Appendix E

Community Survey Results
(Excerpt from 1993 Study)

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STATE OF ALASKA
VILLAGE SAFE WATER

TUNTUTULIAK, ALASKA
COMMUNITY WATER AND SEWER
FEASIBILITY STUDY
FINAL REPORT

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APPENDIX F
COMMUNITY SURVEY RESULTS

GENERAL

This appendix is a summary of the Tuntutuliak community survey. It is written in narrative form to convey the community comments as received directly from residents during interviews. An example of the survey form and a summary of results is included in this appendix.

COMMENTS

Community house to house surveys were conducted at 47 out of approximately 70 homes from March 29 through April 1, 1993. Homes that were not included were those of people who were either not at home or out of town. All homes spoke Yu'pik as the primary language and several homes of elderly people required tedious translation.

In summary, Tuntutuliak residents were overwhelmingly receptive to improvements in their water, wastewater and solid waste disposal system. Evidently, it was the consensus among the majority of people that experienced the past history of failure of the school sewage system, the problems associated with the honey bucket self haul system, the labor intensive method of obtaining water for drinking and washing, and the unsanitary condition of the dumpsite that improvement is needed on all levels. One individual said this action is overdue. All homes but three desired piped water. Of these three, one home had a holding tank with pressurized water supply and a flush toilet, and the other two homes were those of bachelor men who were happy to remain without conveniences.

Nearly all residents favored a piped sewer system, but expressed concern for the monthly cost for the service. Some people said they would pay whatever the cost because they are so concerned with the health of their families. Individuals who do not have a steady income were generally resigned to make do with a honey bucket haul system. If piped sewer and water were unattainable due to cost, most people expressed high interest in the COWATER type system. The honey bucket haul system was considered more favorable than self-haul because of the inadequacy of the present self haul bunker system. Some areas of town experienced more problems than others, in terms of access convenience and bunker failures. The downside of the traditional honey bucket haul system, as expressed by some people, was their knowledge that waste does spill from the container as it is hauled to the dumping site.

The community experienced an unfortunate incident several years ago when two school age children who resided in new housing in close proximity near the school died of hepatitis. People blame the contamination caused by the school sewage lagoon failure or leakage. The community youth population is growing steadily and residents repeatedly expressed concern for the health of their families.

WATER SYSTEM

Summer

Without exception, all homes relied on rain barrels for their summer water supply. The water storage quantity ranged from 55 to over 400 gallons, contained in household water barrels. If summer rains are infrequent, people use water from the Kinak River or obtain it from the washeteria. Many people who would otherwise use washeteria water do not because it is too far away in the summer. Depending on the location of homes or reluctance or inability of people to pay for washeteria water, some individuals obtain water for washing by walking to the river with six gallon buckets. One individual whose family recently moved back to the village after living in Bethel for years described getting water from the river with buckets as "backbreaking." It was mentioned that hauling water is harder for single parent families or families who depend on others to haul water for them. According to one gentleman, the present system of getting your own water was "not that bad," and those that complained were either lazy or sick. Women are generally responsible for washing and some hauling, and those with newborn babies or large families were more outspoken about obtaining piped or running water. Many older people who were used to depending on themselves for hauling their own water and dumping their own honey buckets were more accepting of getting by like they always have than younger people who are more familiar with modern conveniences.

Everyone interviewed favored the taste of rain water, especially for drinking tea and coffee. The majority of people said the quality of the rain water was good. However, several did express concern for rain water collected from roofs in the older part of town, because soot particles from the chimneys and burn barrels are sometimes found floating in the rain barrels and the water is dark looking.

Washeteria water is available for $0.15 per gallon. Residents favor drinking rain and ice water to washeteria water because it "tastes better." Several individuals described how the washeteria water makes blacker coffee and darker, less palatable tea. One individual commented that when coffee is made from this water, something floats in it. Another will not drink it because it has, "too many chemicals in it." The water also yellows clothes. (Wally Wallace in charge of maintenance at the PHS explained that this condition is due to the manganese content in the water and he would call the washeteria operator to correct the situation.) Some people do not use washeteria water because it costs money, while others say the washeteria is located too far away from their homes. Winter use of an alternative water source is made easier by snowmachine transportation. Obtaining water from the washeteria in the summer requires people to either carry buckets or use wheelbarrows for a long distance. Tuntutuliak's boardwalks to the washeteria are narrow and during the flooding season, portions become submerged under water. These portions were identified on the basemap by land committee members of the Qinarmiut Corporation. The pathways located within the Federal Townsite are reserved as a right-of-way and are sufficient for accommodating larger boardwalks.

The water quality of the river water, as described by residents, varies with the season. With spring runoff and fall floods, the river gets "too brown," or turbid. In the summer, it is silty. People who use river water for steambaths in the summer wait for the water to settle before using it. When no other alternative exists, river water is used for drinking, but it is boiled by most people. (Families with newborn babies boil all water used by the baby.) River water is used mostly for washing.

