a community haul service for the disposal of sewage. Residents empty honeybuckets into nearby honeybucket bins, which are then hauled to a sewage lagoon. Operation and maintenance expenses are incurred.

Level C:
Includes flush toilets and sewage truck haul. Holding tanks collect wastewater, which is subsequently emptied by a collection vehicle (pump or vacuum system). Operation and maintenance costs are incurred.

Level D:
Includes flush toilets and septic tank systems. Operation and maintenance costs are much lower than level C because septic tanks are emptied only as necessary to remove sludge accumulation.

Level E:
Flush toilets and piped sewer systems are the optimal level of service. Initial capital costs are high. Monthy operation and maintenance costs will vary depending upon the complexity of the system.



NOTE: A village is a community with less than 2,500 people.

Source: Alaska Department of Environmental Conservation, Rural Water Division, 1990 Census

RON ENGSTROM / Anchorage Daily News

"It's hard to overstate the relationship between simply being able to wash your hands and the spread of disease."

— Paul Hansen, health services director of the Maniilaq Association

BAD WATER

For Many Bush Alaskans, No Escape From Disease

BOB HALLINEN / Anchorage Daily News

The kitchen floor is the place for duck cleaning at Margie Bell's home in Hooper Bay. Helping her are granddaughter Marguirita Bell and daughter, Michelle.

SANITATION: Bush suffers hepatitis A

Continued from Page A-7

according to a variety of public health authorities. Violence — much of it alcohol-related — along with cancer and heart disease have for the most part replaced infectious diseases as the leading killers in Alaska villages.

"You look at what's happening in rural Alaska, and it's not nearly as bad as it used to be," said Dr. Brian McMahon, a doctor at the Alaska Native Medical Center in Anchorage and a specialist in hepatitis.

"We don't see kids in Alaska dying of diarrhea like in the developing world, for example. It's nowhere like that. I think clean water would be a great thing to have in the villages. It would make life easier and healthier, but it's not like India and Africa out there."

Still, substandard water and sewage-disposal systems continue to pose a significant public health threat in Alaska, he and others said.

"With something like hepatitis A, as long as there's not a good way for people to keep clean, you're going to see it," McMahon said.

PROBLEM OF MAINTENANCE

"Technically, we can build a system anywhere," said Jim Crum of the U.S. Public Health Service. "You give us enough money, and from an engineering standpoint, we can do it. It may cost 10 million bucks, but we can do it."

As the federal agency's chief of the Division of Sanitation Facilities for Alaska, Crum has overseen hundreds of millions of dollars in bush water and sewer projects.

"The question, really, is whether the mechanism is in place on a community level to keep it operating. What we have found is that in some places, the answer is yes, and in others . . . well, it hasn't worked so well."

Rural Alaska has some of the harshest physical environments in the world. Combined with widely isolated villages and low supplies of fresh ground water in many parts of the state, it makes construction expensive.

Some villagers complain that government agencies have done too little to help village residents maintain systems, or have not given them enough of a voice in designing them to be practical in the first place.

Government officials agree big mistakes have been made in the past. Such work had never been done in such harsh climates, they say, and they learned as they went along.

More and more, state and federal officials are saying that agencies cannot solve village water and sewer problems without a commitment from local communities to make systems work.

ALTERNATIVES SOUGHT

It's a complicated, expensive problem with few, if any, easy answers. A report last year by the Alaska Department of Community and Regional Affairs estimated that it will cost at least $1 billion more to fix the existing problems.

For a while, in the 1960s and '70s, there was a feeling among many government officials and Native leaders that it would only be a matter of time before every village had its own piped systems.

Today, though, government officials, health authorities and even village residents are asking whether it makes sense to build conventional systems in every village.

According to the state Department of Environmental Conservation, a typical piped village water and sewer system, once built, costs at least $100 a month per household to maintain. The cost in Anchorage is about $45. A survey by state government last year in more than 40 villages found that residents, on average, said they could afford only $55 a month, with a sizable number saying they were unable to pay anything.

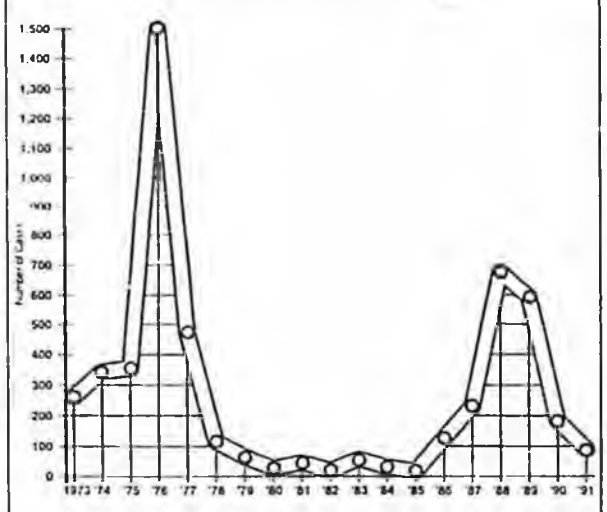
Agencies and village officials are looking for alternatives. Among them are systems that involve hauling water to homes and hauling away waste from household holding tanks. Such systems are used extensively in Canada, but are expensive to operate.

"I don't think it's realistic for every village to expect to have conventional piped systems," said Walker, director of the Native Health Board, which lobbies the legislature and Congress for increased funding of rural systems.

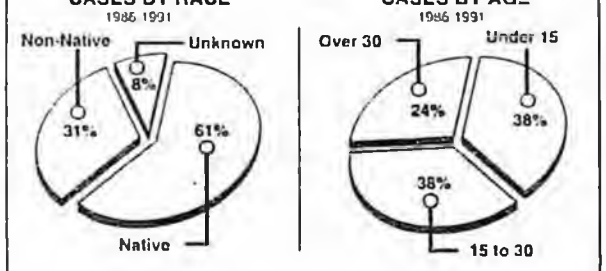
"What we really have to start asking in the next 10 years is: Can villages really support these systems? Are they willing to pay for it? How much are they willing to pay for it? All of us have to be asking these questions, and people in the village are going to have to answer them."

HEPATITIS A IN ALAKSA

A cyclical disease...



... most likely to affect young Natives



... Villages with poor sewage service may be most vulnerable

Based upon cases reported in 1988*

LEVEL OF SERVICE	NUMBER OF VILLAGES	NUMBER OF CASES
Poorest (Honeybuckets)	27	218
Better (Flush toilets)	15	82

* Statistics may be misleading because: (1) The area reporting may not be where the individual contracted the disease. (2) Level of sewer service may not be the sole contributor to the epidemic outbreak. (3) Many cases go unreported.

Sources: State Department of Health and Social Services, Division of Public Health, Section of Epidemiology; Department of Environmental Conservation; U.S. Public Health Service

RON ENGSTROM / Anchorage Daily News

DISEASES IN THE BUSH

Common infectious diseases that could be linked to the lack of clean water sources or poor sewage disposal

Viral Hepatitis

Types A and B

Hepatitis is a disease that involves inflammation of the liver.

SYMPTOMS: Weakness, loss of appetite, nausea, vomiting and jaundice, a yellowish discoloration of the skin and tissues.

TYPES: There are two main forms of viral hepatitis, hepatitis A, or infectious hepatitis, and hepatitis B, or serum hepatitis. They are caused by two different viruses. Hepatitis also may result from other viruses or a combination of two different viruses.

HEPATITIS A: The most common form of hepatitis in bush communities is caused by eating contaminated food or drinking contaminated water. Symptoms appear about four weeks later. Most cases of hepatitis A last two to six weeks. The symptoms may be lessened – even prevented – if injections of gamma globulin, a class of antibiotics that helps the body's immune system, are administered within a week of exposure to the virus.

HEPATITIS B: This type is spread mainly by the use of improperly sterilized medical instruments, hypodermic needles shared by drug abusers and sexual contact with infected persons. Vaccines that protect against hepatitis B became available during the 1980s.

Meningitis

Viral and Bacterial

Meningitis is a disease that affects the membranes and fluids surrounding the brain and spinal cord.

TYPES: Bacterial and viral meningitis are the two most common forms of the disease. Meningitis can attack people of all ages, but it most frequently strikes infants and children. Most victims recover completely.

SYMPTOMS OF VIRAL AND BACTERIAL MENINGITIS: Bacterial meningitis, if untreated, can cause severe brain damage and even death. It can also result in deafness, paralysis, muscle weakness, mental retardation, blindness and changes in behavior. In most cases, the bacteria or viruses that cause meningitis inhabit the respiratory organs. The microbes pass into the bloodstream and are carried to the brain where they infect the brain membrane and the cerebrospinal fluids. In general, the symptoms of bacterial meningitis are more severe than those of viral meningitis. Among infants and children, the symptoms include fever, nausea, vomiting, loss of appetite and sleepiness. Some children experience convulsions or uncontrollable jerking of the limbs. Among older children and adults symptoms often include headache, back pain, muscle aches, sensitivity to light, and stiffness of the neck.

TREATMENT: Doctors diagnose meningitis by inserting a needle between the vertebrae in lower back to obtain a sample of the cerebrospinal fluid. The sample is then tested for bacterium or viruses. No specific treatment is effective against viral meningitis. Bacterial meningitis is treated with antibiotics. Other forms of contagious meningitis can be treated with an antibiotic to prevent its spread. Vaccines also protect against the occurrence of certain types of bacterial meningitis. There are no effective means of preventing viral meningitis.

Source: The World Book Encyclopedia 1990 Edition

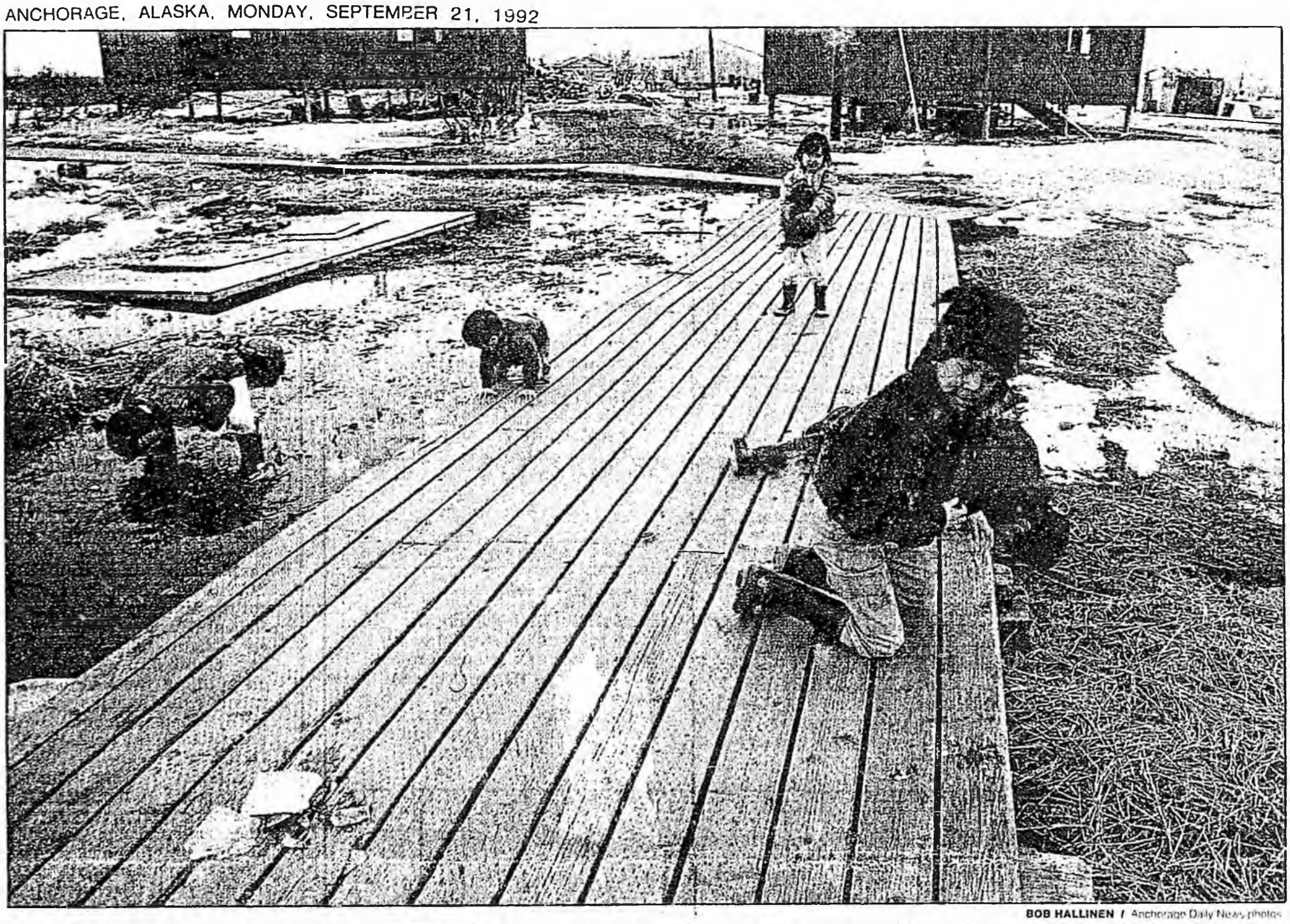
RON ENGSTROM / Anchorage Daily News

"We have all this amazing medical technology and access to modern health care. . . . But in terms of water and sanitation, a lot of villages are still trying to make it into the 20th century."

— Anne Walker, executive director Alaska Native Health Board

PAUL SOUDERS / Anchorage Daily News

Anne Walker of the Alaska Native Health Board discusses the water and sewer "risks" of the Bush.



BOB HALLINEN / Anchorage Daily News photos

Waste from honeybuckets often spills on boardwalks where children play in Kotlik. Joe Uisok, below, has the job of hauling collection bins.

Honeybuckets Leave A Trail Of Sickness

Viral meningitis epidemic in Kotlik shows how health of any village can go haywire

By DAVID HULEN
Daily News reporter

BAD WATER

For Many Bush Alaskans, No Escape From Disease

PART 2

KOTLIK — Children were the first to get sick. Then adults. By that first weekend, airplanes were buzzing night and day over the summer tundra on emergency runs to the hospital in Bethel, 190 miles away.

The epidemic hit in the summer of 1990, and was the worst mass-sickness to strike an Alaska village in many years.

The cause? Two leaky underground pits filled with human sewage.

Nearly 80 people in the village — almost a quarter of the population at the time -- eventually were stricken with viral meningitis, an extremely infectious, extraordinarily painful ailment that can be fatal when left untreated.

Villagers suffered fever, nausea, dehydration, migraine headaches and necks so sore they could hardly move. Some people became so sensitive to light that they couldn't look out of their windows without getting ill.

Sixty people were eventually evacuated for emergency treatment.

"It was like a plague," said Angela Prince, who had three children, including a newborn, wind up in the hospital.

Please see Page A-4, HONEYBUCKETS

HONEYBUCKETS

House to dumpster to pond — with spills on the way

Continued from Page A-1

"We sat there in the hospital and kept seeing more and more people from Kotlik being brought in. It felt kind of like the world was ending for us."

The Kotlik epidemic was one of the worst examples of what can happen in an Alaska village that lacks modern water and sewer facilities.

In village Alaska in 1992, there are fax machines and cable television and million-dollar schools and microwave ovens. Yet more than 100 communities in the Bush — almost half of all the organized communities in Alaska — have no running water or flush toilets.

People get sick because of primitive water and sewer systems.

It happened here in Kotlik, and doctors and others familiar with the villages believe it will almost certainly happen again.

CONTACT WITH HUMAN WASTE

Viral meningitis, an inflammation of the membranes that line the spinal cord and brain, is transmitted by contact with human sewage. It spreads through contaminated food and water, often by people who have germs on their hands, don't wash, then contaminate food or drink consumed by others.

In Kotlik, as in dozens of other villages in rural Alaska, many people have daily contact with human waste. With no running water, washing hands is difficult.

People don't have toilets here. They have honeybuckets — plastic pails placed in bathrooms and emptied by hand.

Until recently, Kotlik's full honeybuckets were dumped into underground bunkers — lidded pits dug into the permafrost and scattered between homes throughout the village. The bunkers got full. Their contents oozed into the muddy summer soil, and children played in puddles nearby. The children tracked mud into houses, where babies crawled on floors.

The disease raced through the village. Whole families got sick. Similar symptoms began showing up in neighboring communities. Health authorities braced for a major epidemic.

Somehow, the disease was generally isolated to Kotlik. Aside from a few cases, the disease didn't spread to the cluster of other villages at the mouth of the Yukon River. Doctors and other health workers today talk of heroic measures taken by villagers after the epidemic hit — compulsive hand-washing, wearing rubber gloves even at wedding and funeral potlatches, postponing trips out of the village during the busiest season of the year — and amazement that the disease didn't spread throughout the whole region.

But the Kotlik epidemic, they believe, demonstrates how quickly the health of a community can go haywire in growing communities with some of the crudest water and sanitation systems in America.

"The same thing could basically happen at any time in any village out here," said Dr. Donn Kruse, medical director for the Yukon-Kuskokwim Health Corp., a non-profit agency responsible for health care in Kotlik and 47 other Yup'ik communities.

"It could happen again tomorrow," he said. "Including in Kotlik."

EMPTYING THE HONEYBUCKET

It's a cloudy weekday morning in the table-flat world of the Yukon Delta. A cool wind wafts in from the Bering Sea a few miles to the west. Kotlik, spread out on both banks of a Yukon tributary, is waking up. The two general stores are opening. Four-wheelers buzz along the narrow boardwalks that serve as sidewalks and streets over the soggy tundra.

Inside one of the boxy, prefab houses that look like pieces from a Monopoly game, John Okitkun decides it's time to carry out the family's honeybucket. Six people live here: his parents, his sister, himself, his wife and their toddler. The honeybucket has to be emptied two or three times a week.

Okitkun picks up the full bucket in the bathroom and walks out of the house, past his daughter in the hallway, past the pile of fresh-caught pike on the porch floor and out into the morning. He's careful not to spill.

He's followed by a half dozen children riding bikes and racing up and down the boardwalk. Okitkun pauses at a red polyethylene dumpster, one of 23 scattered around the village. He opens the lid and dumps the bucket. The waist-high dumpster and the boardwalk around it are covered with the residue from a lime and water mixture used to disinfect the area after past spills.

The stench of sewage is nearly overwhelming.

HAULING OFF THE WASTE

At the other end of the village, it's time for the Kotlik honeybucket man to suit up and head off to work.

KOTLIK

- Population: 461
- Total housing units: 110 – 44.5% have one or no bedrooms
- Households lacking complete plumbing and kitchen facilities: 94.5%
- Elevation: 5 feet at the airstrip
- Water: In the 1960's the U.S. Public Health Service built a 100,000 gallon wood-stave water storage tank which was filled twice yearly from the Kotlik Slough. The tank has not been used since an outbreak of hepatitis in late 1975. At present there is no central water distribution system. Residents obtain water from a central well as well as collecting rainwater, hauling water from the slough in summer and by melting ice in the winter.
- Sewage: There is no community sewage system in Kotlik. At present, individual sewage waste is collected in honeybuckets and dumped in containers at various sites sites throughout the community. The village employs 2 men who haul the containers to a sewage lagoon.

Sources: Alaska Department of Community and Regional Affairs, 1990 Census

RON ENGSTROM / Anchorage Daily News

Joe Uisok pulls on rubber boots, a rubber rain suit, rubber gloves and, finally, a paper surgical mask. Then he gets on his four-wheeler or snowmachine and starts his morning rounds.

Uisok is paid $12 an hour to drive through the village and haul away the 80-gallon plastic dumpsters. He carts them to a fenced pond on the outskirts of the village, where the waste naturally decomposes. He tries not to spill, but it's difficult, especially in winter when the boardwalks are covered with a couple of feet of snow and are bumpy and the dumpsters haven't yet frozen. When they are solid, it's the easiest. Villagers call the frozen mess a poopsicle.

Kotlik was one of the first villages in Alaska to have such a honeybucket haul system. Set up by the U.S. Public Health Service and the Alaska Department of Environmental Conservation after the meningitis outbreak, it is an improvement over the underground bunkers, and far cheaper than a piped sewer system.

People here used to simply empty their honeybuckets in the alder bushes behind their houses. In the 1960s and '70s, the federal government built the underground bunkers. But by the mid-1980s, the bunkers in Kotlik and in many other villages were filling up fast.

For many villages like Kotlik, installing piped utilities is expensive or physically difficult because of poor soil conditions, permafrost or lack of drinkable ground water.

A piped sewer system for Kotlik's 450 people would cost about $11 million to build, according to estimates by the state and federal governments.

The solution, at least for now, has been the haul system, which some government health authorities believe is a low-cost answer for many villages too poor to maintain a piped system, or where conditions make one too expensive to build.

AVOIDING WASTE IS HARD

Kotlik residents haul their drinking water home from a well outside the government-built washeteria. It has clothes washers and dryers ($3.50 a load), showers, flush toilets, and men's and women's saunas, which tend to be packed every evening. It's a social gathering place as well as a way to stay clean in a village with no running water.

Aside from the washeteria, the only other flush toilets and running water are at the school complex. The teachers, almost all of whom are from somewhere else, live in modern apartments.

But most people in Kotlik still have daily contact with human waste in their homes. They carry their honeybuckets from their houses to the dumpsters, and sometimes spill them on the boardwalk. Flies swarm around the containers. Sometimes, the dumpsters get so full that they spill as they're being hauled off.

Some communities with systems like Kotlik's have had trouble keeping workers on the payroll. The work is just too much for them. Some honeybucket haulers have been ridiculed by their neighbors, and others are avoided because they are thought to be disease carriers. Some cash-poor villages can't afford to empty the dumpsters until they are overflowing, according to residents and health authorities.

Weekly bingo games pay for part of the salaries of Kotlik's two honeybucket haulers.

Uisok said he'd rather be doing something else with his days. But there aren't that many opportunities for a young family man in Kotlik. He said he's seen what can happen in his village when there's virtually no sanitation system at all.

"Someone's got to do it," he said. So he puts on his rubber suit and drives off with another load of Kotlik's sewage.

DANGER OUTSIDE THE DOOR

The worst leaky bunker was right out front of Angela Prince's house. Like the others in town, the bunker is now boarded up, but until earlier this summer, it continued to leak.

It was covered in a pool of foamy brown water. The smell of sewage was strong. A tricycle was overturned in the puddle over the bunker, and a blue ball floated in it. Children ran up and down the boardwalk over the mud.

"I worry about it sometimes," Prince said. "It's not the best situation."

Three of her five children were among the first in the village to fall sick to meningitis two summers ago. Her 6-year-old daughter was so sore she couldn't stand. Her newborn daughter got it, too. She appeared to get well, then developed symptoms again.

Prince's children also have had hepatitis A, which spreads like viral meningitis, from contact with human waste. They were part of a hepatitis A epidemic that hit Alaska – especially the Bush — in the late 1980s.

Prince apologizes for the mess of her three-room house. Her husband, like most men in the village, has been out hunting waterfowl and she's been busy putting up food, and there hasn't been much time to clean. Three young children race through the kitchen with muddy boots. Prince's 2-year-old, Diana, toddles through the mud, clutching a baby bottle.

She knows her children should wash their hands, she said. But in a house with no plumbing, it's difficult. She keeps out a basin with soap, but it's hard to change the water every time someone washes.

Like everyone else in the village, to get hot water — to give the baby a bath, to wash hands before dinner — she must heat a pot on the stove. Like everyone in the village, sometimes she does, sometimes she doesn't.

Sometimes she and her husband talk about moving to a bigger village, maybe even Anchorage. She doesn't know how they'd support themselves. Their families are here, she said.

Kotlik has a few jobs: store clerks, school janitors, city workers, summer construction when there's something to build. As in other villages, many families here depend on food stamps or other government assistance. As in other villages, the thing that separates many families from poverty is subsistence hunting, fishing and gathering.

Subsistence makes it easier to survive here, Prince said, and it provides a connection to other people and a rich Yup'ik cultural tradition. She said she doubts her family will really ever move.

"This is our home," Prince said.

