

Geophysical Institute to Study "Heat Island"

FAIRBANKS — The Geophysical Institute of the university of Alaska has been awarded a two-year, \$72,000 grant by the federal Environmental Protection Agency (EPA) to study the Fairbanks "heat island."

A heat island is the area warmed by the presence of a city. It is important, say scientists, in that winds caused by the temperature contrasts between city and countryside may have a major effect on the pollutants are (or are not) carried out of the populated area, especially

under conditions of very low wind speed.

These temperature contrasts are greatest at night in winter under conditions of low wind speed and strong ground inversions. They are caused partly by the difference in the way trees and buildings respond to wind, moisture, and sunlight; partly by fog and smoke in city air, and partly by the heat added to the air by burning fuels of all sorts.

Fairbanks is already known

to have a quite strong heat island for its size. In winter, the downtown area is frequently 10 degrees warmer than most flat areas outside the city. At this time it is believed that the Fairbanks heat island results primarily from heat from buildings, power generation, automobiles and other energy use, with ice fog having an additional effect as a thermal blanket.

One important feature of the heat island research project will be an inventory of the fuel burned in the Fairbanks area. Helicopters and airplanes will be used to see how high the relatively warm temperatures extend above the city. Temperatures at the ground will be measured from moving automobiles.

Principal investigator for the research project is Dr. Sue Ann Bowling, assistant professor of geophysics at the Geophysical Institute. She has been associated with the Geophysical Institute since 1965 when she studied the effects of meteorological conditions in the Fairbanks ice fog under a National Aeronautics and Space Administration traineeship grant.

Other key scientists in the project will be Dr. Carl Benson, whose work on ice fog is well known, Dr. Takeshi Ohtake and Dr. Glenn Shaw, all staff members of the Geophysical Institute.