Winter

Ice is obtained from ponds, lakes, and the Kinak River by all homes in Tuntutuliak during the winter. Individuals travel by snowmachines distances ranging from 1/2 to 20 miles to collect ice. One individual who traveled from 10 - 15 miles to get ice said he goes far because his, "wife wants good ice." People who do not have working snowmachines have to rely on other people to get their ice. Several people mentioned that long ago, people were able to get ice from the ponds now located in the heart of the village. Now, everyone considers these ponds contaminated and do not use them for any purposes. People who are most concerned about contamination go longer distances to obtain ice. When there is clear ice on the river, people will obtain it there. The best times to collect river ice is during the first part of winter and during breakup. River ice is not used in late winter because it becomes yellow and is not suitable for washing.

People expressed much concern about the permit the school has to pump lagoon effluent into the Kinak river because they depend on the river for winter ice gathering and fishing all year around.

One individual mentioned that watering points used several years ago by community residents did not function as designed. This system was not maintained and eventually was discarded.

WASTEWATER (GREY WATER) SYSTEM

The majority of homes who had sinks used buckets underneath to catch wastewater. Several homes installed drain pipes under their sinks to dispose of wastewater. The location of homes, bunkers, and availability of nearby ponds and sloughs influenced where residents dumped their wastewater. Residences located near ponds dispose of the wastewater in the ponds. People who lived in new housing near the school, dump their wastewater in the ponds because they are considered contaminated already. Other residents dispose of wastewater in the bunkers near their homes, if they are not overflowing. Some throw wash water out their door, or in the front or back of their homes. All residents consider this disposal method inadequate.

SOLID WASTE DISPOSAL

Honey Buckets

Almost all residents rely on bunkers for disposal of honey bucket waste. Some throw their wastes in ponds nearby. Everyone agreed that this method of disposal is absolutely not adequate for a number of reasons. Wastes thrown in bunkers located in the floodplain of the lower village rise with the water. Some bunkers overflow in the summer and freeze in the winter. It was noted that in summer the bunkers fill with water. When wastes are thrown in the bunkers in tied garbage bags, they freeze and fill up more quickly in the winter, and do not seep into the ground in the summer. Several older bunkers have failed and new bunkers constructed within the last few years appear to be holding their own. At least two individuals constructed their own bunkers because their old bunkers filled to capacity. If bunkers fill up, people move to the next closest one. Several commented that they are too far away. One individual commented that bunkers are beginning to leak noticeably into the lakes this year. Residents complained that some people throw trash into the bunkers and cause them to fill up faster. Many consider the self haul inconvenient and too much work.

Although everyone interviewed maintained that honey buckets are dumped into bunkers, several people mentioned that occasionally some people dumped their wastes into the little creek in the lower village. During the community meeting, one individual said new bunkers in the lower village were an immediate need because elderly people were dumping their honey buckets in the creek. Because children play nearby, parents are concerned about this practice.

One individual who helped another build a collection tank for his home mentioned that he would also like to build his own system but is afraid because the permafrost may melt.

When asked about possible sites for a new sewage lagoon, one individual mentioned that there the land around the village was no good for anything. Another said the village should relocate because it is in a flooding area. High winds from the south causes flooding, and water fills the village. If a new lagoon is constructed then it would have to be located away from the village on higher ground. Several people stated that if a new sewage lagoon is located a long distance away, someone would need to be hired to haul wastes away. One individual commented that probably the only system that will work is a manual haul system because of the availability of funds.

Everyone expressed the concern that the school sewage lagoon is a health risk. The lagoon is located in the middle of the village. In the summer the lagoon smell is offensive, and people who live in the new housing area are forced to walk past the school. The lagoon has leaked into the surrounding ponds and at one time was pumped into a lake on a Native Allotment.

One residence in the community had a flush toilet, running water, and a hot water tank. Wastewater disposal from this residence was to an unpermitted seepage pit.

Solid Waste

The amount of garbage generated by families ranged from one to 15 bags per week. The consensus of community residents on the adequacy of the dumpsite in terms of location, suitability, and cleanliness was unanimously negative. The comments most frequently repeated are as follows: "The dumpsite is located too close to the community. The dumpsite is not fenced. During windy days, trash is blown all over the place. High tides fill the slough near the dump and fall floods raise the water table at the dump causing garbage to float everywhere. High winds from the north blow trash into the village. The slough near the dump empties into the Kinak River and causes pollution of the river. The dumpsite is an eyesore. The trash is getting closer and close to the village. I don't like it when people throw their dead dogs out there. The garbage should be buried right away. The dump contaminates the whole area. People have to go farther to get ice. It is really bad when the snow thaws, it's a real concern. Foxes who come to the dump, go into the village. The dump is a health hazard. Some people dump anywhere they want, they don't know how to take care of the land. This area is worse than other surrounding villages. People should be more responsible."