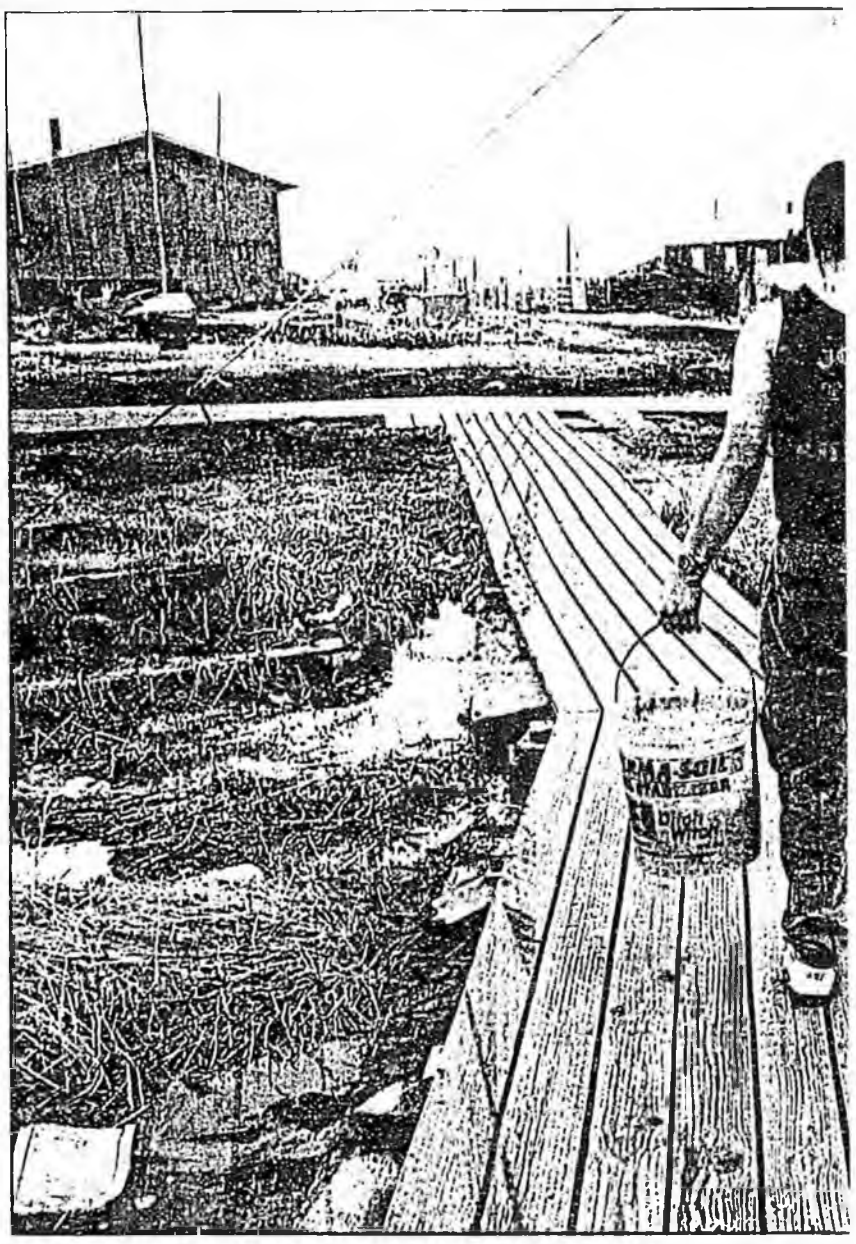
THE EPIDEMIC SPREADS

One of the problems with viral meningitis is that it looks like something much worse. Symptoms are nearly identical to the sometimes-fatal bacterial meningitis.

While viral meningitis can leave a victim with memories of terrible headaches, nausea and other symptoms, bacterial meningitis causes permanent brain damage in one of three victims. Death, especially in infants, is not uncommon. It tends to strike young children, and the risk appears to be worse in overcrowded village housing. Until recently, western Alaska had one of the highest rates in America. A child can die within two days of the arrival of the first symptoms.

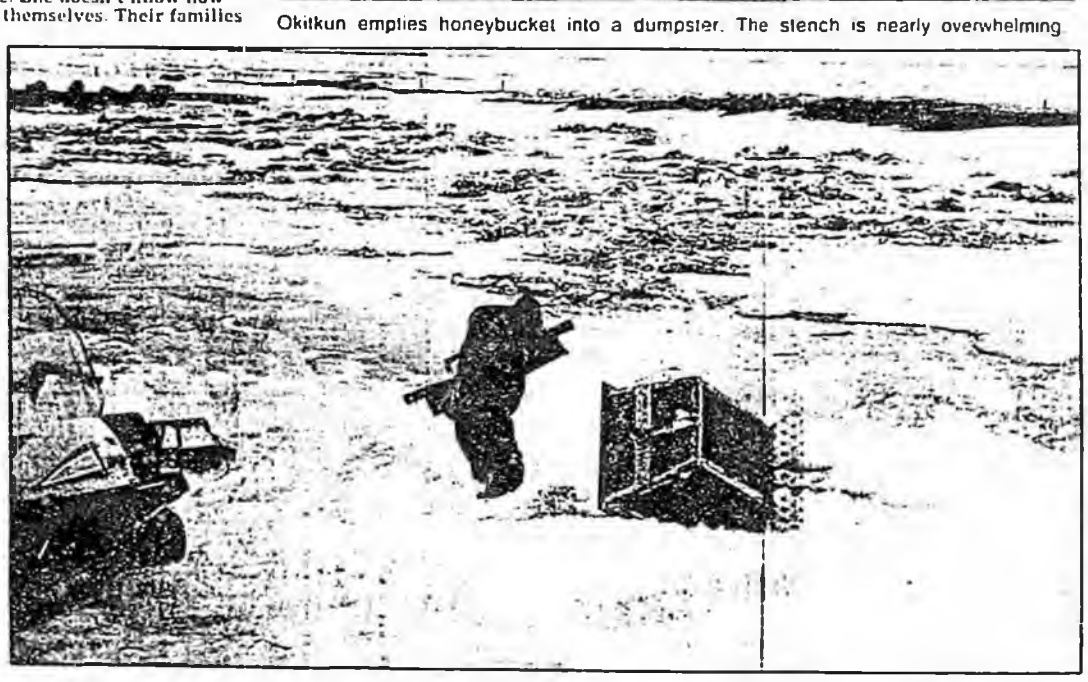
All of which explains why doctors in Bethel and Anchorage were alarmed when the first reports came in from Kotlik of meningitis-like symptoms. The only way to tell the difference between viral and bacterial meningitis is to insert a needle into the spine to take a sample of fluid, a painful procedure known as a spinal tap.

Forty-six people from Kotlik were eventually taken to the hospital for the procedure and to guard against dehydration. Others with less-serious



Being careful not to spill, John Okitkun carries honeybucket from his house in Kotlik to one o

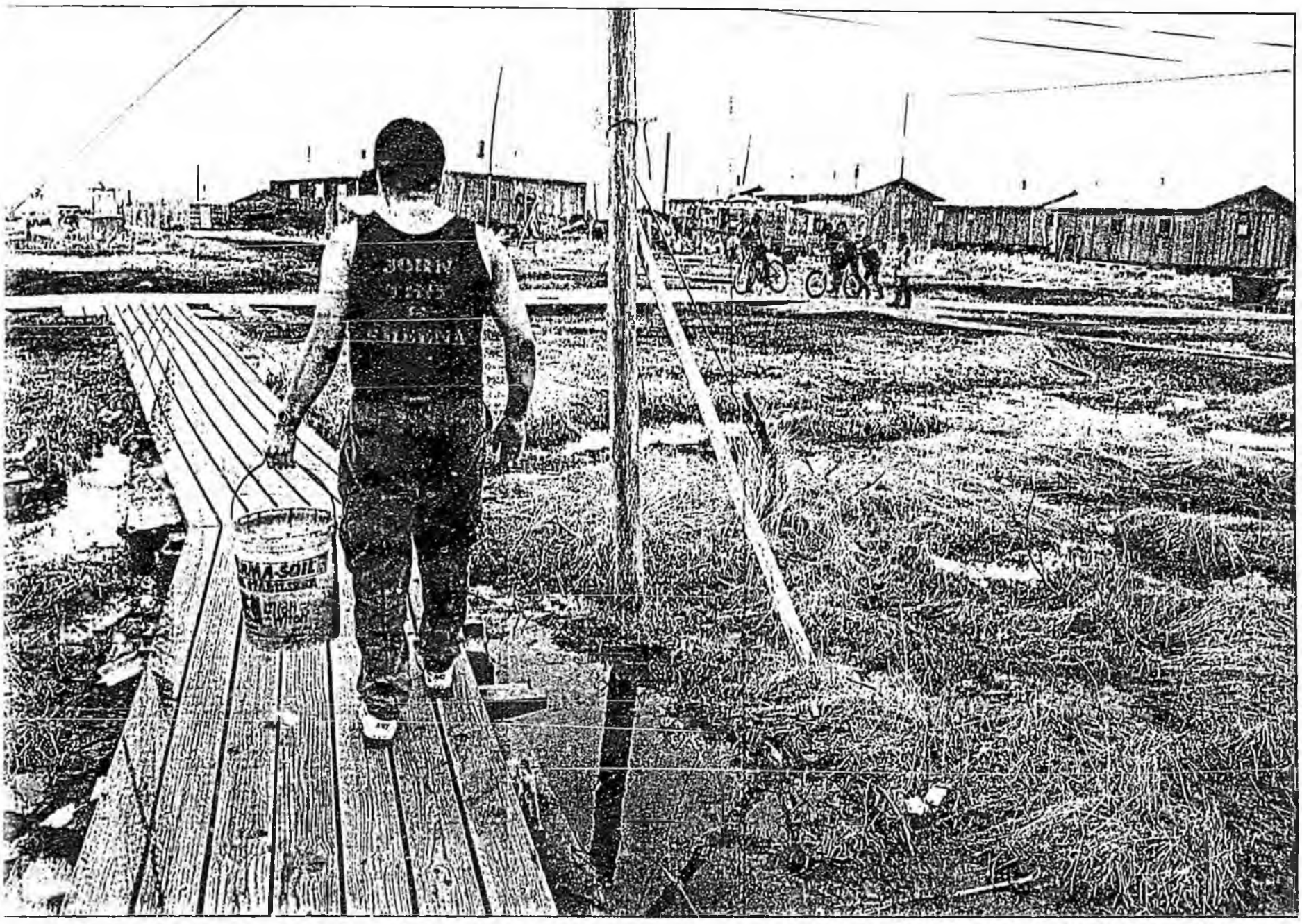
Okitkun empties honeybucket into a dumpster. The stench is nearly overwhelming.



Kotlik's honeybucket man, Joe Uisok, hooks dumpsters to a snowmachine and hauls them to a sewage lagoon.

BAD WATER

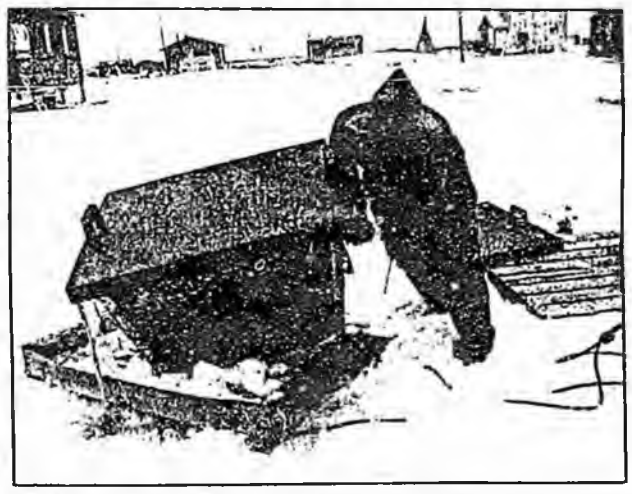
For Many Bush Alaskans, No Escape From Disease



carries honeybucket from his house in Kotlik to one of 23 dumpsters in the village. With six people in his household, emptying the bucket must be done two or three times a week.

> "Everyone knows it's expensive, but we need to do something. It's expensive when people get sick, too."
>
> — Joseph Mike

Uisok, in rain gear and surgical mask, approaches another honeybucket dumpster.



Liquid spills from dumpster when it is wrestled onto a sled.

HONEYBUCKET HAUL SYSTEM

These photos illustrate how waste is disposed of in Kotlik, one of the first villages in Alaska with a honeybucket haul system. Set up by the U.S. Public Health Service and the Alaska Department of Environmental Conservation after a meningitis outbreak, the system replaced underground bunkers, which were filling up fast by the mid-1980s. Eventually the bunkers spilled over. Before installation of the bunkers, villagers simply emptied the contents of their honeybuckets into the alder bushes behind their homes.

Photos by Bob Hallinen
Anchorage Daily News

recently, western Alaska had one of the highest rates in America. A child can die within two days of the arrival of the first symptoms.

All of which explains why doctors in Bethel and Anchorage were alarmed when the first reports came in from Kotlik of meningitislike symptoms. The only way to tell the difference between viral and bacterial meningitis is to insert a needle into the spine to take a sample of fluid, a painful procedure known as a spinal tap.

Forty-six people from Kotlik were eventually taken to the hospital for the procedure and to guard against dehydration. Others with less-serious symptoms were allowed to stay home. Seventy-eight people were diagnosed, although health aides in Kotlik think more villagers were probably sick and never told authorities, fearing they'd have to go to the hospital.

No one is sure how the virus got into the village. There had been outbreaks reported in several Western states, and at least a couple of cases had been reported in the Anchorage area that summer.

In any case, four children got sick that first day, and six more two days later. After that, it was a steady stream of telephone calls and visits to the clinic from sick people and parents of stricken children.

Kotlik had a crisis on its hands.

'THE WEIRDEST WEDDING'

Ledwina Akaran's daughter got married in the middle of the epidemic. "She told me later, she said, 'Mom, that's the weirdest wedding I've ever seen.'"

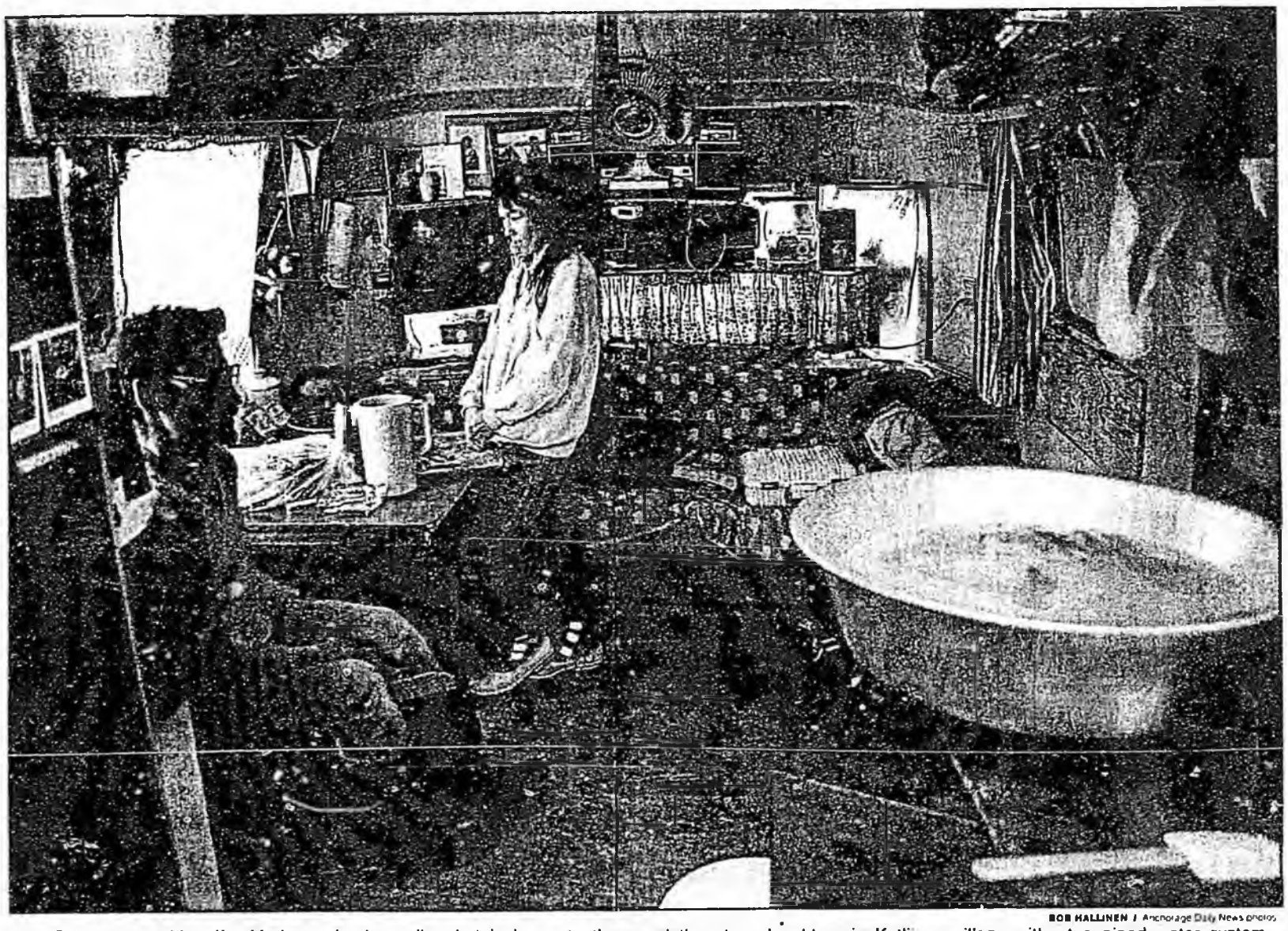
A team of sanitarians, nurses and a doctor flew from Bethel to keep people from panicking. They urged people to wash their hands. They took samples of water and sewage, trying to find the source of the sickness. The village went through 200 buckets of lime to disinfect everything connected with honeybuckets.

In the middle of all of this was the wedding, scheduled months earlier. Village leaders met with doctors. The decision was made to go ahead with it.

But there were adjustments. Relatives invited from neighboring villages of Emmonak and Alakanuk were told they couldn't come. Outside the reception hall, big basins of hot water were set up for everyone to wash their hands. The women serving in the food line wore rubber gloves.

As the epidemic tore through the

Please see Page A-7, KOTLIK



BOB HALLINEN / Anchorage Daily News photos

Billy Odinzoff and his wife, Madrona, in the trailer that is home to them and their two daughters in Kotlik, a village without a piped water system.

KOTLIK: $11 million sewer cost

Continued from Page A-5

village, state and federal health authorities feared the worst. "We had every reason to believe it would just creep across the turdra," Kruse said.

But gradually, during the next couple of weeks, the number of new cases began to taper off. People came home from the hospital and resumed their lives. The sickness had been mostly contained to Kotlik.

The epidemic had passed.

PRIORITIES FOR THE FUTURE

People in Kotlik still talk about the meningitis outbreak. For older residents, it's just the latest in a long string of epidemics. There was tuberculosis in the '30s, '40s and '50s. Killer influenza and smallpox and measles outbreaks before that, striking Native villages across the state. More recently, less serious waves of hepatitis A and B.

As in other Alaska villages, other infections run rampant — flu, ear infections. Some doctors believe poor sanitation is only making the risk of these diseases worse, although it's not their direct cause.

Would an upgraded water and sewer system prevent another outbreak of viral meningitis or hepatitis A?

Probably not, say doctors and others familiar with the issue.

"It would be great if we we could get upgraded systems in all the villages, it would be an improvement," said Dr. Brian McMahon, a doctor at the Alaska Native Medical Center in Anchorage and an expert in the spread of hepatitis in rural Alaska.

"But I don't think that, in itself, is going to completely solve the problem. You still have a lot of people from villages who go off to fish camp, for example. You're probably still going to have a higher risk of these things in a lot of communities."

Would better water and sewer systems make people in villages healthier and reduce the chance of future epidemics?

Probably, the same experts say. But only if the systems are maintained and if they operate properly. Only if residents wash their hands.

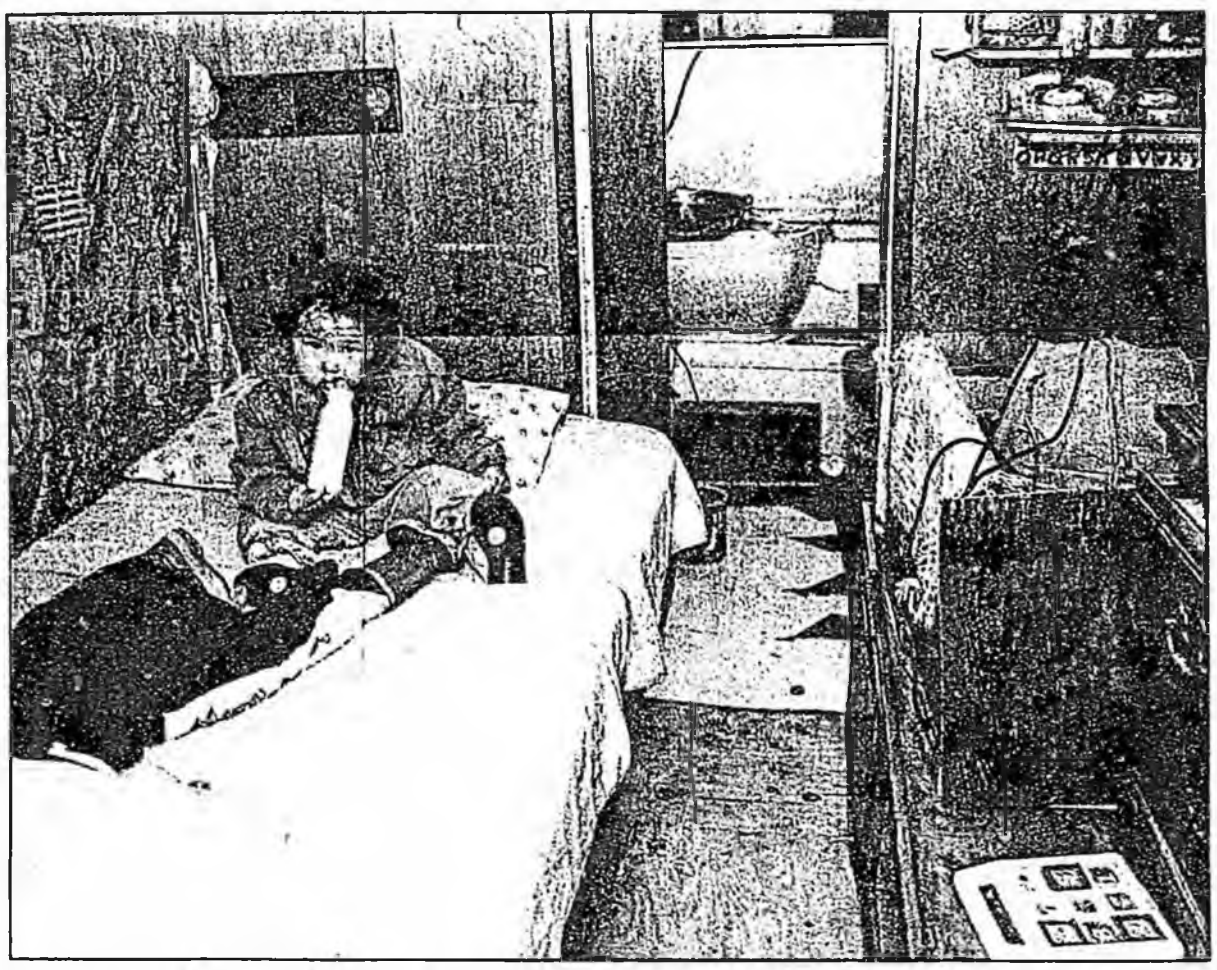
"I think a lot of us, we're still hoping to get water and sewer here someday," said Michael Hunt Sr., president of the Kotlik Traditional Council. "Some of us look up at some of the other villages and think, gee whiz, if they can have it up there, we should be able to have it here."

But Kotlik, like many rural communities, has needs besides an $11 million sewer system, needs such as jobs, housing and better schools. If the village were to get a sewer system, residents question whether they could afford to pay the estimated $50 a month for each household it would cost to maintain.

