

Researcher Says Critical Needs Are Water, Disposal, Housing

Good water, waste disposal, and improved housing, these are the three most critical needs of the villages, according to Dr. Sage Murphy, associate professor of environmental health at the University of Alaska.

"You can arrange the three in any order you want" he added.

"I don't care what the medical doctors can do, but as long as these needs are not dealt with, the people will keep coming back to the hospitals with the same diseases," Dr. Murphy stated.

Formerly with the Arctic Health Research Laboratory, Dr. Murphy is now heading a graduate program at the university to train Alaska engineers to deal with sanitation and water problems within the state.

Working under a \$50,000 grant, Dr. Murphy said he devotes half his time to the graduate training program and half to research into problems facing the small communities of Alaska.

"The idea is to get your engineers in Alaska trained to work in the sanitation field instead of having to bring people in from outside" he explained. Water and sanitation problems in Alaska

are unique and varied, and inevitably when someone is brought in from outside it takes them a considerable length of time just to get basic orientation in the nature of Alaska problems" he explained.

Keenly interested in the water and sanitation problems of small villages, and arriving at practical and economic solution to these problems, Dr. Murphy has devoted his research time to the rural sections of the state.

Murphy explained that we have the technology to deal with large urban water and sanitation problems, but technology for dealing with small village water treatment is lacking.

If present methods are not economically unfeasible, then they are technically unfeasible due to a lack of highly technical skills in remote areas, Murphy explained.

"Our research aims on water are to develop a unit which is simple to operate with as low an initial cost as is possible," he said.

We know we have difficult water problems. These problems are unique, being principally affected in Alaska by cold and permafrost, and can vary greatly in different

areas, he explained.

In the Interior the chief water problems are the iron and organics in the water, while on the coast salt water contamination becomes a problem above the cold and permafrost problems.

Dr. Murphy indicated that they are presently working on a small water treatment unit that may prove feasible in Interior areas of the State.

In addition under a contract from the Arctic Health Research Laboratory he has been studying the recent PHS water system installation at its related problems at Unalakleet in far western Alaska.

Typical of many Eskimo coastal villages, Unalakleet lies on a strip along Norton Sound, and was the location of a water system installation by the Public Health Service completed in October, 1965.

However, by Christmas of that year the wells were dry at Unalakleet and a short while later salt water began to contaminate the fresh water table.

"What happened at Unalakleet could happen at possibly 80 percent of the villages along the coast," Dr. Murphy said, "When the fresh water is pumped out of the small water table the salt water is naturally drawn in."

Most coastal villages are very low lying and the fresh water supply beneath the sand spits is usually small in area and below sea-level.

Murphy indicated that due to the lack of sanitary engineers in Alaska an outside firm had to be brought in to conduct the Unalakleet tests. They did most tests during the summer and none during the winter.

The native residents of the village, a few who had wells, were aware that the water table fell in the winter, but this may have not been adequately considered when determining the feasibility of the water source.

Dr. Murphy predicted that locally trained and experienced engineers would be familiar with the general sequence of problems surrounding cold-area water sources.