Many people mentioned how the last 100-200 feet of the boardwalk to the dumping area is now covered with garbage, causing inconvenience for people who use it in the summer. Since wheelbarrows are used for dumping, people are reluctant to walk further and simply dump their garbage at the end of the uncluttered boardwalk causing the garbage to spread farther and farther from the designated dumping area. Depending on the volume of garbage generated every week and distance people have to travel to dump garbage with wheel-barrows, it is sometimes more convenient for residents to store garbage underneath their homes until winter when they could be easily hauled with snowmachines. One individual mentioned that he would like a central collection bin located nearby.

Several people expressed concern for the lack of supervision for what is thrown at the dump. For example, the dead dogs mentioned above are tossed out with other garbage and are not buried. On warm, sunny days in the summer, the smell from the dump makes people sick. Several people commented that some agency hired people to collect garbage years ago. Because two people were directly responsible for the dumping, they had control of where the garbage was dumped and took care to see that it was done properly.

Most residents sort burnable and non-burnable items. Several have 55 gallon burn barrels on their property for this purpose. Everyone approved of the idea of installing a burn box or incinerator at the dump. One individual mentioned that it would be more convenient for her family because she always had to check to see if her neighbor was burning garbage before she hung out her clothes to dry. Others say how much more convenient it would be for them to be able to burn their garbage at the dump instead of outside of their homes. Winds scatter the burning debris causing fire hazards in the summer.

Illegal dumping is occurring on the far end of town, on the other side of the new housing. One individual mentioned that dumping is also occurring near the river.

21 of out the 47 people interviewed stated that they would pay for garbage collection. 17 said that they haul their own garbage and do not want to pay someone to do it for them. A recycling program was mentioned as a program that would work. Cans were collected in some homes already. They would have to be shipped out on planes.