Government officials familiar with Kotlik's marshy soil question whether it makes sense to spend so much money on a system for so few people. While state and federal governments provide most of the construction money for village water and sewer projects, maintenance is left almost entirely to villages.

A few people in Kotlik, meanwhile, talk about just uprooting and somehow establishing a new community on higher ground with better soil. But with cuts in state spending, that doesn't seem likely. Other residents say they're just trying to make the honeybucket haul system work, and that someday there will be a better system.

"Everyone knows it's expensive," said Joseph Mike, another village elder. "But we need to do something. It's expensive when people get sick, too. It costs money to be going to the hospital."



Two-year-old Magdalane Odinzoff rests in the bedroom of her trailer in Kotlik. Honeybucket is in bathroom at rear.

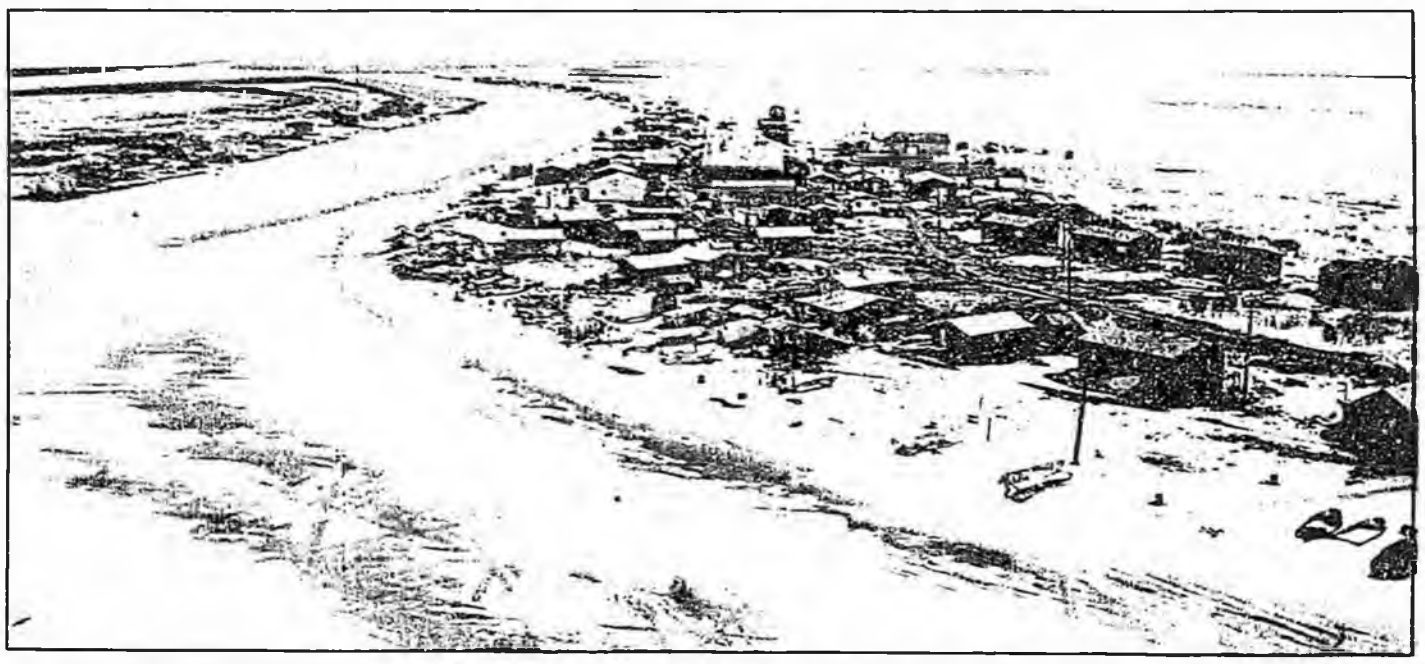


Photo shows Kotlik in May, when the Kotlik River was frozen. Poor soil conditions would add to the cost of piped utilities in the village.

BAD WATER

For Many Bush Alaskans, No Escape From Disease

THE SERIES

SUNDAY

The quality of drinking water and the means of disposing of human sewage in dozens of Alaska communities remains on a par with the developing world and is as primitive as anywhere in America. Sickness often results.

TODAY

► Human sewage leaked from underground pits two summers ago in Kotlik, sparking an epidemic of viral meningitis. It shows what can happen in an Alaska village that lacks modern water and sewer facilities.

TUESDAY

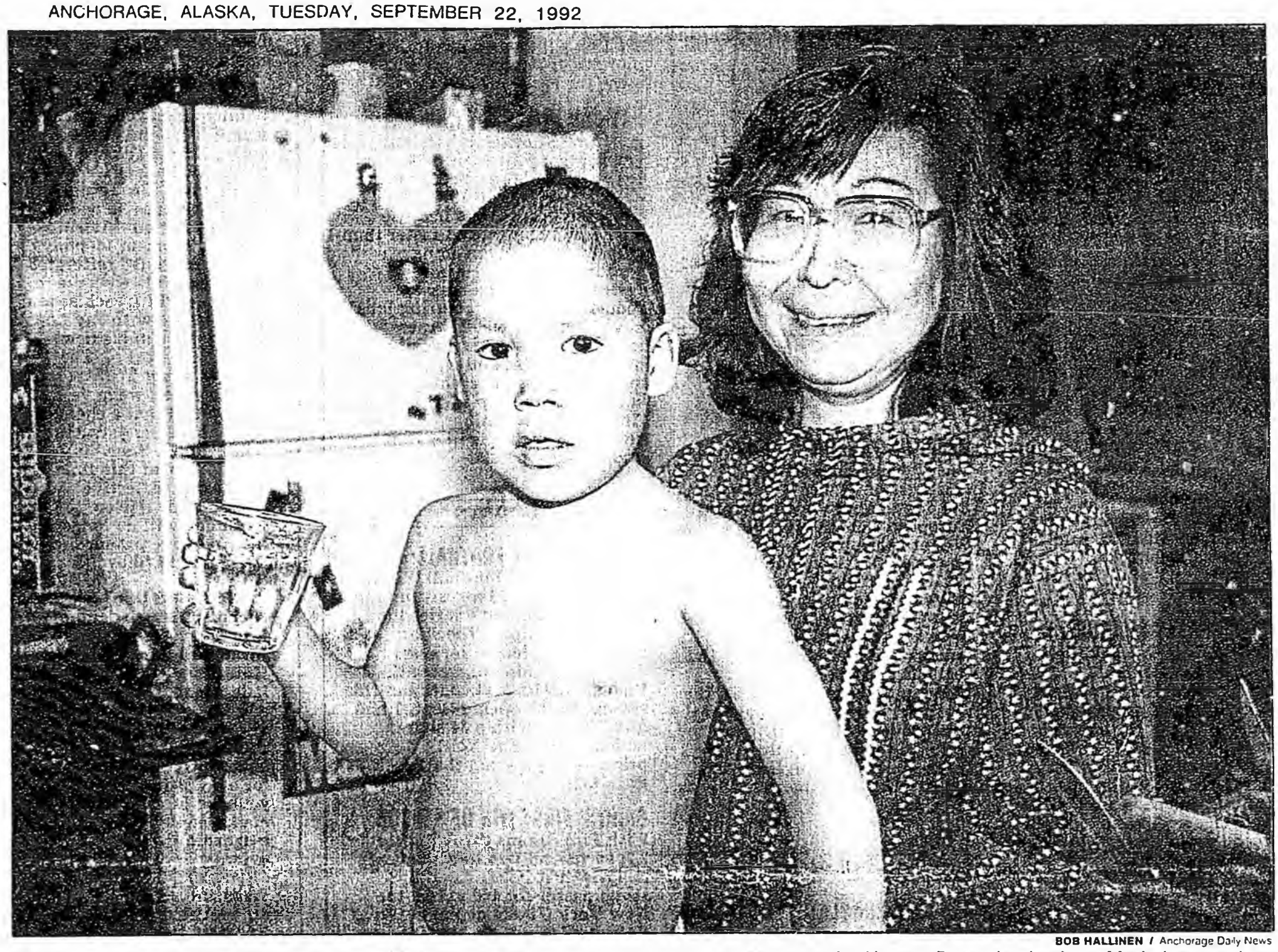
Even when a village has running water, there is no guarantee that the system is functioning safely. Take the case of Dominic Smith, who died of fluoride poisoning in the spring of this year in Hooper Bay.

WEDNESDAY

More than $1.3 billion has been spent during the past 20 years on water and sewer systems in rural Alaska. Yet until recently, much less attention was paid to maintaining village systems once they were built.

THURSDAY

Ten years ago the villagers of Emmonak decided they'd had enough. They were sick — literally — of not having water and sewer systems. They took action, and everything is working just fine now.



BOB HALLINEN / Anchorage Daily News

Gustan Green and his mother, Maria, display a colorful glass of water in their apartment at the Hooper Bay school, where Maria is a teacher.

Where The Water Turned Deadly

Fluoride system wasn't the only thing to fail in Hooper Bay

Let's say that you were very thirsty and wanted to drink a glass of water and the owner of the household wanted for you to help yourself. As you take their pitcher and are about to fill the pitcher and saw the brown residue in his container, I think you'd change your mind about having that glass of water.

— From a letter signed by 300 Hooper Bay residents and sent last winter to Gov. Wally Hickel, asking for upgrades to the village's water and sewer systems

BAD WATER

For Many Bush Alaskans, No Escape From Disease

PART 3

By DAVID HULEN
Daily News reporter

HOOPER BAY — Dominic Smith didn't realize that water from the village well was killing him. So he kept drinking.

The sicker he got, the more he drank. The more he drank, the sicker he got. All around his part of the village, his neighbors were falling sick, too.

By the next day, Smith was dead. His sister was in the hospital, critically ill.

Sometimes water and sanitation systems in Alaska villages fail. Sometimes village governments fail, too. So do government regulators.

All those failures combined Memorial Day weekend in Hooper Bay.

A system that pumps a fluoride solution into the town's drinking water badly malfunctioned, poisoning a large portion of the population. Fluoride at levels 40 times what the federal government considers safe for deterring tooth decay were measured in drinking water, and epidemiologists later concluded that it

Please see Page A-4, **DEADLY**

DEADLY

Regulation, water system break down in Hooper Bay

Continued from Page A-1

was probably the most widespread fluoride poisoning ever documented, with more than 200 people estimated to have been stricken.

And while the same kind of accident involving fluoride in other villages seems unlikely, people familiar with what happened believe the Hooper Bay incident shows, dramatically, the difficulties in providing safe drinking water in Alaska's far-flung villages.

Despite hundreds of millions of dollars spent to improve village water and sanitation systems, any number of things can go haywire — and often do. Hooper Bay is just one of the worst and most recent examples.

"There are many, many obstacles to providing clean water in a place like Hooper Bay," said Dr. Brad Gessner, an epidemiologist with the Alaska Division of Public Health.

"It's not an easy thing to do at all."

POPULATION BOOM IN THE BUSH

With nearly 1,000 people, Hooper Bay is one of the largest Native communities in Alaska. Except for a couple of dozen teachers, their families and two nuns stationed here by the Roman Catholic Church, nearly everyone is Yup'ik Eskimo. They live in dozens of homes scattered several miles across the tundra — in new federally subsidized boxes or in the old gray shacks bunched together on a series of low knolls, the place known as Main Town.

The village has grown by nearly one-third during the past decade, part of a baby boom in the Bush that's expected to double the Alaska Native population during the next 20 years. Advances in rural health care in the 1950s and '60s produced a surge in the number of women of child-bearing age today, and even though families are smaller than 30 years ago, the population is rising rapidly.

It's a village of children. Last year, the school had 262 pupils. Only 40 were in high school.

While Hooper Bay is larger than most villages, in many ways it faces the same problems — lack of economy and opportunity, widespread alcoholism and violence — facing many other rural Alaska communities today. Traditional Yup'ik life is still strong in many homes here, putting food on tables and providing a sort of social glue, but people young and old look at the future and it makes them uneasy.

The village has a 6,000-foot paved runway and microwave ovens and frozen pizzas, but for most people, no running water. The exceptions are the teachers, most of them white, who, as in most villages, live in modern apartments built alongside the school.

There's also running water at the village clinic and in a washeteria, which has washing machines and showers.

Like many villages, Hooper Bay wasn't settled with water and sewer service in mind. It was a good location for hunting and fishing, and grew rapidly after a Catholic mission was established early this century.

The big problem is fresh water: There's not enough. The water table beneath the permafrost is shallow, and in places is heavily contaminated with salt water from the Bering Sea.

"There's basically no way you're going to support a piped utility system in Hooper Bay," said Jim Crum, chief of facilities construction in Alaska for the U.S. Public Health Service, which has built systems in dozens of villages.

"Instead of using five gallons a day, like people do there now, you'd be using several hundred per household," Crum said. "Very quickly, you'd have no water."

The result in Hooper Bay is that, in virtually all the houses, people haul drinking water home in buckets and use honeybuckets instead of toilets.

For most of the year, when the ground is frozen, residents haul their own honeybuckets and empty them into sewage ponds on the tundra a few hundred feet behind the school. The city provides a haul service, but few people in town pay bills and the local government is essentially broke, so service is sporadic.

People keep clean by taking steam baths — driftwood-fired saunas that are a nighly ritual in many households. To give a baby a bath, you heat water in a tub over a wood stove or electric range. The school rounds up elementary school children for showers once a week.

Drinking water is drawn from two public wells — one at the washeteria in a subdivision of newer houses, the other in the old town site.

It was in the old part of town, at the old well, that the water system went haywire this spring.

'A LOT OF UNHAPPY PEOPLE'

Maria Green grew up in Hooper Bay, went to college and now is a fourth-grade teacher, one of the few Yup'ik teachers here. One recent evening, she got up from the sofa, where she sat with her 3-year-old son, and walked into the kitchen and got a glass out of the cupboard.

She's lucky. She lives in a teacher apartment. She turned on the tap.

The water that came out was the color of stout beer.

The school has a separate well from the rest of the village, but like the old town well, a quarter-mile away, the water is heavily mineralized, producing brown water. This in itself isn't a problem, although some residents say it's so foul-looking that they can't stand to drink it.

The brown water doesn't taste bad, though. Some residents prefer it to the water from the third other, newer well in town, which some residents say has a salty taste — apparently the result of sea water seeping in.

"A lot of these villages, we've got some problems here," said Green, who is vice mayor of the village.

"There are a lot of unhappy people in Hooper Bay. The lagoon smells. It floods in springtime. You walk along the road and it smells. We have dumpsters to put honeybuckets in. They overflow and they splash when they haul 'em off to the lagoon. Kids play where it splashes. The kids always get impetigo, that plus diarrhea. . . . There are so many flies."

Last winter, Green and Patrick Lake, a young villager and family man who works as a teacher aide, wrote a letter to Gov. Hickel and passed it around the village.

"The conditions we live in can be changed by having a water and sewer system in this village. We, the people of this village, would not take this for granted. A water and sewer system would prevent epidemics and spreading of disease throughout the village."

One of those who signed the letter was Dominic Smith.

TAINTED WELL WATER

Smith's death came during the busiest time of the year in the Yukon-Kuskokwim Delta — right after seal and duck hunting and just before herring and salmon fishing.

According to residents, village health aides and a lengthy report by state epidemiologists and Alaska Department of Environmental Conservation officials who later visited the village, Smith died within hours of drinking tainted water.

Smith, a sergeant in Hooper Bay's National Guard unit, lived with his wife, Janet, and their six children in one of dozens of small wooden houses crammed together on the little rise that overlooks the bay. Like everyone else in that part of town, the family got their water from the nearby central well. Installed in the early 1970s, it was one of the oldest watering points in rural Alaska, and had been due for an overhaul this summer.

While minerals tainted its color, residents didn't mind the taste. Periodic tests found it free of bacteria and other contaminants. As in other village systems, chlorine, to kill bacteria, and fluoride were added by pump, with a village employee resupplying the chemicals. Fluoride is added in 141 water systems around Alaska, with its use advocated by federal and state health agencies that build the systems as a way to reduce tooth decay.

Smith woke up the morning of May 22 and had a glass of water, pumped from the well the previous day. Within minutes of drinking the water, he got sick to his stomach and vomited. He drank more water. Within a couple hours, according to his wife, he felt weak and needed to lie down. He continued to vomit. He drank more water.

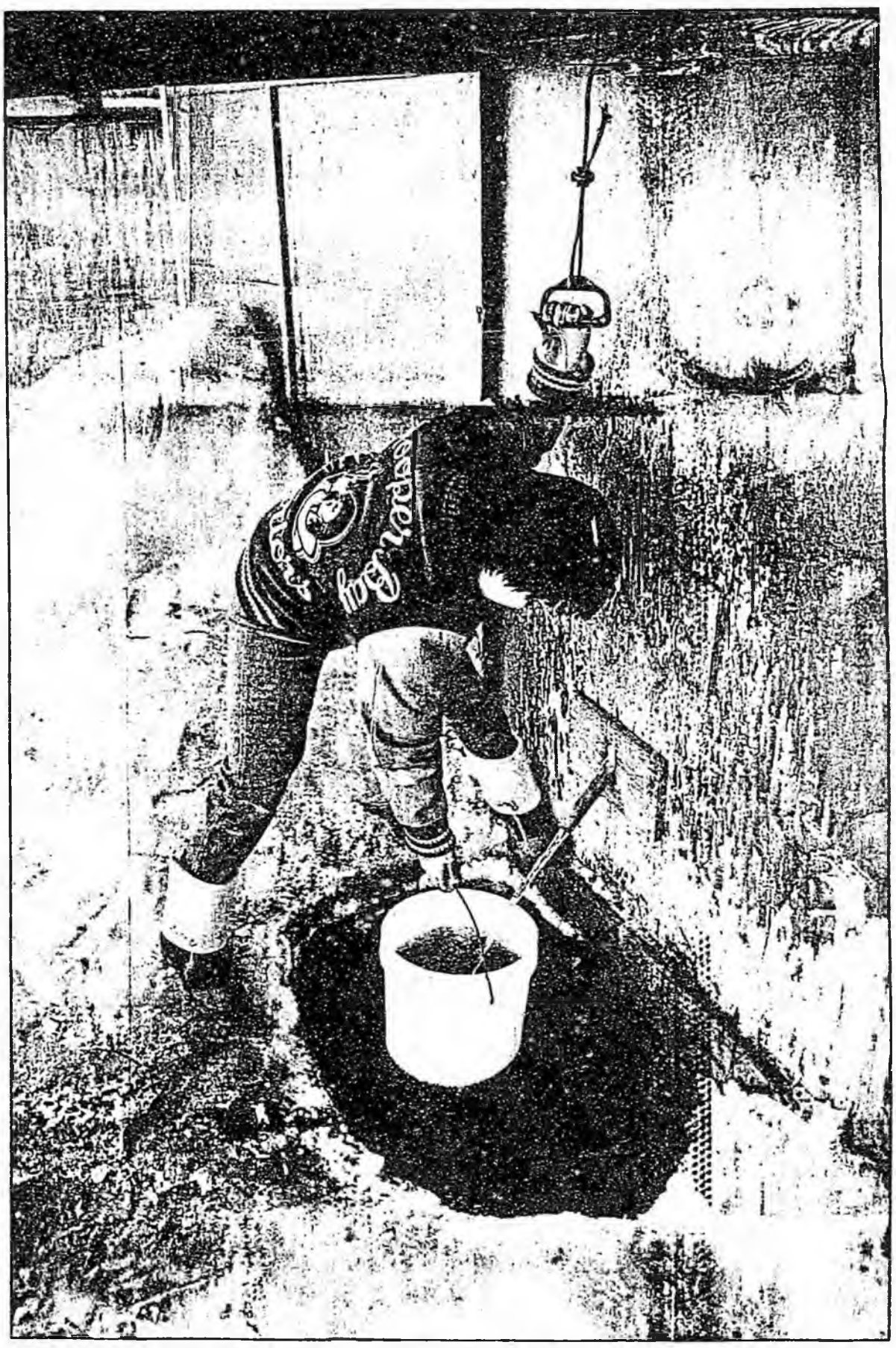
That evening, Smith's children were sent for more water from the well. Smith drank four more glasses of water. He complained his muscles felt weak.

The next morning, Smith's wife awoke and found her husband dead.

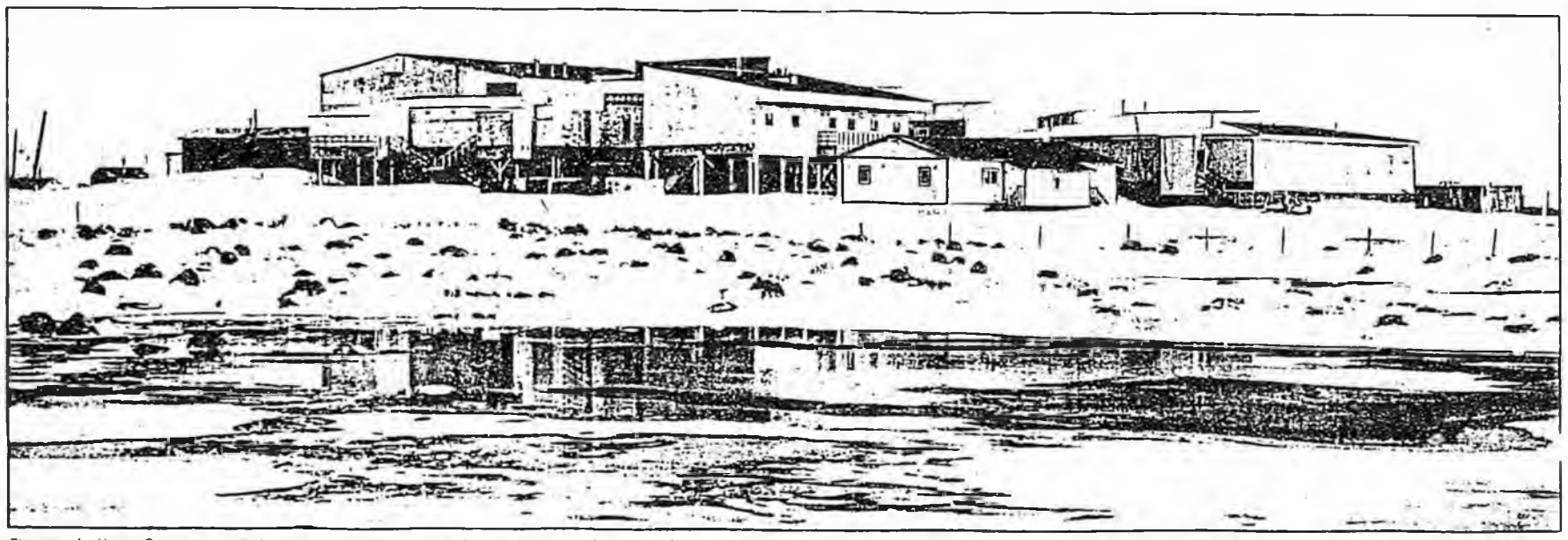
Smith's sister, who lives nearby, drank water from the same well. She fell ill and was flown to Y-K Regional Hospital in Bethel, where she recovered within a few days. At least two other villagers reported neurological symptoms: tingling hands and feet. About two dozen other villagers went to the clinic feeling queasy. Many more said later that they felt ill.

It didn't take long to figure out the problem. Virtually everyone who had gotten sick had drunk from the old well. It

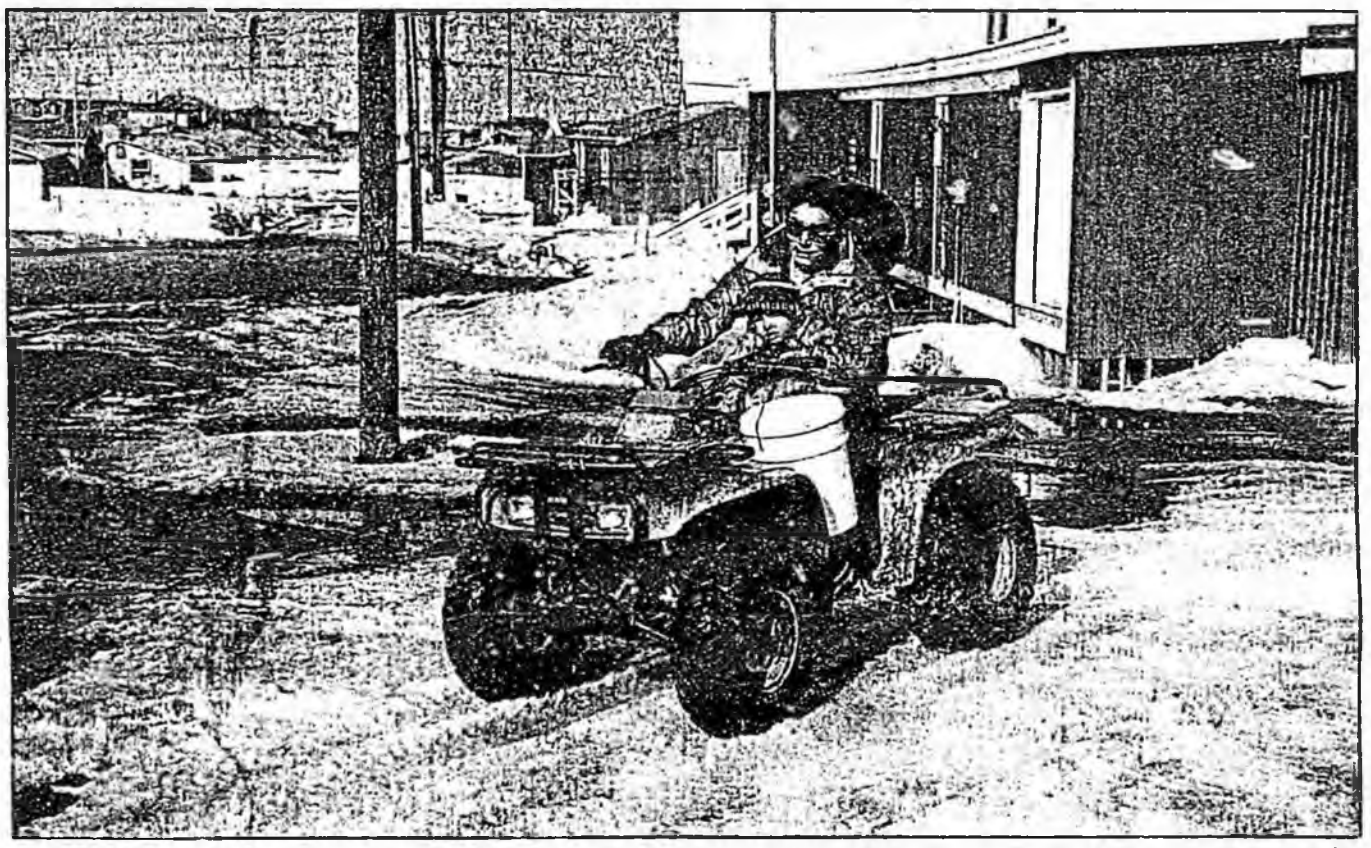
Please see Page A-7, DEADLY



Royola Knight draws a bucket of water from the public well behind city hall in Hooper Bay in mid May. Deadly levels of fluoride got into the well's holding tank later that month, killing one person and making several others sick. The well was rebuilt this summer.



This view of a Hooper Bay sewage pond shows the back of the village school complex lying just a few hundred feet away. The city provides a honeybucket haul service, but service is sporadic, so most residents empty their own buckets, particularly in winter.



Carlton Bell hauls home a bucket of water from the washeteria in Hooper Bay in May. Tia Frank rides along on the four-wheeler.

Teacher aide Patrick Lake, holding his daughter in their home in Hooper Bay, joined teacher Maria Green in writing a letter to Gov. Hickel asking for a water and sewer system for their village.

"The conditions we live in can be changed by having a water and sewer system in this village. We, the people of this village, would not take this for granted. A water and sewer system would prevent epidemics and spreading of disease throughout the village."

— From letter to Gov. Hickel

Photos by Bob Hallinen
Anchorage Daily News

BAD WATER

For Many Bush Alaskans, No Escape From Disease

THE SERIES

SUNDAY

The quality of drinking water and the means of disposing of human sewage in dozens of Alaska communities remains on a par with the developing world and is as primitive as anywhere in America. Sickness often results.

MONDAY

Human sewage leaked from underground pits two summers ago in Kotlik, sparking an epidemic of viral meningitis. It shows what can happen in an Alaska village that lacks modern water and sewer facilities.

TODAY

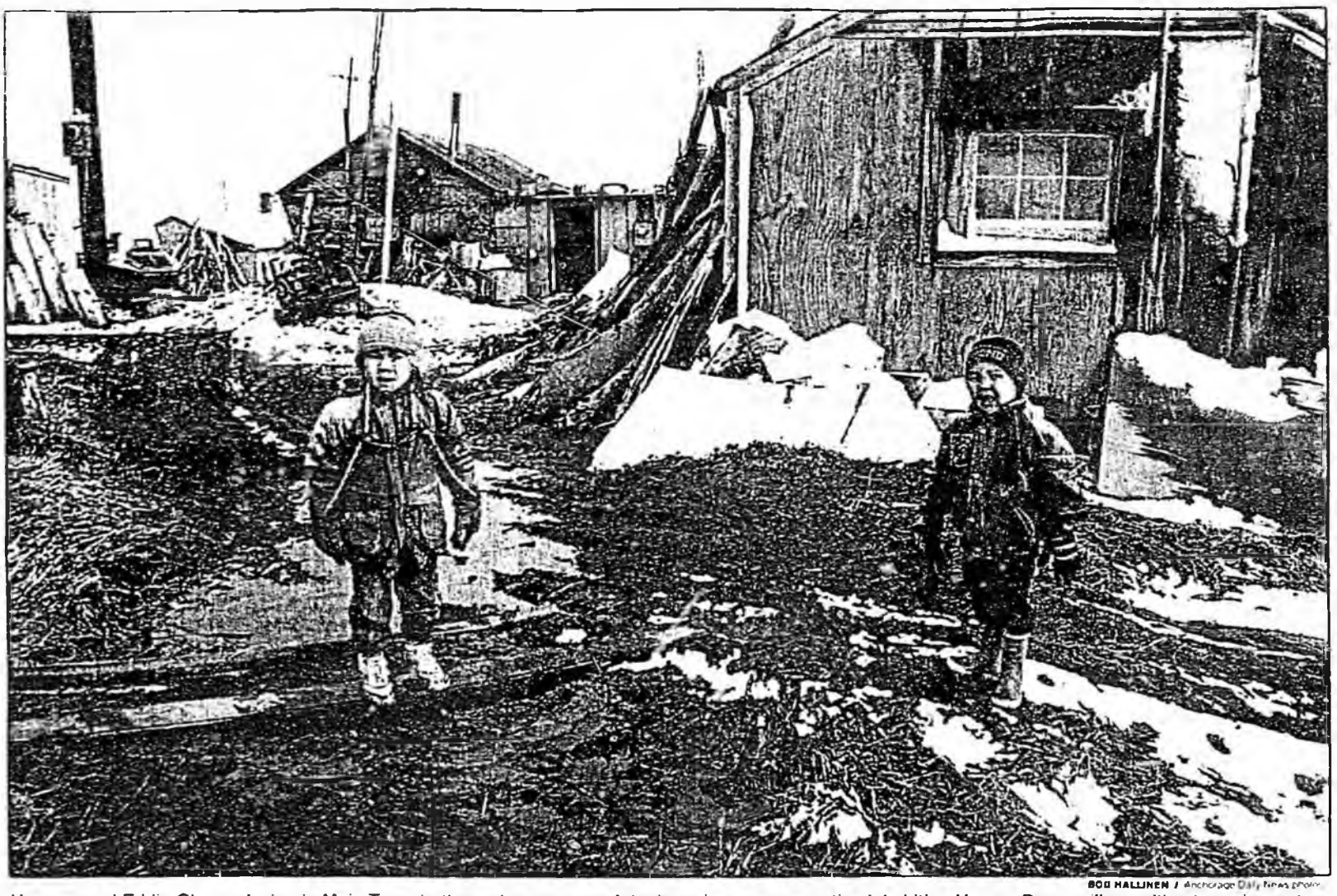
► Even when a village has running water, there is no guarantee that the system is functioning safely. Take the case of Dommic Smith, who died of fluoride poisoning in the spring of this year in Hooper Bay.

WEDNESDAY

More than $1.3 billion has been spent during the past 20 years on water and sewer systems in rural Alaska. Yet until recently, much less attention was paid to maintaining village systems once they were built.

THURSDAY

Ten years ago the villagers of Emmonak decided they'd had enough. They were sick — literally — of not having water and sewer systems. They took action, and everything is working just fine now.



BOB HALLINEN / Anchorage Daily News photo

Venessa and Eddie Olsen, playing in Main Town in the spring, are two of the booming new generation inhabiting Hooper Bay, a village without running water.

BAD WATER

For Many Bush Alaskans, No Escape From Disease

"Sometimes I have trouble understanding how, in 1992, you can have a community of nearly 1,000 people that doesn't have something that's considered perfectly normal anywhere else in the country."

— Roger Adams, school principal Hooper Bay

DEADLY: Town well goes awry

Continued from Page A-4

was shut down. Tests of water in the well's holding tank and in people's homes showed fluoride levels much higher than the federal government's safe water standard of 4 parts per million. Water from one home measured at more than 150 ppm.

FIGURING OUT THE PROBLEM

What went wrong in Hooper Bay?

Mechanically, a pump broke. The mechanism that was supposed to lift water up the well and into the holding tank was working only intermittently, while at the same time, a separate device to inject fluoride into the water kept going at full speed. Water levels in the tank were low, but the fluoride kept flowing in as if it were full.

But there were other problems in Hooper Bay, according to the state's investigation.

Three weeks before the poisoning, the village sent off a water sample to the regional health agency, the Yukon-Kuskokwim Health Corp., and the test showed a level of fluoride five times what is recommended in drinking water by the federal government. Agency officials called the village and told the well operator to shut off the fluoride, according to the state report.

The fluoride, state investigators later concluded apparently was not shut off until three weeks later, after people began getting sick.

Hooper Bay, like all villages, was supposed to submit monthly water samples for bacteria to the Department of Environmental Conservation, but hadn't done so since 1990, according to DEC records. Chlorine and fluoride readings were taken more regularly and showed levels within safe ranges until early this year.

The village had been without a city manager for more than year. The water operator had little formal training.

Six weeks before the poisoning, DEC engineers doing work on the Hooper Bay well failed to notice the pump problems.

A lengthy report this summer by state epidemiologists outlined "multiple deficiencies that existed in design, operation, maintenance, training, communication, management and regulation of the water system."

The malfunctioning well was rebuilt this summer.

Smith's widow, Janet, filed a lawsuit last week against the regional health corporation seeking $3 million in damages, claiming the agency was negligent in not warning villagers of the poisoning threat earlier.

'IT'S AN OUTRAGE'

"It's easy to point at a place and say its dysfunctional," said Gessner, the epidemiologist with the state Division of Public Health.

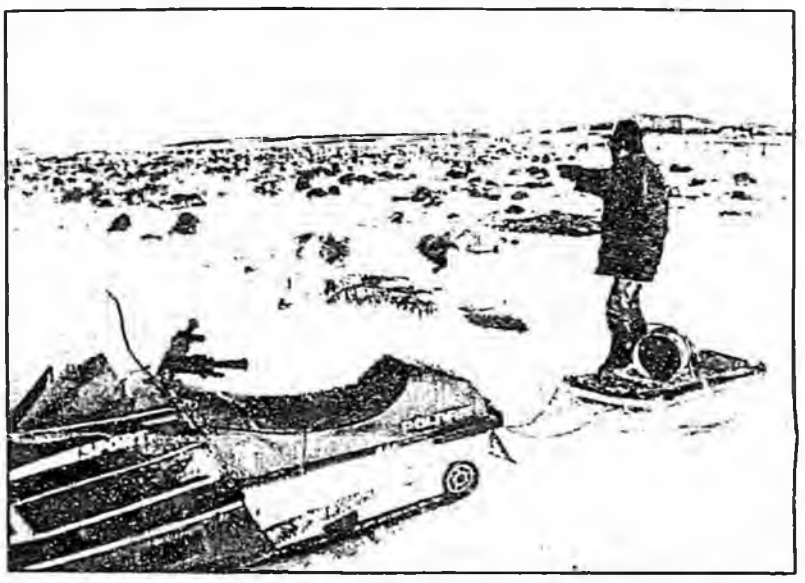
"But if you don't have the money to hire someone who has much training to operate your system, and if you're relying on someone who basically volunteers to do the work, it's basically a situation of where people are doing the best with what they have."

Roger Adams, principal of the Hooper Bay school, said: "Sometimes I have trouble understanding how, in 1992, you can have a community of nearly 1,000 people that doesn't have something that's considered perfectly normal anywhere else in the country.

"Think about it — it's hard to find a community anywhere today that doesn't have running water. Out here; it's common. It's unusual to have it.

"When you think about it, to me, it's an outrage. I mean, people aren't out here on a camping trip. They live here. We've got 1,000 people in this town and we crap in a bucket. Really, there's no damn excuse for it.

"If we can put a man on the moon, then jeez, we ought to be able to solve this."



Hooper Bay has no sewer system, either, so its residents use honeybuckets. Here, Raphael J. Murran empties buckets into a sewage pond in May

Source: Alaska Department of Community and Regional Affairs, 1990 Census

RON ENGSTROM / Anchorage Daily News

In A State Of Disrepair

Cold weather, high expense can plague even the best sanitation system in Bush

BAD WATER

For Many Bush Alaskans, No Escape From Disease

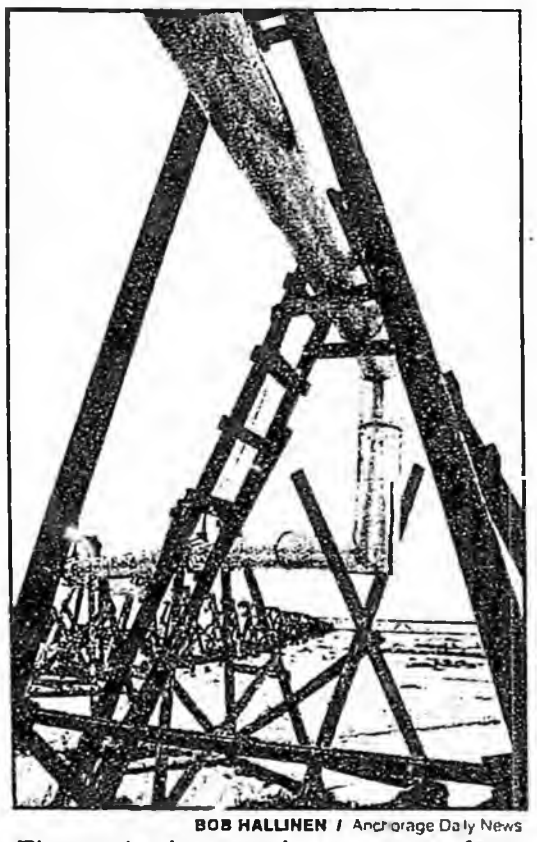
PART 4

By DAVID HULEN
Daily News reporter

In January, in the midst of an arctic cold snap that sent wind chills down to 40 degrees below zero, two government workers were dispatched to help solve a problem in the village of Buckland, an Inupiat settlement of 300 people south of Kotzebue.

The problem? A sewer line leading from the community washeteria, containing the village's only toilets and washing machines, had frozen

Please see Page A-5, DISREPAIR



BOB HALLINEN / Anchorage Daily News

Elevated pipe carries sewage from the Ko'lik school to a sewage lagoon, separa_ from the lagoon where villagers dump their honeybuckets.

Source U S Public Health Service

LANCE LEKANDER / Anchorage Daily News

Water and sewer funding

The federal and state governments have spent more than $1.3 billion on water and sewer systems in rural Alaska during the past 30 years.

DISREPAIR: Alternatives sought to piped utility systems

Continued from Page A-1

solid.

It's a common problem in the Alaska Bush. Winter weather is as harsh as any inhabited region of the Earth, and it's difficult to find a sewer or water system anywhere in the state that hasn't had at least some freeze-ups.

BAD WATER

For Many Bush Alaskans, No Escape From Disease

The problem in Buckland was easily solved. The workers, from the U.S. Public Health Service and the regional health agency, brought a specialized heater and within an hour or two had thawed the pipe, which carries waste water to a sewage lagoon.

But as they walked around the village, the water-system technicians noticed deeper problems than the freeze-up: Honeybucket dumpsters scattered between homes were overflowing. The city administrator explained that snow had drifted over the roads, blocking the path of the city snowmachine that's supposed to cart the dumpsters to the lagoon. The village didn't have enough money to continually clear snow, he said.

The village, like many others in Alaska today, is in bad economic shape. No fees were being collected for hauling off sewage. Buckland had no certified water or sewer plant operator.

Then the visitors discovered something even more surprising: The village government had virtually no tools to repair its water system.

In the Bush today, some communities function well. There are trained water and sewer system operators and the systems are maintained; the state or federal government provides technical assistance when problems arise. The water people drink is safe, even if they have to haul it home in a bucket. And there is an appropriate spot to haul sewage, even if there are no flush toilets.

That's how it's supposed to work everywhere.

But reality is often much different. Many water and sewer systems don't work like they were designed to, or function only sporadically. Visit any region of the state, or talk with people in government agencies, and you'll hear the stories.

SERIOUS PROBLEMS

More than $1.3 billion in public money has been spent during the past 30 years building water and sewer systems across rural Alaska. Year after year, funding new village construction projects becomes a big political issue in Juneau. Year after year, getting village projects in the federal budget is a priority of the state's congressional delegation.

Yet until recently, much less attention was paid to maintaining village systems once they were built, or helping village residents learn to do it.

"You can't give a person without a job a Jaguar and say, 'Here are the keys, now go drive it, but just remember, you have to be really responsible and take good care of it,' " said Paul Hansen, an official with the Maniilaq Association, the health agency that serves villages in northwest Alaska.

Virtually every village today has some sort of functioning water and sanitation system. About half have piped utilities that provide running water and flush toilets in homes. The others have much cruder systems: outhouses and honeybuckets, and central washeterias or wells that require villagers to haul drinking water home in buckets.

But problems with all kinds of systems are common, and it doesn't take much for even the expensive piped systems to fall into serious disrepair.

How many systems are broken?

A village-by-village report by the Alaska Department of Environmental Conservation earlier this year showed serious problems in many of the more expensive systems. Some excerpts:

Ambler: "Lift station froze, surface runoff problems" ... Angoon: "Existing treatment plant inoperative" ... Hoonah: "Treatment plant beyond operating capacity, electrical consumption high" ... Hydaburg: "Raw sewage discharged into ocean" ... Kaltag: "200-foot section of original system has settled, causing pipe to belly" ... Kiana: "Frozen lines" ... Manokotak: "Lift station works intermittently" ... Noatak: "Lift stations frost-jacked, PVC pipe shattered, lagoon eroding" ... Noorvik: "Partial freeze-up (1990), only 25 of 85 homes still have service, inadequate pressure, raw sewage backing up" ... Russian Mission: "Sewer line damaged by flood."

'UNQUALIFIED'

"We run on a razor's edge every winter," said Bob Foote, vice mayor of the village of Unalakleet, which has had a functioning piped utility system since the mid-1970s. "So many things can go wrong."

Much of it has to do with the physical environment. It's outrageous. Many villages sit atop permafrost, which makes building anything a potential disaster. Arctic weather is almost a guarantee for freeze-up. Older systems using metal and plastic pipe crack when they freeze, leading to very expensive repairs.

But part of the problem also has had to do with maintenance inside villages.

It's a problem a lot of people don't like to talk about. Some government officials are afraid to talk bluntly about past mistakes by maintenance workers in Native villages for fear the comments will be construed as racist. Some village residents don't like to talk about it because they think it reflects badly on their communities.

"Absolutely there are unqualified operators," said Anne Walker, executive director of the Alaska Native Health Board, an advocacy organization which has lobbied for more government spending on village utility systems and maintenance programs.

"The thing we've got to do is make it easier for people to become qualified."

Few rural villages, including virtually all of the smaller ones where the systems consist of honeybuckets and central wells, have certified operators for their water and sewer systems. Yet these operators must routinely add chlorine and fluoride — chemicals which can be dangerous if used incorrectly — and are required to test for hazardous contaminants.

Since the early 1970s, the state has not required certification of operators of water and sewer systems with fewer than 500 users — which includes most villages. Operators in larger communities must take classes and pass a state examination.

Some state officials and villagers defend the regulation, saying that to force more requirements on villages would only make it more difficult to find qualified operators. But there's also a movement within the Department of Environmental Conservation to require operators to have more training. Proposed new regulations, which could take effect next year, would require all villages to employ "qualified" operators — although just what "qualified" means is still being debated.

Some cash-strapped communities have trouble paying more than $10 an hour to their water operators, which has made it difficult to fill the jobs with anyone who has experience or training. Even operating village government year-round in subsistence-based communities can be difficult.

"If you have an operator there on the job a few days, then he takes off to go fishing — which he probably needs to do to support his family because he can't make enough with his job to do that — well, then, you're really leaving the safety of the community open," said Melanie Abell, statewide director of drinking-water quality for the DEC.

WATER SAMPLES

In many communities, it's difficult to know just how good — or bad — the water is because no one samples it. Under state law, communities are required to test drinking water at least once a month for bacterial contamination. Yet dozens of villages regularly fail to test their water, according to state and federal records.

According to the U.S. Environmental Protection Agency, 140 water systems in Alaska violated bacteria testing standards in 1991. Only 24 percent of the state's community water systems made last year's Governor's Commendation List; to be listed a community can have no bacteria monitoring violations or boil-water notices, and the community must carry out regular testing for chlorine and pollutants.

Still, there has been some progress. The number of catastrophic freeze-ups appears to have decreased the past couple of years, according to officials with the DEC and federal government. Polyethylene pipe that doesn't crack when frozen has been developed and is being installed in many villages.

The state has developed a program that places maintenance workers in rural hubs to serve clusters of villages for more serious problems. About half the villages in the state are now covered. A similar new program provides administrative expertise to small village governments.

Meanwhile, people involved in the issue — from villagers to government officials to Native leaders — are asking whether there are other ways to solve the problems besides expensive, conventional piped utility systems.

Several alternatives have been explored. Companies have developed composting or chemical toilets that some people think could work in the Bush, yet some of these businesses complain that their ideas have been stifled by government red tape. Government officials say some of the ideas may well hold promise, but that none is advanced enough to be used on a wide scale.

A solution being talked about increasingly is a haul system, widely used in Canada and in some larger Alaska villages, such as Bethel. Although the details may vary from system to system, most involve closed, separate water and toilet systems in each household. Water trucks make regular deliveries and other trucks pump out and haul off sewage regularly.

A small-scale test haul system, developed by a Canadian company, was installed last year at Mekoryuk on Nunivak Island. The system recycles dirty water from sink drains for use in toilets, and water and sewage is hauled to and from individual houses by a city-owned four-wheeler.

As with piped systems, the haul concept has two drawbacks, people familiar with it say: It's expensive and requires maintenance.

In a lengthy report on the Canadian system last year, an engineer with the Alaska Department of Environmental Conservation concluded that the system worked largely because its operation was heavily subsidized by the federal government, which pays up to 80 percent of operating costs in most communities.

BOB HALLINEN / Anchorage Daily News

"It gets down to the question of how much the governments are willing to spend to improve health and the quality of life in the villages. That, and how much of a commitment the local communities are willing to make to make the things work."

— Anne Walker, executive director
Alaska Native Health Board

MILLIONS OF DOLLARS

In Alaska, there are no direct state or federal subsidies for water and sewer operation. Fitting houses with closed water systems and toilets could cost hundreds of millions of dollars.

A report by the U.S. Public Health Service earlier this year estimated that it would cost more than $40 million a year to operate haul systems statewide — money local villages don't have.