Tuntutuliak Community Survey Results

Name	Lot	Block	Number People in Home Winter	Number People Summer Only	Water Use (gpw) per house	Have Bath room	Water Source Winter	Water Source Summer	Water $/Month do you now pay?	Water $/Month would you pay?	Sewage $/Month would you pay?	Would you sort trash? (Burn / nonburn)	Trash No. Bags Per Week	Trash $/Month would you pay?
Lupie/Chase	7	3	5.00	5.00	20.00	Yes	LI	Rn, Rv	8.00	12.50	?	Yes	4.50	?
Stewart, J	11	3	3.00	3.00	10.00	Yes	I, W	Rn, W	0.00	12.50	?	Yes	2.50	?
Pavila, P	2	14	4.00	4.00	50.00	No	I	Rn,Rv,W	17.50	12.50	25.00	Yes	7.50	Yes
Thomas, E	6	1	7.00	7.00	150.00	Yes	I	Rn,Rv	20.00	40.00	35.00	Yes	5.50	No
Jimmie, D	4	1	7.00	7.00	60.00	Yes	I	Rn	10.00	35.00	?	Yes	2.00	?
Andrew, C	5	2	4.00	4.00	12.50	Yes	I	Rn	5.00	12.50	?	?	?	?
David, E	3	10	2.00	2.00	7.00	Yes	I	Rn,W	17.00	40.00	40.00	Yes	1.00	10.00
Evan, E	6	12	1.00	1.00	25.00	Yes	I	W,Rn	25.00	?	Yes	Yes	1.00	No
Enoch, J	8	4	4.00	7.50	90.00	Yes	LI	Rn,W	50.00	?	30.00	Yes	2.50	12.50
Enoch, L	6	4	7.00	0.00	70.00	Yes	LI	Rn,W	28.00	12.50	25.00	Yes	2.00	No
Andrew, P	2	4	5.00	5.00	65.00	Yes	I	Rv	20.00	35.00	25.00	Yes	2.50	?
White, E	6	3	3.00	?	50.00	Yes	I	Rn,Rv	12.50	25.00	20.00	Yes	3.50	12.50
Lewis, K	5	3	6.00	6.00	25.00	Yes	LI	Rn	27.50	25.00	25.00	Yes	4.50	20.00
Kernak, J	4	4	2.00	3.00	25.00	Yes	I	Rn	10.00	50.00	17.50	Yes	?	No
Enoch, D	4	2	5.00	5.00	55.00	Yes	I	Rn	20.00	15.00	20.00	Yes	2.50	15.00
Simon, R	1	4	5.50	5.50	30.00	Yes	I	W,Rn	40.00	30.00	50.00	Yes	2.00	?
McIntyre, N	3	2	7.00	7.00	30.00	Yes	I,W	Rn,W	40.00	40.00	12.50	Yes	?	No
Lupie, H	2	2	4.00	4.00	27.50	Yes	I	Rn	48.00	17.50	?	Yes	2.50	No
Wassilie, M	3	1	9.00	9.00	150.00	Yes	I	Rn	30.00	25.00	12.50	Yes	2.50	?
Andrew, W	10	1	2.00	?	50.00	Yes	LI	Rn,Rv	19.00	25.00	25.00	Yes	2.00	No
Andrew, J	9	1	5.00	2.00	30.00	Yes	LI,RI	Rn,Rv	30.00	25.00	25.00	Yes	?	No
Frank, N	2	3	9.00	9.00	400.00	Yes	RI	Rn,Lk	21.00	25.00	35.00	Yes	2.00	Yes
Pavila, J	12	1	3.00	3.00	120.00	Yes	I	Rn,Rv	18.00	12.50	12.50	Yes	3.50	No
Lupie, P	5	1	5.00	0.00	45.00	Yes	LI	Rn,Rv	?	12.50	12.50	Yes	2.50	12.50
Wassilie, F	3	3	4.00	4.00	125.00	Yes	LI	Rn,Rv	60.00	12.50	12.50	Yes	2.00	12.50
Albrite, E	2	1	8.00	8.00	60.00	Yes	I	Rn,W	?	25.00	25.00	Yes	2.00	No
Lupie/Evan	2	6	5.00	0.00	12.00	No	RI	Rn,Rv,W	?	12.50	12.50	Yes	2.00	12.50
Charlie, S	17	3	3.00	3.00	35.00	Yes	LI	Rn,Lk	?	12.50	12.50	Yes	5.50	12.50
Evan, J	4	12	8.00	8.00	110.00	Yes	RI	Rn,Rv	0.00	40.00	35.00	Yes	2.00	5
Andrew, E	3	3A	6.00	6.00	90.00	Yes	RI,LI	Rn,W	10.00	12.50	25.00	Yes	2.50	No
Daniel, E	19	3	2.00	2.00	20.00	Yes	LI	Rn,Lk	?	12.50	12.50	Yes	1.00	No
Manutoli, W	13	3	1.00	1.00	30.00	No	I	Rn,Rv	?	12.50	12.50	Yes	1.00	?
Frank, A	4	3	5.00	2.00	55.00	Yes	I	Rn,Rv	25.00	35.00	35.00	Yes	5.00	10.00
Miller, A	4	1	1.00	1.00	20.00	No	RI	Rn	0.00	12.50	25.00	Yes	2.00	No
McIntyre, C Jr	6	1	6.00	5.00	75.00	Yes	I	Rn,W,Lk	10.00	50.00	50.00	Yes	4.50	No
Charles, J	?	?	4.00	4.00	100.00	Yes	I	Rn	60.00	?	?	Yes	10.00	?
Daniels, I	?	3	6.00	6.00	120.00	Yes	I	Rn,W	?	25.00	25.00	Yes	?	Yes
Savok/Wassilie	3	1	8.00	8.00	100.00	Yes	I	Rn,Lk	?	100.00	50.00	Yes	14.00	No
Joseph, P Sr	2	1	7.00	7.00	110.00	Yes	I	Rn,Rv	15.00	17.50	25.00	Yes	1.00	5.00
David, H	7	5	4.00	4.00	50.00	No	I	Rn,W,Rv	19.00	25.00	100.00	Yes	3.00	10.00
Wassilie, E	8	1	9.00	9.00	220.00	Yes	I	Rn,Rv	?	40.00	12.50	Yes	3.00	10.00
Jimmie, P	12	1	4.00	4.00	40.00	Yes	I	Rn,Rv	40.00	50.00	?	Yes	4.00	No
Lupie, N	1	2	8.00	0.00	55.00	Yes	I	Rn,Rv	8.00	35.00	25.00	Yes	4.50	12.50
Jimmie, J	4	3	7.00	7.00	50.00	Yes	I	Rn,Rv	120.00	25.00	85.00	Yes	1.50	No
Fitka, J	6	3	6.00	6.00	58.00	No	I	Rn,Rv	24.00	25.00	100.00	Yes	4.00	Yes
Charlie, T	8	5	4.00	4.00	258.00	Yes	I	Rn,W	?	?	25.00	Yes	7.00	16.00
Andrews, E	3	3	3.00	3.00	60.00	Yes	I	Rn	?	Yes	25.00	Yes	?	10.00
AVERAGE			4.97	4.47	73.40				25.21	26.67	30.19		3.41	12.09

LEGEND

? = "Don't know"