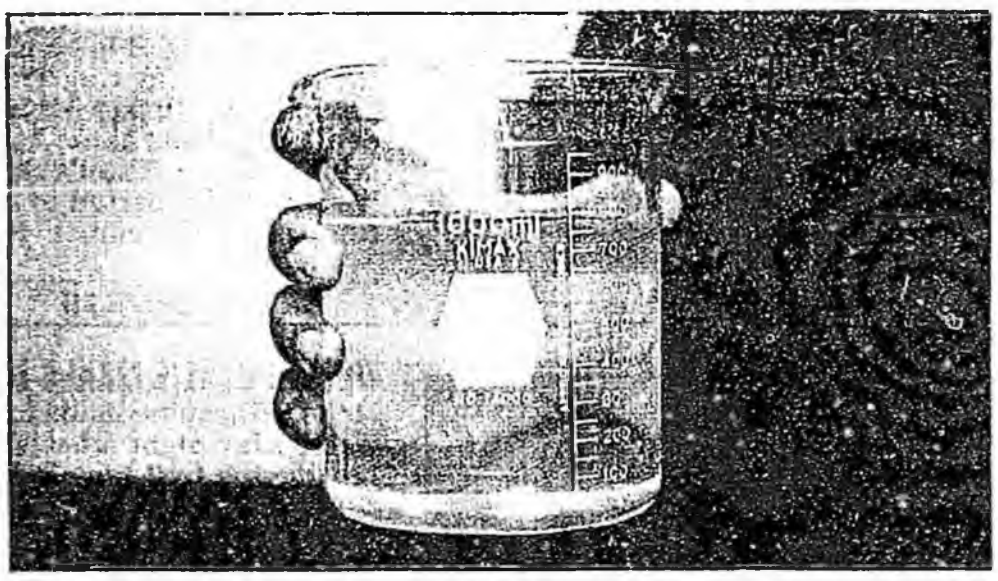
State officials point to declining oil revenue, which provides most state money, and say it's going to get harder to spend vast sums on the problem. Federal agencies are becoming more conservative, too. Native leaders, meanwhile, point to health problems in the villages and are demanding that something be done.

Whatever the choices, any system seems unlikely to work, given the past, unless it is designed so it can be maintained by local communities.

"It gets down to the question of how much the governments are willing to spend to improve health and the quality of life in the villages," said Walker, of the Native Health Board. "That, and how much of a commitment the local communities are willing to make to make the things work."

BOB HALLINEN / Anchorage Daily News photos

Emmonak's water-plant supervisor, John Westlock, checks the chlorine level in the village water supply late last week.



Yukon River water, after treatment in the Emmonak sanitation plant, is ready to drink. Here's a beaker of the finished product.

One Village Says Enough Is Enough

Determined Emmonak brings home a piped utility system

By DAVID HULEN
Daily News reporter

BAD WATER

For Many Bush Alaskans, No Escape From Disease

LAST PART

Ten years ago, the people in the Yukon Delta village of Emmonak decided they'd had enough — of chopping and melting river ice to get drinking water, of lugging full honeybuckets out of their houses every day, of living with the risk of disease from daily contact with sewage.

"There were all these sicknesses going around the community," said Andrew Kelly Sr., a lifelong resident of the village who served on the city council at the time.

"People got together and talked. They said, 'This isn't the way to be living.' "

So village residents decided to do something about it.

Leaders of Emmonak, with a population of about 700, began talking with state and federal agencies. They lobbied the legislature and got $1.8 million in start-up money to build a piped utility system.

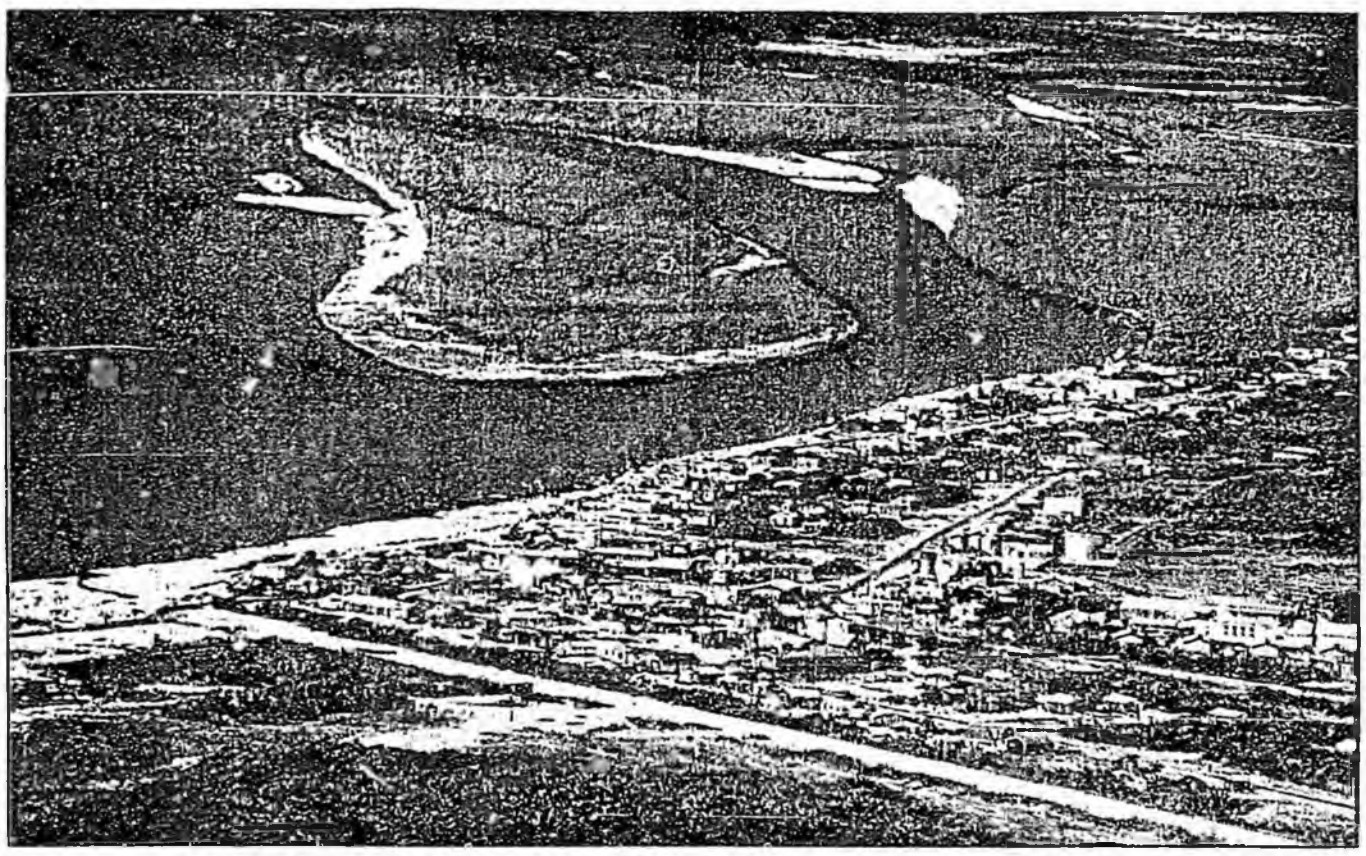
Contractors and agency officials were invited to meetings with villagers. The community settled on a seven-year construction program and villagers continued pressing legislators every year for funding. The villagers passed a local sales tax to help operate the system.

Today — $11 million in construction later — Emmonak has a piped utility system that snakes above the tundra through the village, providing most homes with running water and flush toilets

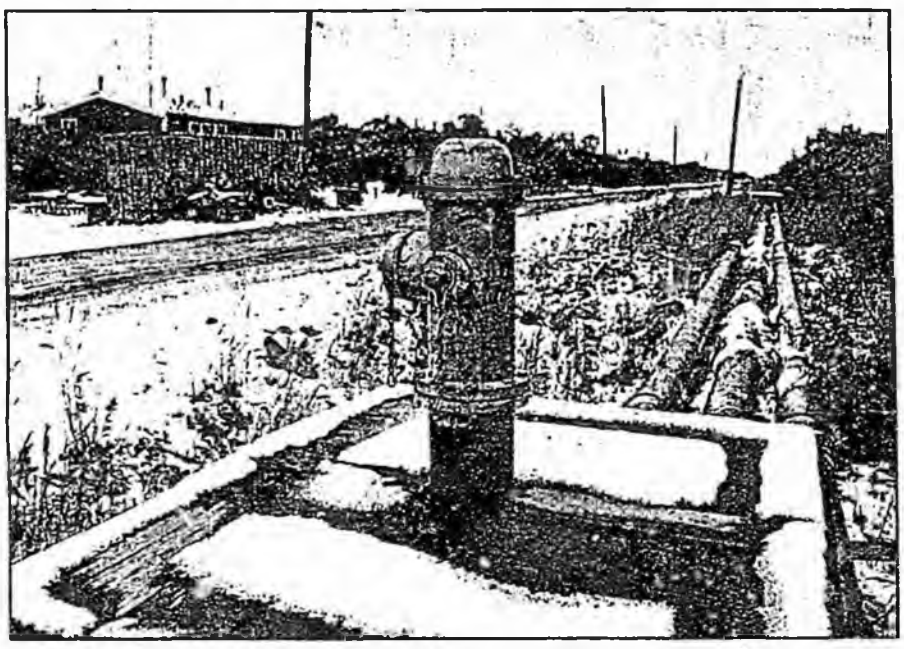
Please see Page A-6, CLEAN

"What strikes me about some villages is that they really made a commitment, not just to get money for a project but to make it work."

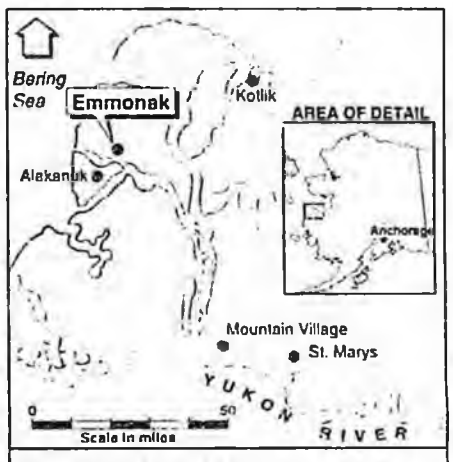
— Greg Capito, director, Village Safe Water Section, Alaska Department of Environmental Conservation



Emmonak, a village in the Yukon River Delta, worked hard as a community to outfit itself with a water and sewer system.



Fire hydrants are part of the above-ground piped water system in Emmonak.

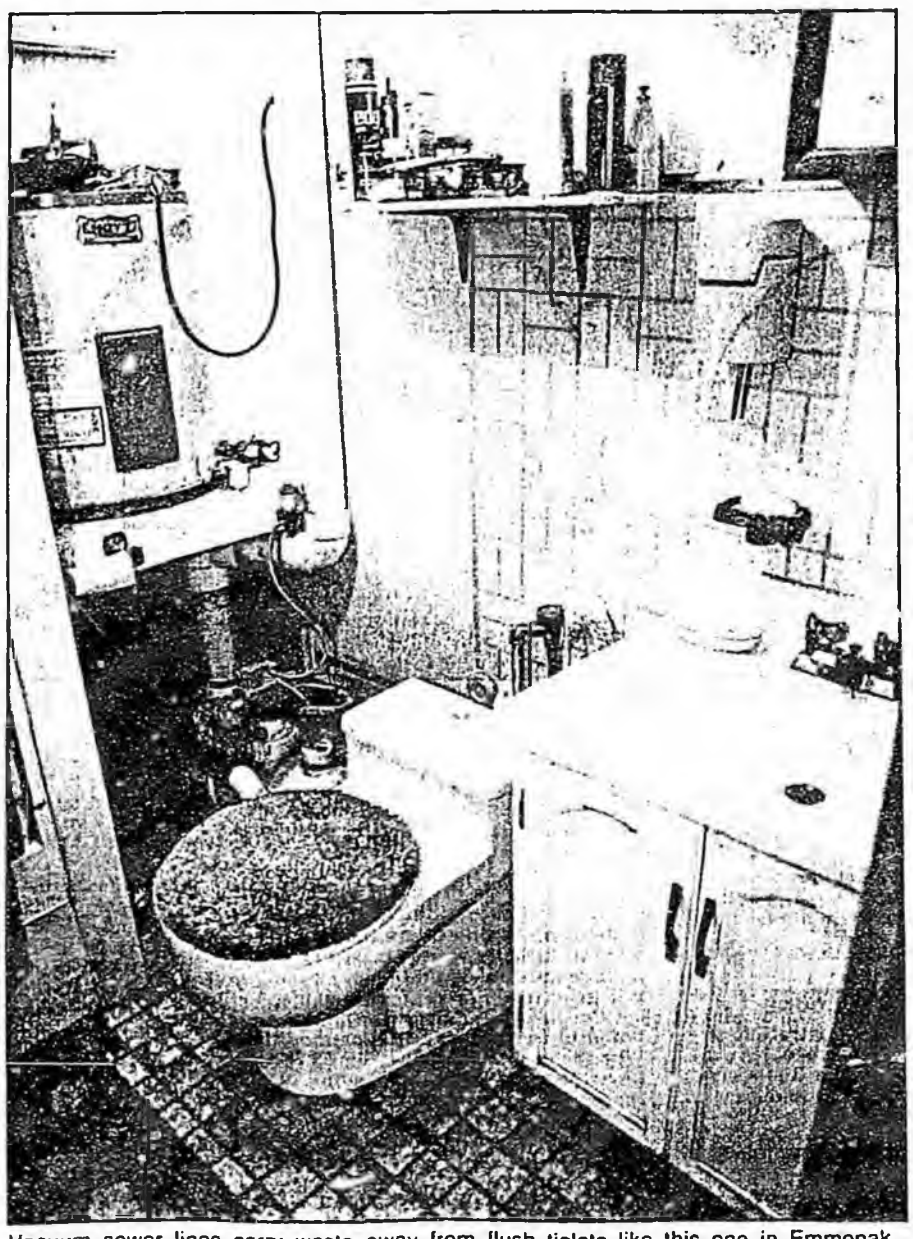


EMMONAK

- **Population:** 642
- **Elevation:** 10 feet at the airstrip
- **Total housing units:** 177 – 39.5% have one or no bedrooms
- **Water and Sewer:** A $10.28 million piped system installed in stages starting in 1982, connected to 165 homes, three businesses and two schools. Water is pumped from the Yukon River, treated and filtered, then stored in a 200,000-gallon holding tank. Homes have vacuum toilets and gray-water sump pumps connected to pipes that flow into a central sewage lagoon. The system has five miles of main pipe, with 2.5 miles of above-ground service lines. The system is maintained through a $50-per-family monthly charge, plus a 1% sales tax.

Sources: Alaska Department of Environmental Conservation, 1990 census

RON ENGSTROM / Anchorage Daily News



Vacuum sewer lines carry waste away from flush toilets like this one in Emmonak.

A weasel pokes its head out of a spare piece of pipe in the maintenance yard behind the sanitation plant in Emmonak.

Photos by Bob Hallinen
Anchorage Daily News

BAD WATER

For Many Bush Alaskans, No Escape From Disease

THE SERIES

SUNDAY

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MONDAY

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TUESDAY

Even when a village has running water, there is no guarantee that the system is functioning safely. Take the case of Dominic Smith, who died of fluoride poisoning in the spring of this year in Hooper Bay.

WEDNESDAY

More than $1.3 billion has been spent during the past 20 years on water and sewer systems in rural Alaska. Yet until recently, much less attention was paid to maintaining village systems once they were built.

TODAY

► Ten years ago the villagers of Emmonak decided they'd had enough. They were sick — literally — of not having water and sewer systems. They took action, and everything is working just fine now.

BAD WATER

Reaction To The Problems In Bush

For Many Bush Alaskans, No Escape From Disease

JOHN SANDOR

Commissioner, Alaska Department of Environmental Conservation

"The state has to have a better overall policy. . . . From an environmental standpoint, these things have got to be among the top priorities. Some of these folks in the villages have lived there for thousands of years without these facilities, but that certainly doesn't mean they should continue to live that way. But we know we can't just put conventional systems in all these villages. It's a matter of public health but also a matter of quality of life. And if we're ever going to get economic development in rural Alaska, it's a must."

FRANK MURKOWSKI

US Senator

"Without question in my mind, it's the most serious health problem in rural Alaska. In my opinion, you have to depart from the norm and encourage innovative technology. . . . The bureaucracy can't quite seem to have that degree of flexibility to make the decisions. . . . The question, to me, is how do you get guys with good ideas approved into the process? The agencies have adopted uniform standards for rural America and applied them to the Bush, and you can't do that."

TONY SMITH

Candidate for US Senate

"From what I've heard from people in rural Alaska, they're really worried about the operational costs. I've had some village leaders describe to me a concern that the solutions that are always proposed by the bureaucracy are always operationally very intense. They're very sophisticated systems, yet a lot of these villages just don't have the money. . . . They're concerned you need a master's degree from MIT to run the thing and you'll need to have parts flown in from who-knows where. They just need systems that work and that they can maintain."

GENE PELTOLA

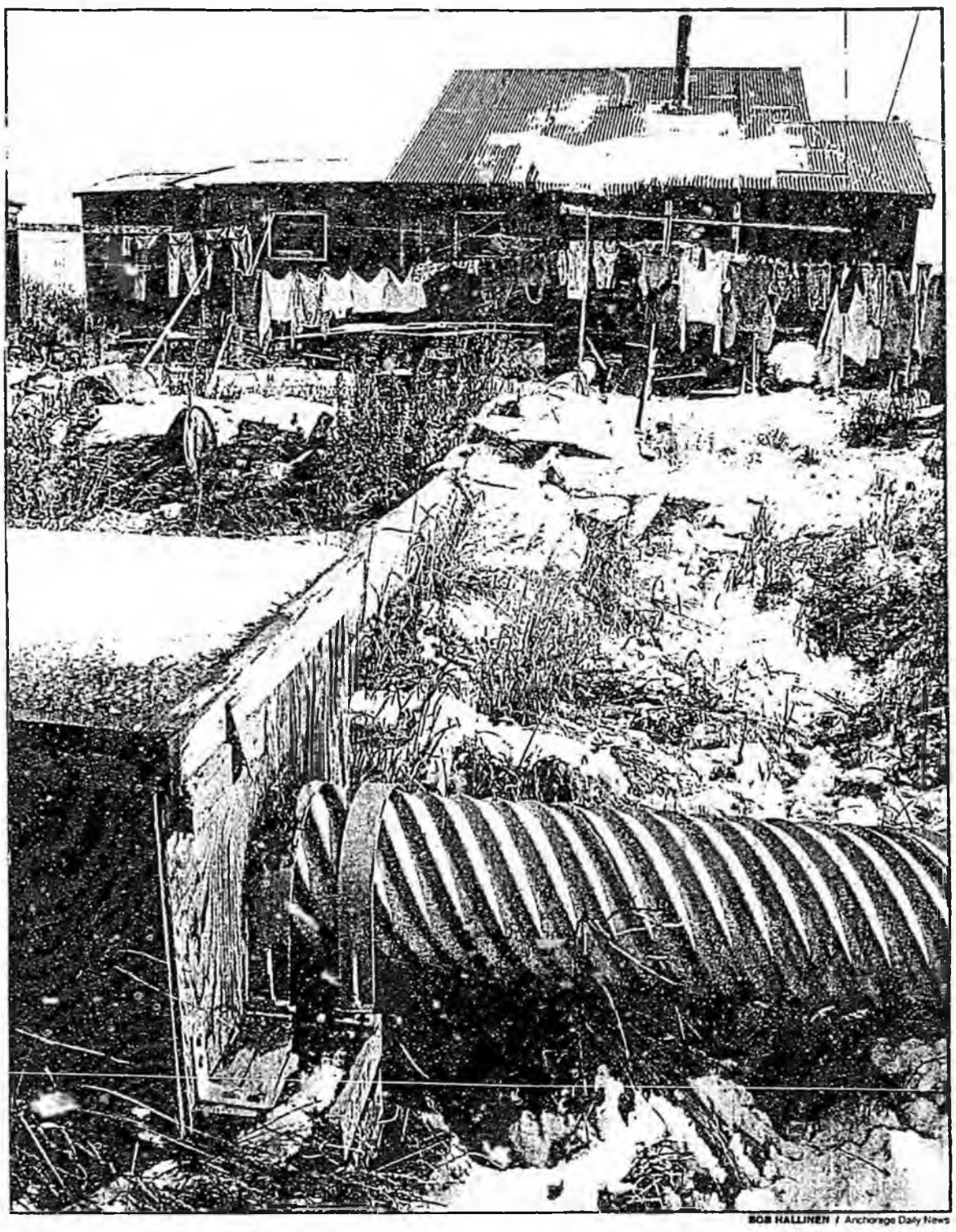
President, Yukon-Kuskokwim Health Corp

"I could count on my hands the number of times in the past month that a kid out here in the delta has had a glass of water. They drink pop. People don't drink water like they should because good water just isn't available or it's such a hassle to get. . . . There's a real unawareness in the state and in the rest of the country about the conditions. It's probably not feasible that every village out here is going to get piped utilities. The availability of money just doesn't make it practical. But I think there's got to be a lot of room for these villages to get somewhere between piped utilities and honeybuckets."

JIM CRUM

Director, Division of Sanitation Facilities, Office of Environmental Health and Engineering, U.S. Public Health Service for Alaska

"Health conditions (in rural Alaska) are not as good as in the rest of the U.S. or in urban Alaska. They are better than in Third World countries. Environmental health is not the problem it was years ago. . . . Native culture itself is unique and rapidly changing. We all must understand these changes in order to solve the social problems. . . . We design, build and test new approaches to solving problems in the physical environment of the Arctic. That's the easy part of engineering. The difficulty lies in the operational and cultural aspects of making the solutions work."



BOB HALLINEN / Anchorage Daily News

'Utilidor' pipeline is pictured in front of a home in Emmonak. Most of the village's homes are now hooked up to the water and sewer system, and a government grant has been obtained to hook up most of the rest of the homes this fall.

CLEAN: System cost, viability examined

Continued from Page A-6

broken pipe and then try and fix the pipe," said Capito, of the state's village water program. "Well, that ain't what's broken. . . . The problem is much larger than that broken pipe."

Native leaders and government officials increasingly talk in terms of "community development" as a way to solve water and sanitation problems. The answer, they believe, isn't necessarily to spend another billion dollars to construct modern, maintenance-intensive systems in each village. Rather, they think it has more to do with helping villages figure out what people want and what they can maintain, then help them achieve it.

For some villages, that may mean expensive piped systems, like Emmonak's. For others, it may be less expensive, more practical systems, such as central watering points and honeybucket pickup.

"People who choose to organize and live in rural communities have as much right to state and federal public-works money as anyplace else," said Anne Walker, executive director of the Alaska Native Health Board, a Native-run agency that works on behalf of rural health organizations.

"But the question that has to be asked is, 'OK, we received these dollars. What are we going to do to make sure the project is viable, that it can work, that we can afford it and keep it going?' "

Jim Crum, a public works engineer who directs village water and sewer projects for the U.S. Public Health Service in Alaska, said government agencies are learning that they can't simply install projects and walk away. As government construction funds get tighter, money will not be doled out without more and more questions being asked about a community's ability to maintain systems.

"The successful engineers need to have an understanding of both the physical and social sciences," Crum said. "You're basically dealing with developing cultures in a lot of places. . . . What works down below is not necessarily going to work at all up here."

The problem, however, is that some of the villages with the worst needs may also be the ones least able to maintain new systems. What's the solution?

Nobody is sure.

EASIER SAID THAN DONE

Officials within the administration of Gov. Wally Hickel — like the people in several administrations before his — say they want to make clean water and improvements in sewer systems a top priority of state government. In the months following his election, Hickel was harshly criticized by residents of rural areas, who saw his talk of building a water pipeline to California an insult when more than 100 communities in Alaska had no running water. In recent months, state officials have been spending an increasing amount of time looking for solutions.

John Sandor, commissioner of the Department of Environmental Conservation, said he wants "to eliminate honeybuckets as an accepted way of disposing of wastes in Alaska. That just shouldn't be acceptable to people."

But it's much easier said than done. For every village like Emmonak — and there are a number of them, according to state officials and villagers — there are many other communities with chronic water and sewer maintenance problems or no systems at all, or with residents unwilling to pay for service, or with governments unwilling to impose service fees.

Fixing the problem will be extremely expensive at a time when declining oil revenue means state spending will have to be cut. Pressure to cut federal spending is also high.

A report by the DEC earlier this year estimated that it would cost up to $50 million a year over the next 17 years — more money than the state has spent on such projects in four of the past five years — to upgrade all of the villages to either piped or truck-haul systems. The DEC is recommending that the work be done in steps, with first priority to build washeterias or honeybucket-haul systems in the nearly 50 villages where residents drink untreated water and dump their own toilets.

A state task force appointed by Sandor has been meeting now for several months, with more than 35 representatives from government agencies, villages, private companies and elsewhere trying to find a solution. A lengthy report outlining the state's new policy is expected in early October, and the plan will be a major topic at the annual Alaska Federation of Natives convention next month.

Among the draft recommendations: continue state funding of water and sewer projects at existing levels; increase the emphasis on individual household water and toilet systems with water delivered and sewage hauled away, rather than more expensive piped systems; improve the way agencies work together and with villages; improve training of village system operators; explore the idea of a state subsidy for water and sewer plant maintenance and operation of systems by village or regional corporations.

"I've heard people ask, 'Why are you bothering with these little communities, why spend so much money on it? People have lived out there like that for centuries,' " Sandor said.

"Well, it's a matter of basic human health. If it's an established community, it's the responsibility of the state and federal governments to assure that people have safe water to drink and safe sewage disposal."

Improvements will take years. Support from urban legislators for village projects could become increasingly difficult as budgets get tighter.

"It's going to be real difficult, frankly, to pull it off," said Capito, of the DEC's Village Safe Water Section. "Anybody who thinks this is going to be fixed in a year and a half is in for a surprise."

HINDERING PROGRESS

Ultimately, it's difficult to talk about village water and sanitation issues without also raising questions about the future of many of Alaska's rural communities.

Many villages are rich in poverty and heavily dependent on government aid. Populations are growing rapidly in many regions. And, increasingly, people who are familiar with the problems of many rural Alaska villages — from alcoholism to bad schools to suicide — believe stronger economies must develop if the quality of life is to improve.

Lack of reliable water supplies and human-waste disposal has hindered economic development in some places, said Perry Eaton, a Kodiak Native and president of the Community Enterprise and Development Corp., a cooperative which works with villages to establish new business.

"As a state, we just haven't done a very good job of developing basic infrastructure," Eaton said. Lack of large quantities of safe water has hindered development of the seafood-processing industry in some communities, for example. More villages are looking to tourism as a simple way to pump money into their communities. But some are finding that it's difficult to attract visitors to communities without running water or toilets.

"The world at large expects certain standards and a lot of rural Alaska doesn't meet the simplest standards of western European travel, let alone more demanding standards like the Japanese would expect," Eaton said.

"In that sense, there's not a hell of a lot of differences between some of our villages here and those in Africa."

Larry Merculieff, former commerce commissioner under Gov. Steve Cowper and now the city manager at Saint Paul, was chairman of the state task force. He said the state should develop a long-term policy for fixing village problems — and soon.

"It's going to be a growing problem," Merculieff said. "We have rapidly declining state and federal funding and rapidly growing populations. Things are going to just get worse unless we do something. There's little cooperation between the agencies — it's a formula for failure. We've got to take stock of where we are now because things just aren't working."

Anchorage Daily News

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Michael Carey, Editorial Page Editor
Patrick Dougherty, Managing Editor

Katherine Fanning, Editor and Publisher 1971 to 1983
Lawrence Fanning, Editor and Publisher 1967 to 1971

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The Bush

Back to the basics in rural Alaska

Fixing Alaska's deficient water and sewer systems is a challenge that's both simple and enormous — as simple as making it possible for everyone to wash their hands, and as enormous as repairing the breakdown of a whole culture.

Washing one's hands several times a day is easy in the city. But it's a major chore — in fact, sometimes an impossible one — if a family's water is stored in a single container for many uses, it's not hot and there's no faucet. Lacking the ability to wash away germs leaves villagers vulnerable to the diseases that ravage whole communities in the bush, such as hepatitis.

Every town doesn't have to have silver-plated sewer pipes and brass fixtures on the toilet. But it is the obligation of the state and federal governments to provide at least a basic level of service.

Some villages do have sanitary, well-run systems, as hard as it is to develop them. The critical point doesn't seem to be whether the town is using portable honeybuckets or has actual pipes running between houses to carry water and sewer. A functional system depends in the end on the commitment and organization of the villagers.

For example, a strong local government, whether based in tribal traditions or subunits of the state, can help a village to secure what it needs from outsiders, especially the state and federal governments.

A town that has strong leadership is able to nurture the economic development that good water and sewer systems make possible; to educate young people who can maintain and improve the village's modern conveniences; and to deal with circumstances like cutting off service to your uncle who hasn't paid his bill.

Most of all, villagers need a strong commitment to work through the interminable meetings, studies and bureaucratic by-ways that lead to a sewer system.

Emmonak, a town of 700 on the Yukon Delta, is a case in point. The people of Emmonak first began lobbying for a safer sanitation system because they were afraid exposed sewage was making people sick. It took seven years, persistent lobbying, endless meetings with contractors and government officials, and even a self-imposed sales tax before the system could be built. Individual households couldn't afford the whole cost of about $100 per month, so Emmonak decided to charge $50 per month and make up the difference with a sales tax.

Every town doesn't have to have silver-plated sewer pipes and brass fixtures on the toilet. But it is the obligation of the state and federal governments to provide at least a basic level of service, so that mothers don't have to worry about their children stepping in sewage when they play hopscotch in the yard.

Thankfully, the Hickel administration seems to have moved beyond a piecemeal approach and is looking at needs statewide. A task force is developing recommendations that include specific goals and priorities. State officials estimate that another $1 billion could be spent to upgrade bush sewer and water systems. That's on top of the $1.3 billion government agencies says they've already spent on sanitation systems.

A daunting process lies ahead — designing all of these systems, getting commitments from villages to pay for their operation and maintenance, and commitments from legislators and bureaucrats to build them. With declining state revenues, it's tempting to say it just can't be done. But it must be done. The answer is to press ahead a little at a time. The Hickel administration is off to a good start.

MAR 24 1993

WALTER J. HICKEL, GOVERNOR

OFFICE OF THE COMMISSIONER
410 WILLOUGHBY AVE., #105, JUNEAU, AK 99801-1795

Phone: (907) 465-5050
Fax: (907) 465-5070

DEPT. OF ENVIRONMENTAL CONSERVATION

March 5, 1993

The Honorable Randy Phillips
Alaska State Senate
State Capitol, Room 103
Juneau, AK 99801-1182

Dear Senator Phillips:

On February 26, 1993 the Senate Rules Committee, at the request of the Governor, introduced Senate Joint Resolution No. 25. The Resolution urges the federal government to assist the State in a long-term comprehensive effort to improve sanitation conditions in rural Alaska.

Specifically, SJR 25 asks President Clinton to direct the Environmental Protection Agency to join the State in a partnership to finance and implement a long-term strategy to improve sanitation conditions in rural Alaska. It also requests President Clinton to ask seven federal agencies for the funding and resources needed to achieve the State's rural Alaska sanitation strategy.

As Chair of the Senate Community and Regional Affairs Committee, I hope it will be possible for you to schedule a hearing on this issue in the near future.

I have enclosed a briefing packet on the rural sanitation issue for your review and would appreciate the opportunity to meet with you to discuss this problem and the strategies developed by the Alaska Sanitation Task Force.

With passage of this resolution, we can send a unified message from the State of Alaska to the Clinton Administration asking for federal assistance to address this tremendous health and environmental problem. As the new Administration is still formulating its priorities, I believe time is of the essence in bringing this issue to their attention.

Please contact Janice Adair in our office at 465-5000 to let us know when this resolution will be scheduled, or if you need any further information.

Sincerely,

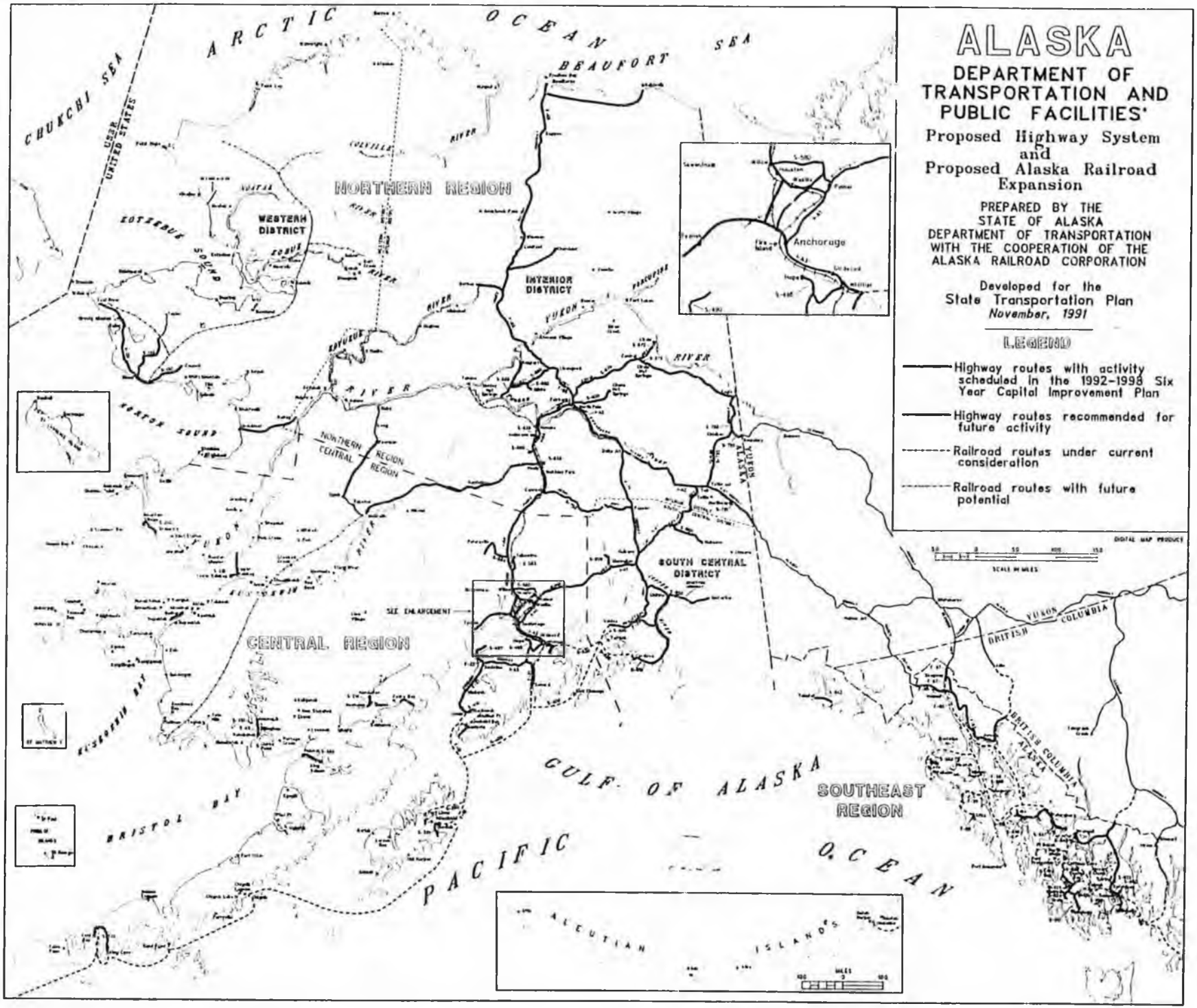
Janice Adair

John A. Sandor
Commissioner

LT/vr (fco\clerical\legislat\phillips)

Enclosure

cc: The Honorable Robin Taylor, Alaska State Senate
The Honorable Rick Halford, Alaska State Senate
The Honorable Al Adams, Alaska State Senate
The Honorable Fred Zharoff, Alaska State Senate
Kris Lethin, Legislative Liaison, Governor's Office


ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Proposed Highway System and Proposed Alaska Railroad Expansion
PREPARED BY THE STATE OF ALASKA DEPARTMENT OF TRANSPORTATION WITH THE COOPERATION OF THE ALASKA RAILROAD CORPORATION
Developed for the State Transportation Plan
November, 1991
LEGEND
Highway routes with activity scheduled in the 1992-1998 Six Year Capital Improvement Plan
Highway routes recommended for future activity
Railroad routes under current consideration
Railroad routes with future potential
ARCTIC OCEAN
BEAUFORT SEA
CHUKCHI SEA
NORTHERN REGION
WESTERN DISTRICT
INTERIOR DISTRICT
SOUTH CENTRAL DISTRICT
CENTRAL REGION
SOUTHEAST REGION
NORTHERN REGION
CENTRAL REGION
Anchorage
SEE ENLARGEMENT
GULF OF ALASKA
PACIFIC OCEAN
BRISTOL BAY
KOTZEBUE SOUND
NORTON SOUND
YUKON RIVER
KUSKOKWIM BAY
ALEUTIAN ISLANDS
YUKON
BRITISH COLUMBIA
ALASKA
SCALE IN MILES

WALTER J. HICKEL
GOVERNOR

P. O. Box 110001
Juneau, Alaska 99811-0001
(907) 465-3500

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

December 17, 1992

The Honorable Ted Stevens
United States Senate
522 Hart Building
Washington, DC 20510-0201

Dear Ted,

A little over a year ago, I asked Commissioner Sandor of the Department of Environmental Conservation to put together a multi-disciplinary task force to look into ways of improving the tremendous sanitation problems experienced in our state's rural communities. He assembled a 45-member team representing over 25 state, federal, and Native organizations. Through the dedicated efforts of these experienced professionals, Alaska now has a long-term, well-defined rural sanitation strategy.

It's an ambitious but realistic strategy which has gained strong support from the Alaska Federation of Natives and the Alaska Municipal League. My Rural Development Subcabinet has also endorsed it.

I am committed to implementing this plan and would appreciate your assistance in securing a parallel federal commitment.

I realize federal resources are tight, but I believe the funding plan we are proposing is prudent. Given the willingness of Congress to limit the state's ability to develop our natural resources and thereby generate royalties and revenues to pay for solving this problem on our own, I think this funding request is more than reasonable.

Specifically, I am requesting your assistance in securing a five-year federal commitment which matches the state's allocation of $25 million per year for improving water and sewage systems in rural Alaska. A percentage of the federal appropriations should be designated to fund the state's efforts to provide the training and support necessary to ensure the proper community planning, operation, and management of these facilities. When compared to the millions of federal dollars currently being spent for water and sewage projects in such areas as Tijuana (over $120 million this year alone), I think everyone would agree our request is reasonable, and Alaska's sanitation needs are as great or greater.

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.

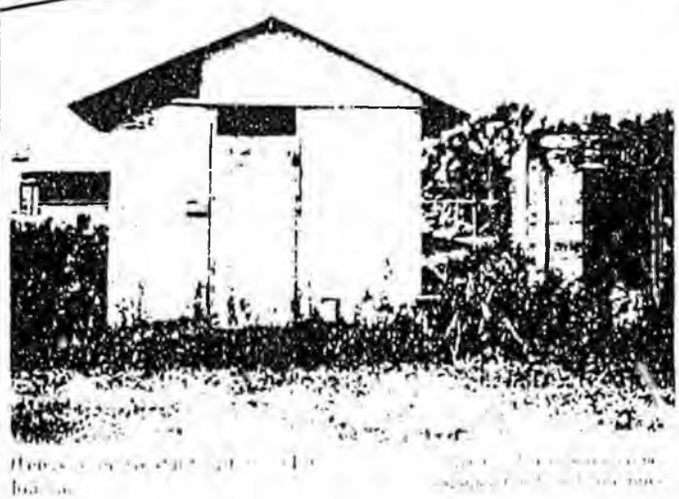
Seventy percent of the colonia inhabitants live without access to any utility-neither fresh water nor sewage hookups, neither gas nor electric power-and their community (largely flat without drainage infrastructure) has unpaved roads that flood frequently, swamping outhouses, cesspools, and primitive 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.

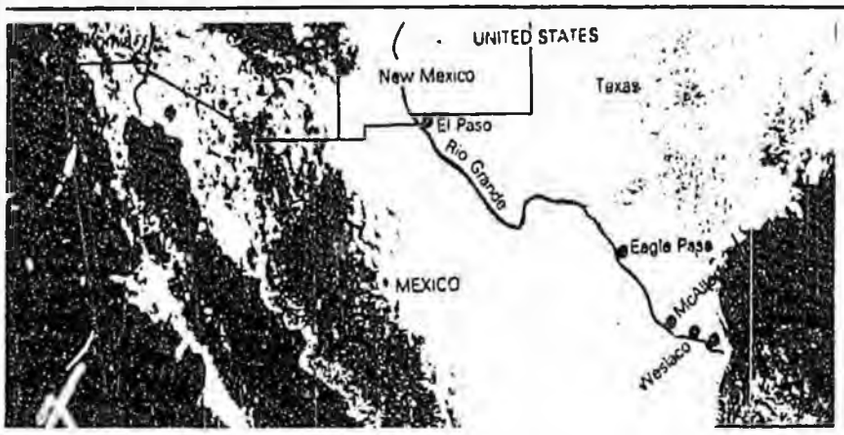
An Interagency Task Force has been formed to develop a comprehensive plan for solving the dire sanitation needs of Alaska's villages. Though the federal government has participated in developing Task Force recommendations, federal funding has not been earmarked to implement the plan.

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

Table of Contents

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".

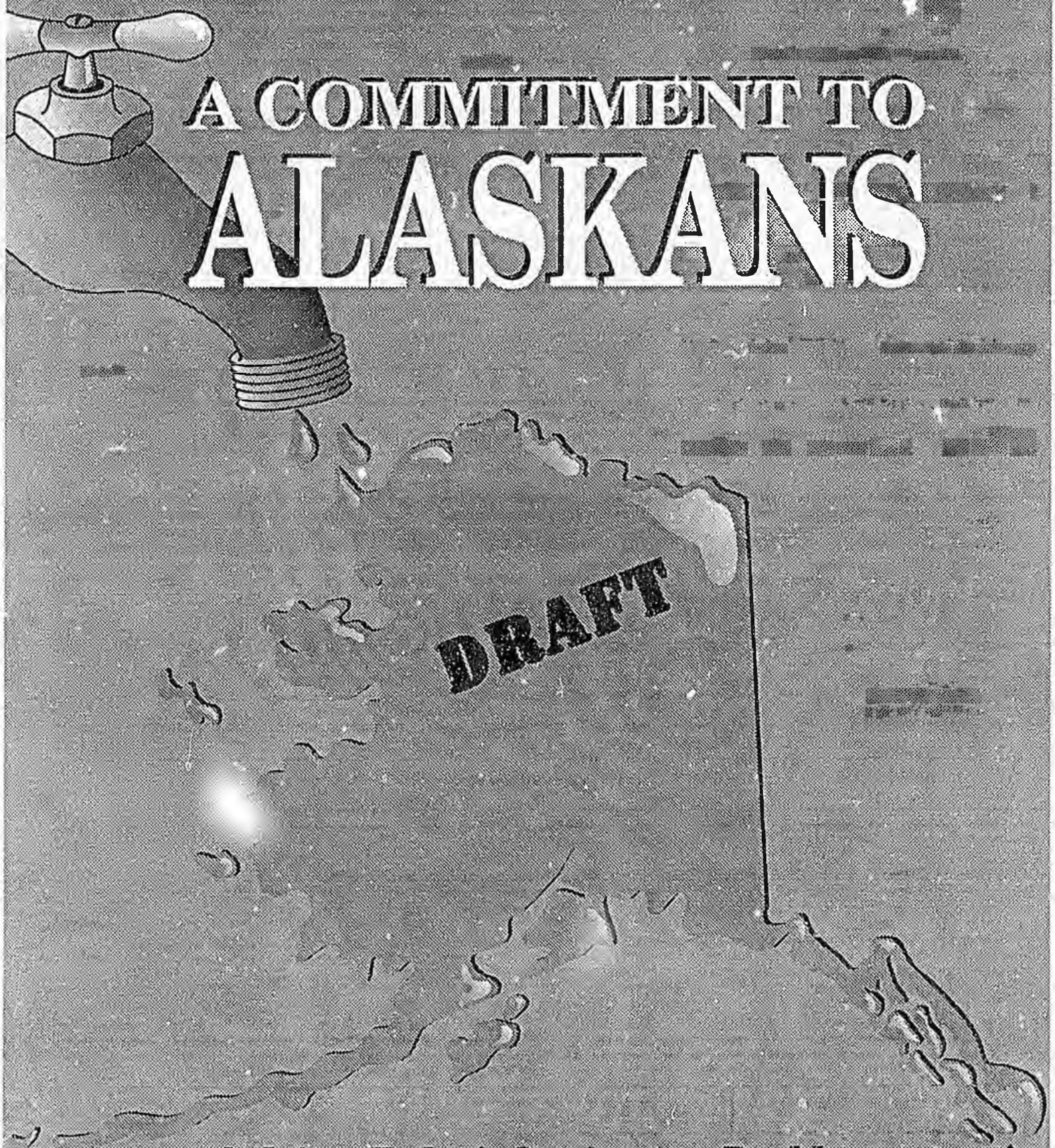
The workgroup concluded that (a) alternative technologies exist, however, conditions are so diverse that there is no single technology available nor was a "black box" found to solve all of Alaska's rural sanitation needs and (b) successful application of available technology is not strictly a technical 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:

John Sandor, Commissioner
Alaska Department of Environmental Conservation
410 Willoughby Avenue
Juneau, AK 99801

Phone: 465-5050
Fax: 465-5070

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:

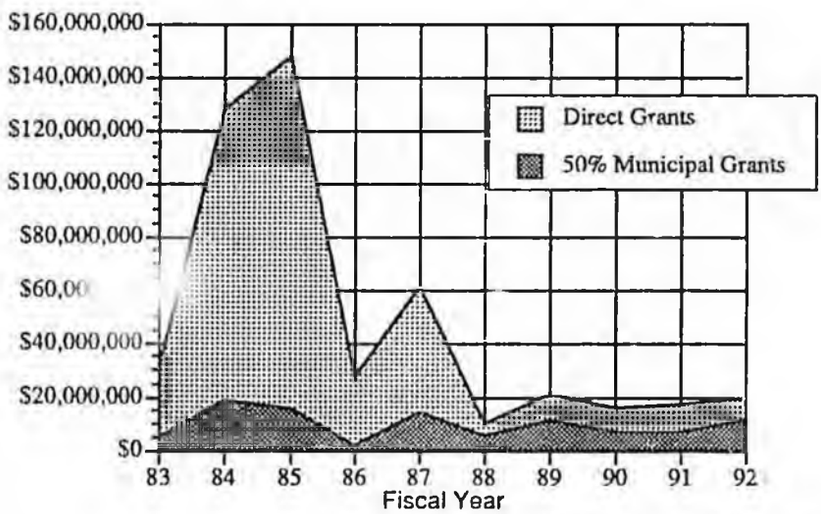
- **Stabilize funding for sanitation infrastructure.**
- **Optimize the State's investment in sanitation facilities.**
- **Promote State/Community partnerships**
- **Develop a planning database.**

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*



* excluding 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.