I = Ice

LI = Lake Ice

RI = River Ice

Rv = River

Lk = Lake

W = Washeteria

Rn = Rain

* Based on those wanting service

Community Survey Summary Number of homes surveyed = 47 Total Number of people in homes surveyed = 234		
No. People Living in Home	No. Homes	as % of Homes Surveyed
1	3	6
2	4	9
3	5	11
4	9	19
5	7	15
6	6	13
7	6	13
8	4	9
9	3	6
How much is spent for water utility each month?		
$/Month	No. Homes	as % of Homes Surveyed
0-19	17	36
20-39	11	23
40-59	5	11
60-79	2	4
Over 80	1	2
No response	11	23
How much are you willing to pay for water?		
$/Month	No. Homes	as % of Homes Surveyed
0-19	17	36
20-39	16	34
40-59	8	17
60-79	0	0
Over 80	1	2
No response	5	11
How much are you willing to pay for sewer?		
$/Month	No. Homes	as % of Homes Surveyed
0-19	11	23
20-39	20	43
40-59	5	11
60-79	0	0
Over 80	3	6
No response	8	17
Would you pay for trash collection?		
Response	No. Homes	as % of Homes Surveyed
Yes	21	45
No	17	36
No response	9	19
Do you have a bathroom?		
Response	No. Homes	as % of Homes Surveyed
Yes	41	87
No	6	13
Would you sort trash?		
Response	No. Homes	as % of Homes Surveyed
Yes	46	98.00
No	0	0.00
No response	1	2.00

APPENDIX M
SUMMARY OF SECOND PUBLIC MEETING

On June 15, 1993, following an interview and meeting with Tuntutuliak Traditional Council Village Administrator, Robert Enoch, Sharon McClintock, Land Planner, part of an ERES Feasibility Study Team conducted door to door follow-up interviews with community residents. The purpose of these interviews was to obtain additional information from residents about their ability to pay monthly costs for various options considered in the VSW 65% Phase Feasibility Study. The initial house to house surveys conducted March 25-27, 1993 asked preliminary questions relating to general household consumption of water, water sources, waste disposal, adequacy of present water and disposal systems and ability of people to pay for services. At the time the initial surveys were conducted, tangible monthly costs for the various services had not yet been determined. The questionnaire presented sliding costs in $10 increments starting at zero. People selected average amount of $26 for water and $30 for sewage collection as a monthly maintenance fee.

The second interviews were conducted June 15 with the knowledge of estimated monthly household costs for the options of a pressurized sewer and water distribution system, pressurized water and vacuum sewer system, COWATER flush tank and haul system, honey bucket haul system, and costs to obtain water from central watering points. Residents were also briefed on the construction costs, time involved for installation of each system and asked to provide comments on the proposed location of the sewage lagoon, new dumpsite location, watering points, location of boardwalks, interim solutions and sales tax possibilities.

House to House Interviews

Interviews were initiated at the upper village section of town which contains newer ACVP housing. The next morning the middle and lower part of town were interviewed. The King Salmon were running and many people were at summer fish camps. Those remaining in town were busy cutting, drying and smoking fish. Most homes on the upper village and about a dozen homes in the lower village where visited. The people listed below were either interviewed or present at the community meeting held Tuesday evening on June 15, 1993. Approximately 12 residents were present at the public meeting. In discussions with several people following the community meeting, it was learned that public meetings are generally not well attended by local residents because it is the village traditional custom to elect officials to represent public interests. They are trusted to make decisions and speak on everyone's behalf at meetings.

Residents Interviewed
Robert Enoch *
Sophie Andrews
David Enoch
Nellie McIntyre
Peter Joseph Sr.*

Johnny Evon
Mike Wassille
Lena Chase
Joe Kernak/Edith Kernak
Wilson Manutoli
Martha Albright
Charles Andrew *
Ron Simon *
Willie Andrews *
Adolph Lupie *
Peter Miller *
Pansy Lupie *
Ivan Daniels *
Sophie Charlie
Andrew Frank
Joseph Lupie *

* Also attended public meeting.

Most individuals interviewed appeared initially stunned at the estimated cost of $167-175 they would be required to pay per month for piped sewer and water. One elderly man said "Ah-zee!" which means "It hurts!" When informed about the cost of the various options, all individuals opted for the pressured sewer and water system as a first choice. The COWATER system was a secondary choice. It was the interviewer's impression that when residents are presented with the realization that the cheapest system available did not solve the health problems associated with honey buckets, combined with the cost of .15 - .30 per gallon for water, the cost difference of approximately $40 - $50 per month for a phased system of piped sewer and water was not considered significant.

General comments indicated that residents were willing to hold off on the selection and construction of the project until the feasibility of obtaining BIA ISTEA funding of the boardwalks was known. Mr. Robert Enoch asked that during the interview the people should be informed that the project would be conducted in phases. Mr. Enoch felt that the piped sewer and water system should be an ultimate goal even it takes years to complete. The honey bucket haul system was viewed as starting all over again with a system that was totally inadequate. His and others' concern was that spillage during collection was an ever present possibility and would spread disease and continue the health hazards the community has tried to combat for years. He echoed the sentiment of many people that it was worth waiting for something that will last, and that people would find a way to pay $175-200 a month to improve their lives. He still expressed concern for people who lived on the economic border line and questioned their ability to pay.