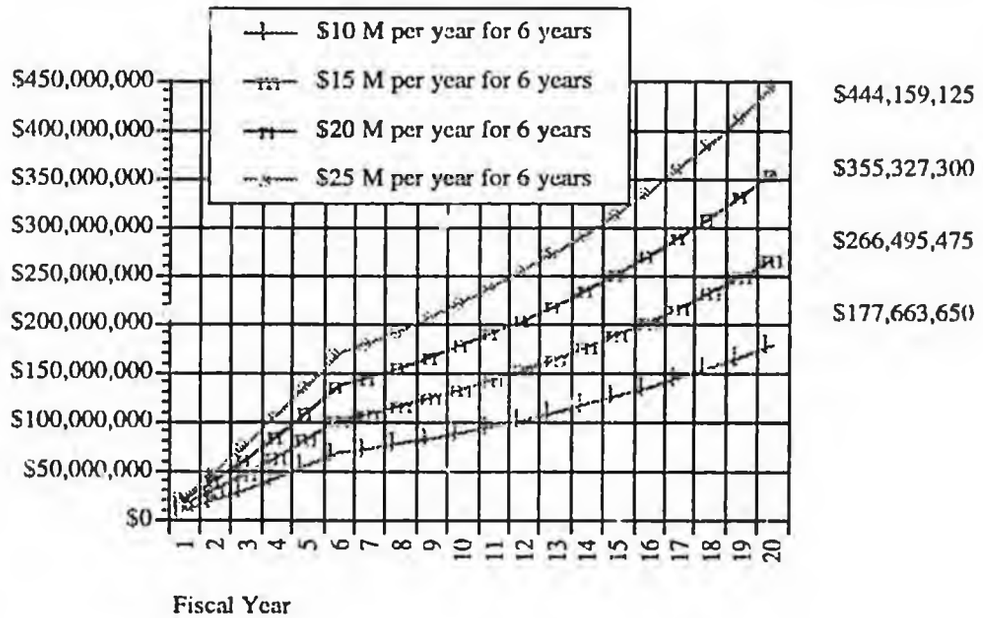
Objective 2 Capitalize the State Construction Loan Program.

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?

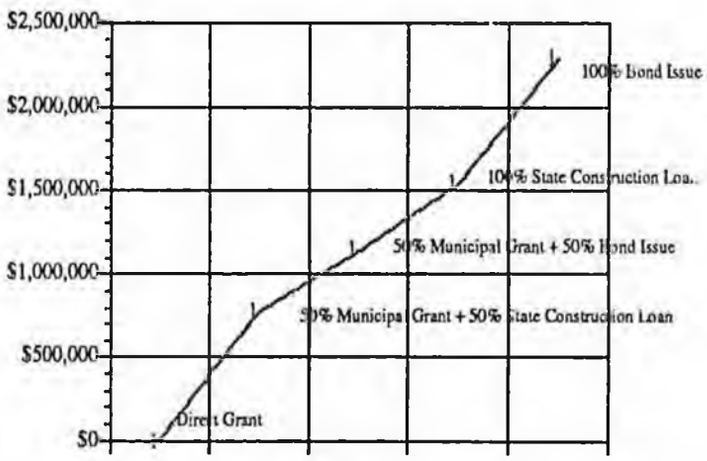
Like any revolving loan prog ,pecific amount is appropriated to capitalize the fund. These monies are then loaned to communities for a specific purpose-in this case, to plan, design and construct water, sewerage, and solid waste management projects. Once a project is completed, communities have one year 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

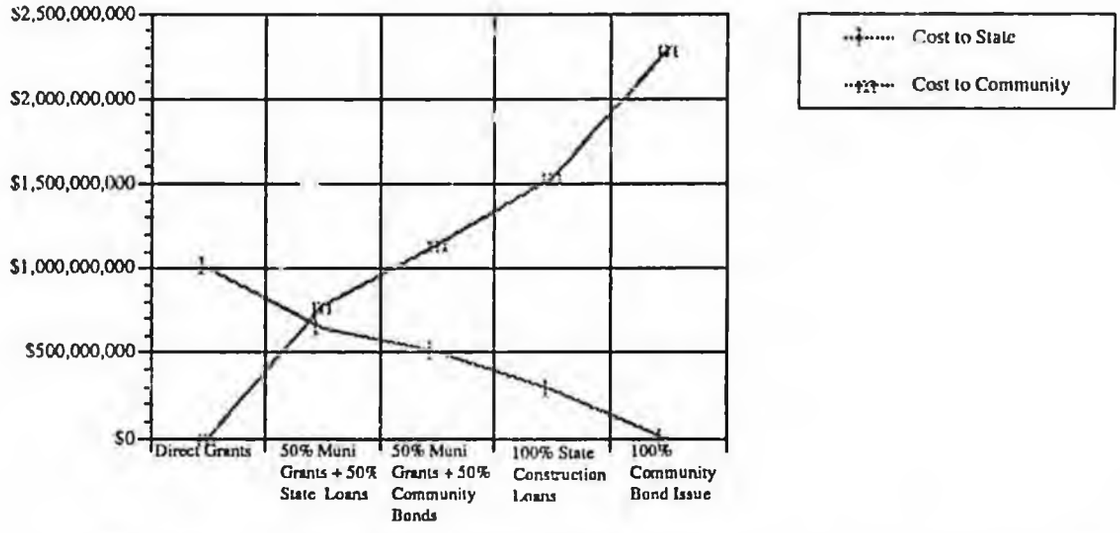
Objective 3 Promote an equitable solution to capital project financing.

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

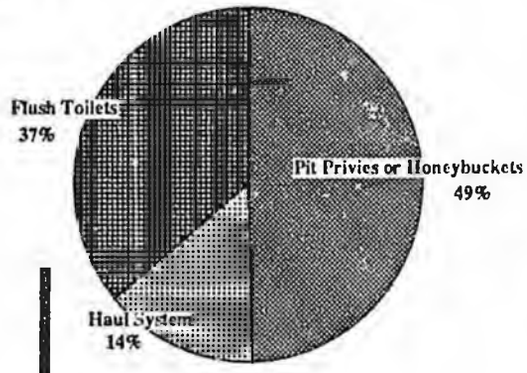
One of the indicators often used to measure the quality of life in a community is the public service infrastructure provided to residents. Carrying a sloshing bucket of human waste to pitch in a pond or hauling water from a watering point would not be acceptable to the vast majority of Americans, yet 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

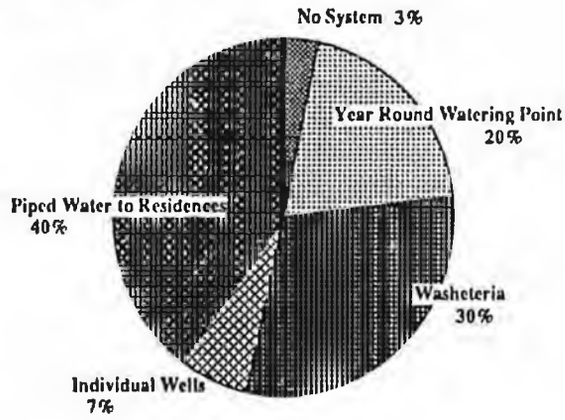


Sewage disposal methods in 63 percent of the State's villages are substandard to flushing toilets. Fourteen percent of the State's rural communities operate a **sewage haul system.** This basic collection/disposal service consists of residents hand-hauling filled honeybuckets to mobile dumpsters located 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.

Estimated Timeline for Solving Unmet Needs

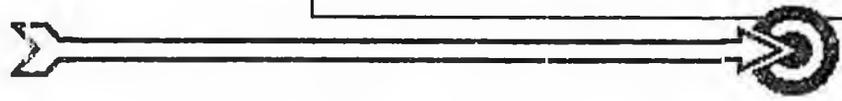
1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

- Interagency Task Force Recommendations

(recommendations available for the Fall 1992 AFN Convention)

- Upgrade Level 1Water Systems (water point) to Level 2 (washeteria/ honeybucket haul)

- Upgrade Level 2 Systems (washeteria/haul systems) to Level 4 (piped o. trucked services)



- Upgrade Level 4 Systems (piped or trucked services) to full compliance with federal water standards.

- Upgrade all systems to full compliance with federal water standards

Data not available to make projection.

- Solid Waste System Upgrades

- Piped or trucked services in all communities which desire the services and are capable of operating and maintaining the systems.

Service Levels Defined	Communities Served
Level 1water = non treated or watering point	48
Level 1sewer = pit privies or honeybuckets	103
Level 2 water = washeteria	63
Level 2 sewer = community sewage haul system	29
Level 3 water = individual wells	15
Level 3 sewer = on-site septic systems*	
Level 4 water = piped/truck haul	92
Level 4 sewer = piped/truck haul	78

*included as flush systems for purposes of this report.

Assumptions:

1) $50 million available per year from all known sources..
2) Time lines will be shortened if additional funding is obtained..

GOALS:

The following goals have been identified as cornerstones to addressing the sanitation problems of rural Alaska:

- Provide adequate water, sewerage, and solid waste services in every Alaskan community.
- Improve public health and quality of life.
- Optimize State and federal funding.
- Provide infrastructure vital to economic development.
- Increase facility operation , maintenance, and management capabilities.

The Department recommends the following six Action Strategies as solid practical steps toward achieving these goals:

- Form an Interagency Task Force.
- Commit to a State/Federal/Community Partnership.
- Stabilize funding for rural sanitation projects.
- Assist communities increase operation and maintenance capabilities.
- Investigate and promote new technology.
- Develop a systematic approach to addressing needs.

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 throughout this plan.

During the first year of the proposed plan, the recomendations of the Interagency Task Force will be developed. These recommendations will be integrated into the State's implementation strategy during the balance of the planning period.

ACTION STRATEGY:
Form an Interagency Task Force.

Due to the magnitude of sanitation needs in rural Alaska, a unified, multiagency approach to problem solving is necessary. An Interagency Task Force will be established to review, analyze, and recommend policies, standards, and solutions for formulating a federal/State/community twenty year rural sanitation strategy. The Task Force will consist of individuals, groups, and agencies representing a variety of interests and disciplines. Representation will include State and federal agencies, local officials, the Legislature, the University of Alaska, Health Corporations and rural leaders. Participation, input and recommendations from experts in the areas of engineering, housing, finance, business, health and education will provide the Task Force with the policy direction necessary to develop a comprehensive twenty year strategy for meeting the water, sewerage, and solid waste needs in rural Alaska.

Because of the complexity and number of issues at hand, the Task Force will work more efficiently if divided into several subgroups. Each subgroup will be assigned specific issues to analyze and will be responsible for reporting recommendations to the full Task Force for inclusion in the States rural sanitation strategy. During the first year of the strategy, the Department will concentrate on obtaining program direction from Task Force recommendations on the following:

Objective 1 Establish uniform standards for federal and State housing

The existing minimum water and sewerage service standards of State and federal housing programs will be reviewed by the Task Force. Current standards will be examined for compatibility with the State's overall goal of providing water, sewerage, and solid waste services to every Alaskan community. Where current standards are inadequate, specific parameters will be recommended as minimum health requirements.

If adopted, these parameters would be required in every new home constructed in Alaska by federal and State housing authorities. Additionally, methods for modifying plumbing in existing homes which do not meet the minimum code will be explored.

Objective 2 Develop a policy for subsidizing the operation and maintenance of village owned facilities.

The Task Force will review the feasibility of providing a subsidy program for operation and maintenance of village sanitation facilities. Many villages do not have the population or economic base to adequately budget for operation, maintenance and replacement costs related to providing sanitation services. These costs will be reviewed and compared to the average household income in each rural region of the State to determine an equitable solution to O&M budgeting. The cost of subsidized O&M will then be compared to the cost and benefits achieved though expansion of the Remote Maintenance Worker Program.

Objective 3 Recommend policies for promoting water quality testing and monitoring.

In recent years, an average of 300 incidents per year of poor quality water have been documented from community drinking water systems throughout the State - water containing everything from fecal coliform to leeches. The importance of detecting public drinking water deficiencies early is obvious. Early detection allows immediate mitigative measures to be taken to protect public health. Without testing and monitoring, contamination of a community's drinking water supply may go unnoticed until cases of illness are reported.

Based upon the recommendations of the Task Force, the Department proposes developing a program to provide:

- Treatment and testing equipment to system operators in every community;
- Training for water system operators regarding testing/sampling requirements and techniques;
- Community access to bacti laboratories; and
- Incentives for local governments to sample and monitor the quality and safety of their drinking water.

Objective 4 Provide detailed recommendations regarding the level of local commitment which should be required by State sanitation construction grants.

The Task Force will consider the level of local commitment which should be required for rural sanitation projects. Currently, rural communities do not provide match for water, sewer, and solid waste projects. Rather, these projects are funded entirely by the State or federal government. The Task Force will study: (a) the practicality, feasibility, and impacts of making local matching funds a grant requirement; (b) the level of local participation which should be committed to project construction; (c) the application of in-kind services as an alternative to match monies when a community does not have the financial capability of providing even a minimum funding match; and (d) whether the enabling statute for the Village Safe Water Program which now specifically states "A contribution toward the cost of the construction of a facility may not be required from its users" should be amended.

Objective 5 Develop and institute a sanitation education curriculum.

Breaking the cycle of water borne disease in remote communities takes more than capital projects - a health education program is needed to augment ongoing construction activities. The Task Force will explore working with the Department of Education, the U.S. Public Health Service, and local school districts to develop and implement a complete "health education kit" including videos, posters, and text books. These materials would be made available to teachers in remote locations to educate children of the importance of personal hygiene, safe drinking water, proper sewage disposal, and adequate solid waste management.

It is suggested that health education become an integral part of all sanitation construction projects in rural Alaska. The whys and hows of properly using new facilities as well as information regarding communicable diseases (what they are, how they are spread, and how to prevent contacting them); the water cycle; the importance of boiling non-treated drinking water; and the importance of separation distances between places where water is obtained and where sewage or solid waste is hauled would be among the topics explored.

Objective 6 Improve roads in communities where haul systems are the selected alternative.

Geographic, climatic, and economic conditions in many rural communities make piped utilities impractical or infeasible. In such cases, residents frequently select water and sewer haul systems as preferred project alternatives. Haul systems require roads with bearing capacity adequate to handle large water and sewage transportation vehicles. Unfortunately, many of the communities who desire haul systems, either do not have roads or have roads which do not now have adequate bearing capacity.

The Task Force will explore coordinating funding and resources with the U.S Public Health Service, the Bureau of Indian Affairs and the Department of Transportation in order to construct new gravel roads or improve the bearing capacity of existing roads in communities where haul systems are the preferred alternative to piped systems.

Objective 7 Develop utilities for joint use by villages and schools.

In many villages, two separate water and sewer systems are operated. One provides service to the community and the other to the school. As a result there are two treatment plants, two wastewater collection and disposal systems and dual plumbing, heating and electrical systems to support them.

Based upon the recommendations of the Interagency Task Force, the Department proposes identifying those communities where dual systems exist; examining the requirements of each; and determining where joint utilities are cost effective and practical. It is further recommended that a joint utilities pilot study be conducted by REAA's prior to applying the "joint utilities" approach in several areas.

Objective 8 Explore State/Regional and Village Corporation Financial Partnerships.

Many communities do not have the economic base to assist in financing sanitation projects. The Corporations which represent village residents, however, may have the resources to assist. The task force will explore the possibility of forming a financial partnership between the State and Regional and Village corporations for funding rural water, sewerage, and solid waste projects.

Objective 9 Recommend the conditions under which Direct Grants may be used as a funding alternative.

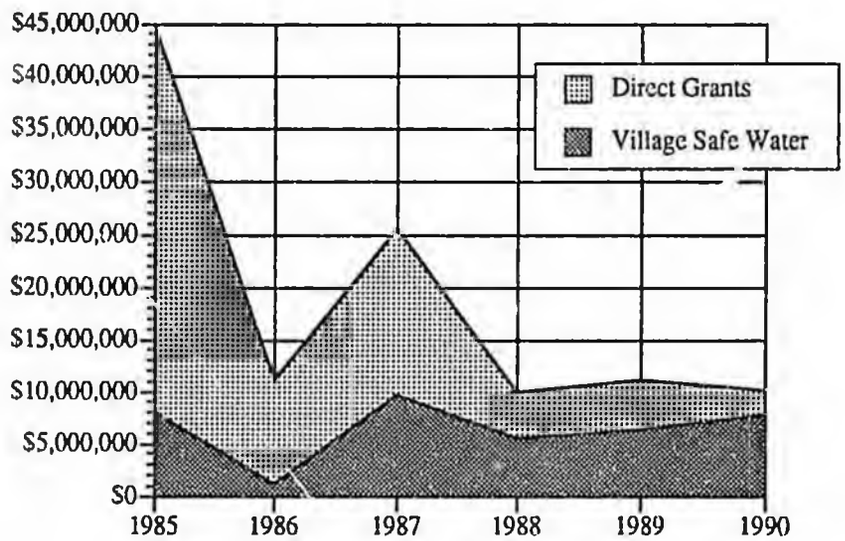
The task force will determine the circumstances under which direct grants are an appropriate mechanism for funding rural sanitation projects. Based upon this analysis, the task force will develop and recommend a policy specifying the situations under which the use of direct grants should be considered.

ACTION STRATEGY:
Stabilize funding for rural water, sewer, and solid waste projects.

It is virtually impossible for the State to enter the twenty-first century with hopes of providing every Alaskan community with adequate sanitation services without a stable funding commitment for the construction of necessary facilities.

As shown in the graph below, State and federal funding of rural 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 water, sewerage, and solid waste projects. The unpredictable nature of this "boom and bust" funding cycle has made long term capital improvement planning virtually impossible for local governments. Likewise it does not allow for a systematic, long term Statewide approach to address community sanitation needs.

History of State Funding for Rural Sanitation 1985-1990



By committing to a stable Village Safe Water capital budget, the State, federal, and local governments will be better able to plan for and finance public sanitation projects.

ACTION STRATEGY:
Commit to a State/federal/community partnership.

It is essential that community participation in a project go beyond signing a grant offer or adopting a resolution. It is equally vital that State and federal roles transcend simply disbursing payments.

Objective 1 Build a partnership through local commitment.

Experience has shown that communities who actively participate with funding agencies in addressing their sanitation needs are more likely to adequately operate and maintain their facilities. If residents feel they have a vested interest in a project, the chances for its success increase greatly. The Department therefore supports requiring a local commitment to the construction, operation and maintenance of sanitation facilities constructed with State and federal funding.

It should be noted, however, that not all communities have the financial resources to contribute funding to the capital costs of a project. It is suggested that in such instances, based upon the recommendations of the Interagency Task Force, opportunities for "in-kind" services be explored.

Objective 2 Budget cooperative between State and federal agencies.

It is recommended that the Department strengthen its budget through cooperation with other State and federal agencies which fund rural sanitation projects. Not only will this effort leverage federal funding available for sanitation facilities, it will also ensure that duplication of effort is avoided.

In the past, the Village Safe Water program has cooperated with the Public Health Service and the Housing and Urban Development Agency in budget development. It is recommended that this relationship be expanded to include the Environmental Protection Agency and the Farmers Home Administration.

Additionally, there are several bills pending in Congress to establish new federal funding programs for sanitation projects in small communities. The Department suggests tracking and monitoring these bills closely and if they gain passage immediately inviting members of the new funding programs to participate in the State/federal budgeting cooperative.

ACTION STRATEGY:
Assist communities increase operation and maintenance capabilities.

The construction of rural sanitation facilities represents a multi-million dollar investment by the State in public health protection for village residents. Increased commitment to the operation and maintenance of these facilities is necessary if rural public health and the State's large investment in sanitation facilities are to be safeguarded. Weaknesses in planning, staffing, and budgeting lead to sanitation system failures as surely as equipment and mechanical breakdowns. Unless this trend is reversed, additional system failures are predicted and a tremendous financial burden will be placed on the State. The Department proposes the following multi-disciplinary approach to help deal with these problems.

Objective 1 Define operation & maintenance capabilities and needs in each community.

Using data obtained from Remote Maintenance Workers, Village Safe Water Engineers, Public Health Service Engineers, Native Health Corporations and community leaders, the Department will assess the operation and maintenance capabilities and needs in each rural community. The Operations Assistance program within the Department will use this information to target training efforts in communities lacking sufficient expertise for operating and maintaining their systems.

Objective 2 Work with State agencies and authorities to develop and implement a utility management training program.

The Department recommends working with the U.S. Environmental Protection Agency, and the Department of Community and Regional Affairs, and the Alaska Energy Authority to develop and institute a management training program to assist rural communities in implementing basic financial, accounting, bookkeeping and management systems necessary to properly manage public utilities. Through the program, local officials would learn to compare revenues to actual costs and adjust user fees accordingly; investigate alternative sources of system revenues; develop utility billing procedures and policies; and institute proper accounting and solid business management practices.

Objective 3 Enhance the Operator Training and Certification Program.

The Department proposes to place increased emphasis on operations assistance to water and wastewater operators in rural areas. By stepping up its training program and offering certification testing more frequently, the Department would be better able to increase the number of certified personnel operating rural systems. The Department recommends providing a higher level of operator training through a variety of efforts including cooperative arrangements with federal and State agencies as well as various institutions of higher learning.

The benefits of expanding the State's Operator Training and Certification program are many. Without adequate training, operators will not be capable of keeping their sanitation systems going. Conversely, a well trained operator will protect expensive systems and ensure a longer useful life for capital projects constructed with state funds. System replacement costs would be further mitigated.

The Department recommends augmenting its current training lending library by developing videos which specifically address Alaska's unique systems and conditions.

As part of the proposed program enhancements, the Department recommends increasing current efforts in the following areas (1) providing hands on training for Remote Maintenance Workers; (2) administering verbal certification exams as needed; (3) providing over-the-shoulder training for operators; (4) providing class room training in regional "hub" areas; and (5) developing a comprehensive, holistic approach to solving operation and maintenance problems associated with village sanitation facilities.

Objective 4 Expand the Remote Maintenance Worker Program.

Most of the State's rural communities lack a public works department, a full time professional water/sewer operator, and in many cases an electrician or plumber. Systems are frequently left in the hands of volunteers who, with limited resources and knowledge, face a wide array of mechanical, environmental, and public health related problems. In areas where climatic, economic, and demographic conditions make operation and maintenance of facilities arduous, technical expertise is of great importance. However, the remote location of most villages makes it economically infeasible for outside services to be obtained when technical assistance is most needed. The Remote Maintenance Worker Program offers a partial solution to this problem.

Currently, the program consists of eight Remote Maintenance Workers (RMWs) who are mechanical experts as well as trainers. Each RMW is assigned a circuit of 10-15 villages and resides in a hub community within their area. Through the efforts of these RMWs, the program employs a two-fold approach to protecting costly facilities and public health.

1. Technical Assistance. Due to the remoteness and climatic conditions found in most villages, even minor operational problems can result in malfunctions that can lead to catastrophic system failure. As technical experts, RMWs are available to villages 24 hours a day throughout the year for advice and emergency repairs.

2. Operator Training. As educators, RMWs provide operators with emergency and routine on-the-job training. Operators are trained at their own speed at a level commensurate with their individual requirements.

The solid commitment and ongoing cooperation of the legislature, the Department of Environmental Conservation, several Native Health Corporations, and rural villages throughout the State is positively reflected in the success of the RMW program.

Unfortunately, less than half of the State's rural communities are serviced by a Remote Maintenance Worker (refer to exhibit *)

The Interagency Task Force will evaluate expanding the RMW program so that within the next five years, all rural communities are served by a Remote Maintenance Worker. This will ensure the protection of rural public health and the State's capital investment in rural sanitation infrastructure. RMW assistance will only be provided until a community has obtained the competence to operate its system without State assistance.

• Insert •

Map showing areas served by an RMW with a listing of villages covered/not covered

ACTION STRATEGY:
New technology- research & development projects.

The Department proposes active investigation and promotion of innovative and alterative technology for the delivery of rural sanitation services. Demographic, economic, and climatic conditions make sanitation construction and operation in rural Alaska among the most expensive and technically challenging in the nation. A research and development program needs to be instituted to develop alternatives to expensive and complex piped systems capable of providing an equal level of service.

Research and development activities should represent a community, State, federal, University and private sector cooperative effort both in funding and design. A multi-tiered approach to investigating and developing new sanitation technologies is suggested.

As the first step in this cooperative effort, the Department advocates sponsoring annual technology seminars where promoters of innovative and alternative sanitation technologies can present their concepts to the engineering community. This would encourage new ideas from manufacturers and designers and would introduce sanitation engineers to nontraditional technologies.

It is suggested that the Interagency Task Force include a research and development subcommittee to review new technologies including those presented during annual technology seminars to determine which merit further study .

As funding allows, those technologies recommended by the subcommittee as showing the most promise would undergo field testing which would consist of three phases. The first phase would include targeting a receptive village to host the demonstration project, a project inception briefing during a council meeting of the hosting community, and (if necessary) fabrication of prototype units. During phase two, prototypes would be installed in the homes of four to ten volunteer families. Phase 3 would consist of project evaluation. If the project is a success and well received by the village, expansion of the technology into the rest of the community would be recommended through the capital budget process.

This phased approach would allow communities to participate in and assess each step of a demonstration project before continuing on to the next phase. Further, it would allow communities to observe and evaluate technologies prior to deciding whether to adopt the new technology on a community-wide basis.

All studies, evaluations, and reports regarding the successes or failures of new sanitation technologies in village Alaska would be made available to interested parties.

ACTION STRATEGY:
Develop a systematic approach to addressing sanitation needs in rural Alaska.

Local communities frequently do not have a realistic current long range sanitation construction plan. Therefore, it is difficult for the State to establish a long term spending plan that includes community specific projects. For that reason, our planning process in the past has been keyed to local government needs as expressed annually through local priorities.

Objective 1 Conduct a Statewide survey of the existing facilities in rural communities.

The Department will conduct surveys of rural communities to develop and update a computerized inventory of the existing level of sanitation service provided in each of the State's rural communities.

Objective 2 Develop a 20 year analysis of community sanitation needs.

The Department recommends developing an assessment of the capital investment necessary to address each rural community's water, sewerage, and solid waste needs. Cost estimates would consider existing levels of treatment (from data obtained during the Statewide survey recommended above) and the types of system improvements currently needed (e.g. upgrades, expansion, or reconstruction, or new construction). In addition to providing cost estimates for addressing today's sanitation needs, the capital investment required to solve future needs would be projected over a twenty year period. Forecasts would consider population projections, system replacement costs, and facility improvements necessary to comply with State and federal requirements.

Objective 3 Develop a comprehensive long range facility funding plan.

The Department recommends incorporating the recommendations of the Task Force and data obtained during the state-wide survey and twenty year needs analysis proposed above into a comprehensive long range facility funding plan. The plan could serve as a basis for the allocation of capital budget funding. It could also be used to assist State and federal agencies in program planning, policy evaluation, and program management. Additionally, it could be used as a tool for local governments in the development of multi-year community capital improvement plans.

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 31

TITLE: VILLAGE SAFE WATER AND SEWER FACILITIES

WHEREAS: many villages throughout the State do not have safe water and sewer systems; and

WHEREAS: the lack of clean water and sanitary waste disposal systems in rural communities are the leading cause of illnesses to the residents; and

WHEREAS: health priorities in the villages without adequate, safe water and sewer systems point to alck of such amenities as the major deterent to the health and safety of their residents; and

WHEREAS: the Environmental Protection Agency and Deparment of Environmental Conservation dictate policy and regulations regarding water quality and waste disposal; and

WHEREAS: these policies and standards must be enforced for the public health, safety and welfare of people living in rural communities;

NOW THEREFORE BE IT RESOLVED that delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., strongly urge the State of Alaska and Federal Government to adequately fund water and sewer projects in the villages where unsafe conditions prevail.

SUBMITTED BY: Association of Village Council Presidents, Inc., Bristol Bay Native Association, and Napakiak Corporation

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 32

TITLE: SUPPORT FOR IMPROVED FUNDING FROM THE STATE OF ALASKA FOR DESIGN AND CONSTRUCTION OF UTILITY ROADS IN REMOTE VILLAGE

WHEREAS: sanitation problems persist in most of Alaska's remote communities; and

WHEREAS: design and construction of water, sewer, and solid waste facilities is necessary to improve public health and stimulate economic development; and

WHEREAS: the Local Service Roads and Trails Program of the Alaska Department of Transportation and Public Facilities is no longer funded; and

WHEREAS: the Federal Highway Administration now allows any public road in Alaska to be eligible for Federal-Aid funding; and

WHEREAS: the Alaska Sanitation Task Force has identified that $100,000,000 is needed to improve utility roads in approximately 100 communities;

NOW THEREFORE BE IT RESOLVED by the delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., that the Commissioner of the Department of Transportation and Public Facilities be requested to allocate at least $3.0 million annually in the capitol budget to support design and construction of utility roads that will facilitate the improvement of water, sewer, and solid waste in remote villages.

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

FEDERATION OF NATIVES, INC. SEAL STATE OF ALASKA

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 33

TITLE: REQUESTING THE STATE OF ALASKA TO REORGANIZE AND CONSOLIDATE THE STATE'S DRINKING WATER PROGRAM

WHEREAS: Alaska has a large number of serious, long-term drinking water violations in the remote villages, and the rate of non-compliance is among the highest in the nation; and

WHEREAS: traditional enforcement methods used in urban areas have not been effective in rural Alaska; and

WHEREAS: this situation severely impacts the ability of the state to ensure that drinking water quality in the villages is safe; and

WHEREAS: the Alaska Sanitation Task Force has recommended reducing the degree of personnel fragmentation in the drinking water program so that funding for 31 full-time positions is not divided among 70 to 80 people; and

WHEREAS: consolidation of these fragmented positions would increase accountability and efficiency within the drinking water program and improve implementation of the state's drinking water program plan;

NOW THEREFORE BE IT RESOLVED by the delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., that the Commissioner of the Alaska Department of Environmental Conservation be requested to take immediate steps to reorganize and consolidate the activities and personnel of the drinking water program to improve the state's compliance record and technical assistance efforts in remote villages.

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 34

TITLE: SUPPORT FOR STABLE FUNDING BY THE STATE OF ALASKA FOR SANITATION PROJECTS

WHEREAS: poor sanitation conditions exist in many remote communities, leading to increased risk of disease; and

WHEREAS: to best address these problems, the Alaska Sanitation Task Force recommends funding for sanitation projects reflect long-term strategic planning and careful decision making; and

WHEREAS: over $2.5 million is needed to finance sanitation infrastructure in urban and rural Alaska over the next 20 years; and

WHEREAS: the Alaska Department of Environmental Conservation (ADEC) is tapping all available federal/state funding sources for construction of sanitation facilities; and

WHEREAS: state funding for sanitation facilities has been erratic during the past ten years, making it difficult to start and finish projects in a timely fashion;

NOW THEREFORE BE IT RESOLVED by the delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., that the Governor and the Office of Management and Budget (OMB) be requested to follow the recommendations of ADEC and commit to a five-year funding plan which includes $22 million per year for the VSW program; $12 million per year for the Municipal Matching Grants Program; and $10 million per year for the State Construction Loan Program; and

BE IT FURTHER RESOLVED that the Governor and OMB be requested to continue to follow a sanitation funding plan which is based on need rather than political considerations.

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 35

TITLE: REQUESTING A PROCLAMATION FROM THE GOVERNOR OF ALASKA THAT SCHOOL AND COMMUNITY WATER AND SEWER UTILITIES BE SHARED IN REMOTE COMMUNITIES

WHEREAS: water and sewer systems are extremely expensive to operate and maintain in remote communities; and

WHEREAS: many small villages have two separate water and sewer facilities; one serving the school and the other serving the community; and

WHEREAS: when two water and sewer systems exist in a small community, economies of scale in plant operations is lost; and

WHEREAS: school districts and communities compete against each other for limited capital project funds to construct these facilities;

NOW THEREFORE BE IT RESOLVED that delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., request that the Commissioner of the Department of Education develop an executive proclamation to be signed by the Governor directing schools and communities to share water and sewer utilities whenever possible.

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC. SEAL STATE OF ALASKA

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 43

TITLE: REQUESTING THE ALASKA DEPARTMENT OF COMMUNITY AND REGIONAL AFFAIRS FUND POSITIONS TO PROVIDE "HANDS-ON" UTILITY MANAGEMENT TRAINING AND ASSISTANCE IN NATIVE VILLAGES

WHEREAS: there have been reported incidents of raw, untreated sewage running in open areas of Alaskan villages and

WHEREAS: there was one death attributed to fluoride treatment in drinking water; and

WHEREAS: poor sanitation conditions exist in many remote communities, leading to increased risk of disease; and

WHEREAS: rural communities have experienced difficulty in collecting user fees and establishing budgets sufficient to cover operating expenses; and

WHEREAS: weaknesses in management are less tangible and precise than technical needs but lead to system failures as surely as do equipment breakdowns; and

WHEREAS: communities often lack the management skills necessary to operate their utilities like a small business; and

WHEREAS: the Alaska Sanitation Task Force has recommended an expansion of the Remote Utility Business Advisor (RUBA) Program to alleviate these problems;

NOW THEREFORE BE IT RESOLVED that delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., request the Commissioner of the Department of Community and Regional Affairs establish a Local Government Specialist position and three Remote Utility Business Advisor positions in the Fiscal Year 1994 operating budget to provide "hands-on" utility management training and assistance in Native villages; and

BE IT FURTHER RESOLVED that said delegates request the State and Federal agencies responsible for health and sanitation in Alaskan villages research and report findings of conditions in villages; and

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 44

TITLE: SUPPORT FOR STATEWIDE EXPANSION OF THE STATE'S REMOTE MAINTENANCE WORKER PROGRAM

WHEREAS: the Remote Maintenance Worker (RMW) Program of the Alaska Department of Environmental Conservation, established in 1984, has been successful in helping communities operate and maintain their water and sewer utilities; and

WHEREAS: successful operation of water and sewer utilities significantly reduces the risk of certain communicable disease; and

WHEREAS: not all communities in Alaska have access to the services of an RMW; and

WHEREAS: rural communities suffer death and illness due to poor operation and maintenance of community watering point facilities; and

WHEREAS: the Alaska Sanitation Task Force has recommended expansion of the RMW program to increase "over the shoulder" assistance to local water and sewer plant operations;

NOW THEREFORE BE IT RESOLVED that delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., urge the Commissioner of the Alaska Department of Environmental Conservation to allocate $120,000 of additional funds in the Fiscal Year 1994 operating budget to provide an expanded RMW program to cover statewide areas.

SUBMITTED BY: Alaska Native Health Board

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 59

TITLE: SUPPORT FOR CONTINUED FUNDING OF THE POWER COST EQUALIZATION PROGRAM

WHEREAS: poor sanitation conditions exist in many remote communities, leading to increased risk of disease; and

WHEREAS: modern sanitation facilities require pumps, motors, and other electrical equipment to operate in Alaska's cold climate; and

WHEREAS: the costs of providing electricity in Alaska's remote communities is very expensive; and

WHEREAS: an increase in rural electrical costs will directly result in the increase of other goods and services thereby affecting the overall cost of living and conducting business in rural Alaska; and

WHEREAS: the Power Cost Equalization (PCE) Program helps reduce the costs of producing and distributing electricity and sanitation services in remote communities; and

WHEREAS: continued cuts in the PCE Program will dramatically increase the cost of operating water and sewer utilities in the bush; and

WHEREAS: the Alaska Sanitation Task Force has recognized the importance of the PCE Program as it relates to providing adequate sanitation;

WHEREAS: the Power Cost Equalization program was created to "equalize" the amount of State funds that have been spent on electrification projects between rural Alaska and the Southcentral Alaska Railbelt;

NOW THEREFORE BE IT RESOLVED by the delegates to the 1992 Annual Convention of the Alaska Federation of Natives, Inc., that the Alaska Legislature and the Governor's Office of Management and Budget be requested to reinstate $3.5 million reduced from the program in 1992; and

BE IT FURTHER RESOLVED that said delegates urge the Alaska Legislature and Governor's office to continue funding the Power Cost Equalization Program at Fiscal Year 1992 levels.

SUBMITTED BY: Alaska Native Health Board and Bristol Bay Native Association

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

ALASKA FEDERATION OF NATIVES, INC.

1992 ANNUAL CONVENTION

RESOLUTION 92 - 78

TITLE: MAINTAIN AND INSTALL WATER AND SEWAGE SYSTEMS IN RURAL ALASKA TO MEET MINIMUM HEALTH STANDARDS

WHEREAS: the Federal and State Governments have neglected to maintain and/or install safe water and sewage systems in rural Alaska; and

WHEREAS: the residents of rural Alaska consequently suffer from a variety of infections and serious diseases as a result of this neglect; and

WHEREAS: many times a person afflicted with these illnesses must seek treatment in area hospitals or The Alaska Native Medical Center in Anchorage, which further drains the diminishing budgets of our health delivery system; and

WHEREAS: it also interferes with the healthy function, care, and education of the children of the family; and

WHEREAS: more than $1.3 billion has been spent on water and sewer systems in rural Alaska in the last twenty years, but many systems have failed because of design flaws and non-maintenance; and

WHEREAS: all Alaskan residents are affected by this problem because Federal, State, and Local budgets must compensate for the social costs of the stated afflictions;

NOW THEREFORE BE IT RESOLVED by the delegates to the 1992 Annual Convention to the Alaska Federation of Natives, Inc. that the State and Federal Governments be be urged to improve and install water and sewer systems so that these systems be deemed safe by Federal and State standards; and

BE IT FURTHER RESOLVED that an effort be made to recruit local residents for training to be certified technicians who would then be qualified to maintain local water and sewer systems; and

BE IT FURTHER RESOLVED that the State be requested to conduct quarterly checks that would result in immediate improvements; and

BE IT FURTHER RESOLVED that a fund be established for the specific purpose of educating Alaskan Native Youth in the fields of Engineering, Sanitation, and Environment, in order to effectively design safe water and sewer systems.

SUBMITTED BY: 1992 AFN Youth Conference

COMMITTEE RECOMMENDATIONS: Do Pass

CONVENTION ACTION: Do Pass

SENATE JOINT RESOLUTION NO. 25

IN THE LEGISLATURE OF THE STATE OF ALASKA

EIGHTEENTH LEGISLATURE - FIRST SESSION

BY THE SENATE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

Introduced: 2/26/93
Referred: CRA, HES

A RESOLUTION

Urging the federal government to recognize the dire water and sanitation conditions in rural Alaska and to become a full partner with this state in improving this health-threatening situation.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS Alaskans living in over 135 rural communities throughout the state have substandard and inadequate water and sewer facilities; and

WHEREAS this lack of basic facilities results in many of these rural Alaskans having to drink untreated water from ponds, creeks, or rivers and having to use a bucket as a toilet or an outhouse as a bathroom facility; and

WHEREAS this lack of basic facilities often results in uncontained sewage pooling in close vicinity to homes, in liquid wastes leaching into the waters used for drinking, and in exposing children to raw sewage in their play areas; and

WHEREAS this lack of basic facilities is causing a critical human health and safety crisis in rural Alaska as evidenced by an alarmingly high incidence of potentially life-threatening diseases, such as hepatitis A and meningitis; and

WHEREAS Alaska's rural population is projected to double by the year 2010, further

compounding this health crisis and exposing many rural residents to diseases that would be preventable with basic sanitation facilities; and

WHEREAS rural Alaska has a history of cycles of waterborne disease epidemics stemming from unsafe water and sanitation systems, and state epidemiologists report hepatitis A is currently beginning another new cycle of that disease; and

WHEREAS the United States Department of Housing and Urban Development continues to design and build homes in rural Alaska without adequate provision for safe sewage disposal or in-home drinking water; and

WHEREAS the commissioner of the Alaska Department of Environmental Conservation established the Alaska Sanitation Task Force, consisting of 27 federal, state, Native, and regional organizations, to analyze these important issues and provide recommendations for action; and

WHEREAS the implementation of the recommendations of the Alaska Sanitation Task Force involves the joint commitment of the state, local and federal governments to improve the living standards, public health, and quality of life of rural Alaskans; and

WHEREAS the governor has directed the commissioner of the Alaska Department of Environmental Conservation and commissioners of other affected state departments to use their best efforts to utilize available resources to address this critical health problem; and

WHEREAS the Alaska State Legislature recognizes the important work done by the Alaska Sanitation Task Force and urges early implementation of the task force's findings and recommendations by the state government in partnership with the federal government, local government, Native regional corporations, and others to address these challenges; and

WHEREAS this state effort will not be successful without the commitment of the federal government to meet its responsibilities and obligations to these rural residents, many of whom are Alaska Natives; and

WHEREAS the federal government, through the United States Environmental Protection Agency, has the capacity to assist in correcting the sanitation conditions in rural Alaska as exemplified by its ongoing efforts in other areas of the country such as the American Southwest Colonias where border town communities are receiving assistance in establishing basic water and sewage facilities; and

WHEREAS a national effort similar to that currently being undertaken in the American Southwest Colonias [is necessary if] residents in rural Alaska [are to no longer be]

Amend #2

↓ add

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from

consigned to substandard sanitation conditions.

BE IT RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to direct the administrator of the United States Environmental Protection Agency to join in a partnership with the State of Alaska to finance and implement a long-term, comprehensive effort to improve sanitation conditions in rural Alaska; and be it

FURTHER RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to ask the Environmental Protection Agency, the United States Department of Housing and Urban Development, the United States Department of Health and Human Services, the Bureau of Indian Affairs, the United States Department of Education, the United States Department of Labor, and the United States Department of Transportation to commit available finances and resources necessary to improve the water and sanitation conditions in rural Alaska by implementing the recommendations of the Alaska Sanitation Task Force.

COPIES of this resolution shall be sent to the Honorable Bill Clinton, President of the United States, and to the Honorable Ted Stevens and the Honorable Frank Murkowski, United States Senators, and the Honorable Don Young, United States Representative, members of the Alaska delegation in Congress.

add additional addresses in the further resolved section and the section on who is to receive copies -

Amendment #3
Dodson

Amendments to SRJ 25

Change the Bureau of Indian Affairs to the Department of the Interior and add the following agencies:

Department of Agriculture
ACTION
Department of Energy
Department of Commerce
Small Business Administration
Office of Management and Budget

Names and addresses of Agency Secretaries:

Carol Browner, Administrator
U.S. Environmental Protection Agency
WH-556, 401 M Street S.W.
Washington, D.C. 20460

Robert B. Reich, Secretary
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

Frederico F. Pena, Secretary
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Henry G. Cisneros, Secretary
U.S. Department of Housing and Urban Development
451 Seventh Street, S.W.
Washington, D.C. 20410

Donna E. Shalala, Secretary
U.S. Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, D.C. 20201

Patricia F. Saiki, Administrator
Small Business Administration
409 Third Street, S.W.
Washington, D.C. 20416

Leon E. Panetta, Director
U.S. Office of Management and Budget
Old Executive Ofc. Building
17th Street & Pennsylvania Ave., N.W.
Washington, D.C. 20503

Richard W. Riley, Secretary
U.S. Department of Education
400 Maryland Avenue, S.W.
Washington, D.C. 20202

Hazel R. O'Leary, Secretary
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Mike Espy, Secretary
U.S. Department of Agriculture
14th Street and Independence Avenue, S.W.
Washington, D.C. 20250

Ronald Brown, Secretary
U.S. Department of Commerce
14th St. & Constitution Avenue, N.W.
Washington, D.C. 20230

Bruce Babbitt, Secretary
U.S. Department of the Interior
1849 C. Street, N.W.
Washington, D.C. 20240

John Seal, Acting Director
ACTION
1100 Vermont Avenue, N.W.
Room 7100
Washinton, D.C. 20525

Andrew # if Dayton + Hillary Rodman Clinton (First Lady White House)

SENATE JOINT RESOLUTION NO. 25

IN THE LEGISLATURE OF THE STATE OF ALASKA

EIGHTEENTH LEGISLATURE - FIRST SESSION

BY THE SENATE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

Introduced: 2/26/93
Referred: CRA, HES

A RESOLUTION

Urging the federal government to recognize the dire water and sanitation conditions in rural Alaska and to become a full partner with this state in improving this health-threatening situation.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS Alaskans living in over 135 rural communities throughout the state have substandard and inadequate water and sewer facilities; and

WHEREAS this lack of basic facilities results in many of these rural Alaskans having to drink untreated water from ponds, creeks, or rivers and having to use a bucket as a toilet or an outhouse as a bathroom facility; and

WHEREAS this lack of basic facilities often results in uncontained sewage pooling in close vicinity to homes, in liquid wastes leaching into the waters used for drinking, and in exposing children to raw sewage in their play areas; and

WHEREAS this lack of basic facilities is causing a critical human health and safety crisis in rural Alaska as evidenced by an alarmingly high incidence of potentially life-threatening diseases, such as hepatitis A and meningitis; and

WHEREAS Alaska's rural population is projected to double by the year 2010, further

consigned to substandard sanitation conditions.

BE IT RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to direct the administrator of the United States Environmental Protection Agency to join in a partnership with the State of Alaska to finance and implement a long-term, comprehensive effort to improve sanitation conditions in rural Alaska; and be it

FURTHER RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to ask the Environmental Protection Agency, the United States Department of Housing and Urban Development, the United States Department of Health and Human Services, the Bureau of Indian Affairs, the United States Department of Education, the United States Department of Labor, and the United States Department of Transportation to commit available finances and resources necessary to improve the water and sanitation conditions in rural Alaska by implementing the recommendations of the Alaska Sanitation Task Force.

COPIES of this resolution shall be sent to the Honorable Bill Clinton, President of the United States, and to the Honorable Ted Stevens and the Honorable Frank Murkowski, United States Senators, and the Honorable Don Young, United States Representative, members of the Alaska delegation in Congress.

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WHEREAS Alaska's rural population is projected to double by the year 2010, further

compounding this health crisis and exposing many rural residents to diseases that would be preventable with basic sanitation facilities; and

WHEREAS rural Alaska has a history of cycles of waterborne disease epidemics stemming from unsafe water and sanitation systems, and state epidemiologists report hepatitis A is currently beginning another new cycle of that disease; and

WHEREAS the United States Department of Housing and Urban Development continues to design and build homes in rural Alaska without adequate provision for safe sewage disposal or in-home drinking water; and

WHEREAS the commissioner of the Alaska Department of Environmental Conservation established the Alaska Sanitation Task Force, consisting of 27 federal, state, Native, and regional organizations, to analyze these important issues and provide recommendations for action; and

WHEREAS the implementation of the recommendations of the Alaska Sanitation Task Force involves the joint commitment of the state, local and federal governments to improve the living standards, public health, and quality of life of rural Alaskans; and

WHEREAS the governor has directed the commissioner of the Alaska Department of Environmental Conservation and commissioners of other affected state departments to use their best efforts to utilize available resources to address this critical health problem; and

WHEREAS the Alaska State Legislature recognizes the important work done by the Alaska Sanitation Task Force and urges early implementation of the task force's findings and recommendations by the state government in partnership with the federal government, local government, Native regional corporations, and others to address these challenges; and

WHEREAS this state effort ~~will not be successful~~ without the commitment of the federal government to meet its responsibilities and obligations to these rural residents, many of whom are Alaska Natives; and

WHEREAS the federal government, through the United States Environmental Protection Agency, has the capacity to assist in correcting the sanitation conditions in rural Alaska as exemplified by its ongoing efforts in other areas of the country such as the American Southwest Colonias where border town communities are receiving assistance in establishing basic water and sewage facilities; and

WHEREAS a national effort similar to that currently being undertaken in the American Southwest Colonias ~~is necessary if~~ residents in rural Alaska ~~are to no longer be~~

consigned to substandard sanitation conditions.

BE IT RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to direct the administrator of the United States Environmental Protection Agency to join in a partnership with the State of Alaska to finance and implement a long-term, comprehensive effort to improve sanitation conditions in rural Alaska; and be it

FURTHER RESOLVED that the Alaska State Legislature respectfully requests the President of the United States to ask the Environmental Protection Agency, the United States Department of Housing and Urban Development, the United States Department of Health and Human Services, the Bureau of Indian Affairs, the United States Department of Education, the United States Department of Labor, and the United States Department of Transportation to commit available finances and resources necessary to improve the water and sanitation conditions in rural Alaska by implementing the recommendations of the Alaska Sanitation Task Force.

COPIES of this resolution shall be sent to the Honorable Bill Clinton, President of the United States, and to the Honorable Ted Stevens and the Honorable Frank Murkowski, United States Senators, and the Honorable Don Young, United States Representative, members of the Alaska delegation in Congress.