General Interview Narrative

Sophie Andrews commented that a flat rate charged to everyone would be fair. When asked about the possibility of instituting a sales tax to help reduce monthly costs per household, she thought it would be okay at 2%. She said that she would be willing to pay from $50-200 per month for services. Her comments on interim solutions was that a honey bucket haul system would be alright for now. The dump is relocated in a better place and the burnbox will be helpful. When asked abut the location of the watering points, she said the watering points were more convenient than the washeteria, which was far away from her house. She said she would pay the amount of .15-.30 per gallon. She did express concern that the water and sewer pipes running above the ground might be broken by snowmachines and said that a main access area or corridor for snowmachines is needed.

David Enoch recommended that construction of any system should be held off until the Traditional Council hears from BIA on the boardwalk funding. He said that he preferred a pressured water and sewer system and can pay $175 per month for the service. He was concerned about the ability of people to pay and whether it was possible for people to hook up to the system later and be bypassed in the interim. When asked about the possibility of a sales tax, he said residents have never had a sales tax before and may consider a tax if it is the only choice left. In the interim until a system is built, he said a honey bucket haul system would work. He also said that a central pumping system for the school would be a start.

When asked about the cost to obtain water from watering points, he said that people who obtain water from the washeteria were already paying .15 per gallon for water, and .15-.25 per gallon would be a reasonable cost per gallon. He said that people had been talking about paying .75 for five gallons and they think that it is okay. He recommended that if a honey bucket haul system is instituted as an interim measure, the underground bunkers should be built close to old bunkers.

Nellie McIntyre said she would to pay $167-175 per month for a piped sewer and water system, as well as a sales tax. She preferred a pressurized system over a COWATER system. She commented that some people would not be able to afford the monthly cost for this system. As an interim measure, she would be willing to pay for a honey bucket haul system. The self haul of the honey buckets was especially inconvenient for her because she is hauling them herself and they were too heavy. She expressed concerned for the washeteria water because it had too many chemicals.

When surveys were conducted in April, elder Joseph Lupie required a translator and there was none available at the time. His son, Paul Lupie who interpreted for him and understood the cost for all the options, stated that a cost of $170 per month was affordable, and they will find some way to pay this cost. Joseph expressed concern for the monthly cost, and was concerned that the costs would go up in the future. The issue of paying a sales tax was discussed and Paul said that they would be able to pay it if it would help bring monthly costs down.

The Lupies' house was located at the far end of town and they said that the watering point location was fine for them. They would be willing to pay for water if this was the only option. In discussing the choice of the sewer and water alternative verses the COWATER system, they chose the sewer and water since it was more convenient. If they had to depend on a honey bucket haul, they would be able to pay the $92 a month. They asked if there was a pump station, whether they could haul their own honey buckets to the pump station. The boardwalk locations and the dumpsite location appeared to be acceptable.

Mike Wassille is a local store owner which provided an opportunity to obtain input on the sales tax issue. Robert Enoch has asked that we interview him about the convenience of a sales tax to a business owner. Mr. Wassille said a sales tax has never been used before, but with the help of his wife he would be able to accommodate a tax if the residents were in favor of one. He said that he would be able to pay $170 per month for sewer and water. The honey bucket hall system was good too, and he would pay the $92 a month if it were the only way to go. He expressed high interest in the COWATER system. He said the watering point by the school was good if it were established, and they would be about to pay .15-.25 per gallon for the water.

Andrew Frank said he would be able to afford to pay $150-175 per month for a pressurized sewer and water system. He works at the school and knows of the problems with the school sewage lagoon. He believed that establishing a new lagoon was good. He would pay a sales tax at whatever rate the people decide if one were instituted. If the honey bucket haul system was the only way, he would pay the $92 a month. He would also like to see the watering points established. His house is among the farthest away from the washeteria. He would be willing to pay .15-.25 per gallon for water. He said the COWATER system was a good consideration. Mr. Frank is the maintenance man at the high school and expressed concern for the current water well at the school because it was high in arsenic.

Lena Chase expressed concern for the cost of the monthly water and sewer charges, and asked if it was possible for them to hook up at a later time. She liked the idea of the watering points and said that she would be willing to pay .15-.30 per gallon for getting the water. She did not have an opinion about the sales tax. She said that she preferred the piped sewer and water option, however, it would appear that monthly charges may be cost prohibitive.

Edith Kernak/Joe Kernak preferred the piped sewer and water alternative and were willing to pay for the monthly cost. The COWATER system was also a possibility. Mrs. Kernak said that they could pay for the piped sewer and water system but the COWATER system might be cheaper for some people. She said that of all the options presented the piped sewer and water price was just a little more but more convenient. She was willing to pay a 2% sales tax if necessary. Mrs. Kernak was unhappy with the current bunker system by her house. It was filled to capacity, so her husband built a new bunker.

Martha Albrite was interviewed without the benefit of a translator. She did communicate that she wanted piped sewer and water and will find a way to get it.

Wilson Manutoli first expressed concern for the cost of the piped sewer and water system and said that it was expensive and he would rather have the honey bucket haul system. After discussing the cost for the haul system and efforts to obtain water, he changed his mind. He said that they have been trying to get away from honey buckets. He recognized the serious health problems associated with the present system and said that they have to try to improve their lives. Despite his economic concerns he said that there has to be change. "Even if the honey bucket haul is cheaper, it was no good." He said that a form of piped sewer and water service is the only alternative in the long run and they will have to find some way to pay, whatever it takes.

Johnny Evon also favored the piped sewer and water alternative and cost. He was interested in the COWATER system and was willing to pay for water at .15-.30 per gallon. His house is located in the lower village part of town. He said that he would pay a sales tax if it would help with costs. The boardwalks and dump location was "good."

Community Meeting

The public meeting was called to order at the Community Hall at 7:30 P.M. Lou Butera and Curt Holler of ERES, Steve Eng of VSW and Sharon McClintock of MLA, Inc. and approximately 10-12 people were in attendance. Robert Enoch, Village Administrator of the Tuntutuliak Traditional Council introduced those present and explained that this meeting was a follow-up to last spring's meeting. The purpose of this meeting was to present findings gathered in the feasibility study on the various options studied since that time.

Lou Butera stated that the study at this point arrived at several options available to Tuntutuliak residents:

1) Honey Bucket Haul system similar which is in place at Kongiganak, Napakiak.
2) COWATER system - A 100 gallon tank is pulled by a 4-wheeler or snowmachine. There is no spillage problem. Wastes go into tank and are hauled to the sewage lagoon.
3) Pressurized sewer and water system which is similar to the system in place in Bethel, and requires above ground piping system.
4) Vacuum sewer and water system. A similar system is in place in Emmonak.

A sewer lagoon will need to be constructed with any option. The proposed lagoon site may need to be diked to increase the capacity of the lagoon and will also require fencing. The new solid waste disposal site will be nearby. A dozer will need to be purchased to effectively operate the solid waste disposal site. An operator will be required a few hours a week to operate the dozer and maintain the burn box which will be installed at the dump. A council member asked whether a liner would have to be installed in the sewer lagoon. It is not anticipated that a liner will be installed. Another expressed concern for the school sewer lagoon and how it has contaminated nearby lakes. It was recommended by one resident, that sandbags be placed

around the lagoon to reinforce the system. Lou Butera explained possible diking and outfall controls and obtained local information on the drainage of surface water around the lagoon and how the lakes are connected. There were differing opinions on the drainage path.

The pressurized sewer and water system will cost $5.5 million in capital costs to construct and approximately $177 per month operational cost for residents. The construction cost is expensive because existing houses are not arranged in a fashion which would accommodate orderly, effective development.

The COWATER system is expected to cost $2.2 in capital construction costs which includes boardwalks. Households would pay from $50-200 per month depending on usage patterns. The Honey Bucket haul system will cost $900,000 to construct with an estimated monthly cost of $92 per residence.

Residents had expressed prior concern for health because of spillage of honey bucket waste during hauling and contamination of surface water due to leakage. Lou explained that the responses coming from places such as Kipnuk and Kongiganak varied based on the success of their systems. The Honey Bucket haul system costs less to construct, monthly payments are estimated at $92 a month and an operator is hired.

It would cost $500,000 to construct an all weather watering point in town next to the school location. This option was included in the study because many people who lived in the upper part of the village complained that the washeteria was too far away for people to access. The watering points would be coin operated. In answer to concerns of the palatability of washeteria water, Lou explained that the washeteria water would be improved by the installation of an improved filtering system and water tempering system. These costs would run $31,000 + to include training of personnel. The school has expressed interest in purchasing improved water from the washeteria.

It is also possible to run a summer water line (uninsulated) which could be expanded at any time. It would cost $120,000 to install the summer lines. A council member expressed concern for the summer pipes in the winter because freight sleds might tear them up. It was explained that they would be drained before winter sets in and that designated trails and protection will have to be established in order to avoid damaging the water lines.

The monthly cost for the sewer and water system was discussed. Lou explained that if the school district could pay $380 per month for its services, the monthly rate for each family will be reduced. We had earlier estimated cost reduction measures. A sales tax on fuel heating oil for example could conceivably bring in $280 per month for a 2% tax, a 3% tax would bring in $420.00 per month while a 4% tax would provide revenue of $560 per month. If these revenues were divided among 70 households, the contributions would conceivably be $4-8 per month.

The existing wastewater system, it was explained, is not adequate. The existing dumpsite is not adequate. New boardwalks are needed for a haul system. There is not enough money in the present grant to establish a system with gravel roads.

A council member asked if the construction occurred in phases, would the community be able to get money from the State. Steve Eng responded by saying, "Yes, State projects are phased and there is more funding priority for construction projects in the works." He explained that there are more federal funds earmarked for the State Village Safe Water program. He further explained that the construction cost estimates are typically a little on the high side. In actual practice, the estimates tend to be more conservative and the actual constructions costs are usually more efficient.

Steve Eng explained that Alaska operates differently than a country like Canada who not only assists in the construction of large capital projects, but takes the fiscal responsibility for maintenance costs. In Alaska, the operation and maintenance costs of projects has to be borne by the community.

David Enoch stated that it is better to totally scratch the honey bucket system. People spoke up about this at the spring meeting and are again speaking up about doing away with it entirely. He recommended a phased pressurized sewer and water, including the COWATER system as the primary, in home system.

Ivan Daniels said that the construction of the new sewer lagoon and boardwalks will be the start of an economic base in Tuntutuliak. At this point, many attendees spoke in turn about their opinions in Yu'pik.

Peter Joseph Sr. said he initially favored the flush toilet COWATER system but since we are talking about phases, he wants to see whatever system constructed include the upgrade of the boardwalks and building of a new dumpsite as the first priorities. He said he wouldn't want to see a honey bucket haul system in place here.

Robert Enoch stated that he wants to see a system that does away with the present system because of health concerns. He preferred a system that would be used on a long term basis, one that is "actually useful." He stated that he was not concerned with the monthly bill people would be required to pay. Perhaps when it becomes an issue, "We will have a Legislature that will hear our concerns," he stated. Further, in the time it takes to construct the project, the state or federal governments may come up with a solution.

Mr. Enoch further expressed concern that the older portion of town is in dire need of boardwalks. With a fully piped sewer and water system, the community might not have the benefit of boardwalks. The COWATER system he pointed out, comes with new boardwalks. He did not see much difference between the costs between the systems after they are

constructed. The long term benefits of the piped sewer and water are more advantageous. The cost difference of approximately $80 was not much.

The cost for the COWATER system, Lou Butera explained, could be greatly reduced if people hauled their own water verses having it delivered. He explained that in a phased system, the community will need to determine who will be among the first to get the systems. For example, during the first year of the COWATER installation, only 30 systems may be installed. In the interim, people will need to decide what should be done with those who must wait.

In response to questions about the COWATER efficiency, Lou explained that the people who manufacture the system are concerned that the system work properly. He said that homeowners may be expected to participate in the cost of installation by paying up front costs. In other village projects, participation in the projects promotes feelings of ownership.

Lou Butera further explained that the COWATER system may be phased into a piped delivery sewer system eventually, and therefore the community must look into this aspect more. A lift station and force main may be installed in the back of the school if the community is willing to allocate funds for this project. The community would benefit from this system as it may reduce haul distance to the lagoon, and the force main would be incorporated into any future piped system. Lou Butera said that the school would like to access the washeteria well and will pay for the water.

In discussing the boardwalk needs, a council member mentioned that the State Department of Community and Regional Affairs and possibly the State Department of Transportation and Public Facilities were willing to assist in the construction of the boardwalks and have an existing program to prioritize grants for roads. They suggested that DCRA be contacted for further information. The names of Mike McKinnon at DOT/PT and John Tolley at DCRA were given as contact people.

A council member asked whether the grant funds have to spent this year. Steve Eng said, they did not, but suggested that the dump be relocated and fenced as soon as possible. The failing bunkers can also be decommissioned by September.

The council members decided that they would like to wait for a couple of months until they hear from BIA about the ISTEA funds. They felt that these decisions are important and they must be considered carefully. They also agreed to send two council members to visit Emmonak and Mekoryuk to view their respective systems and report back to the council about their efficiency. Steve Eng said the VSW funds are available to pay the travel costs. The council members agreed to move forward with the dumpsite closure and fencing of the new dumpsite, and decommissioning of the old bunkers. The members thought it would be a good idea to write a letter to BIA informing them of their decision. Steve Eng agreed to write a letter from VSW also. The members agreed to meet again in September.

Questions which were brought to the meeting were asked and answered as follows. In response to people dumping their own honey buckets at the pump station, the answer was no, an operator has to do this. On whether people could hook up later, the answer was yes, but the cost of maintenance per month would be more expensive for those hooked up. Regarding the possibility that operational costs may rise in the future, Steve Eng said yes that is a possibility. Several people asked if the pipes will freeze in the winter, and yes that is a possibility if maintenance is not performed. The summer water pipes would not, because they would be drained. About the COWATER Tank freezing, Lou explained that the tank was superinsulated and contained a heat tape system. The possibility of the tank freezing was remote. It was also explained that the COWATER heat trace system operates at a very low wattage. In answering the question about what kinds of vehicles would be required for maintenance of a haul system for the COWATER system, the answer was Alpine showmachines and a Honda 4-wheeler.

The meeting adjourned at 10:30 P.M.