Implementation Report

MICROCOMPUTER IMPLEMENTATION OF SANTA: A PERSONNEL MANAGEMENT MODEL

by

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The result of this research has been the development of a
dultiobjective personnel model for use in the reassignment of summer
construction workers to alternate site locations during the winter months
where they will engage in snow and ice control activities. The model
(called SANTA for Systematic Analysis of Noninferior Transfer
Assignments) has been designed and implemented for use on existing
Indiana Department of Highways (IDoH) microcomputers located at each of
six District Offices. Presently, the model has been delivered to two
Districts (LaPorte and Greenfield) in the form of a microcomputer diskette
containing the object code for the model and a sample data file, and a
complete description of how to use the computer program.

Benefits to IDoH

During the development of SANTA over a 2-year period, several
sample data sets provided by IDoH were used to calibrate and test the
model. These data sets were real in the sense that they reflected actual
reassignment configurations. In all cases, the solutions generated by
SANTA were implemented by District personnel with little or no
modification.

To evaluate the performance of the model, a reassignment solution
from a previous time period (1983-84) snow season was compared to the
solution generated by SANTA for the same district for the 1984-85 snow
season. While the reassignment requirement has shifted slightly between
those two seasons, it was estimated that the overall savings to IDoH was
approximately 92,000 person-miles during the season. Considering the
cost of providing transportation, vehicles maintenance and problems with personnel grievances, the estimated overall savings to IDoH was estimated to be in the vicinity of $100,000 for that district alone during the 1984-85 snow season. Furthermore, the average travel distance from home station to job site dropped from 36+ miles/person to about 15, and the maximum travel distance was reduced from 56 miles to 30 miles. It may reasonably be argued that there was a corresponding positive impact on the quality and efficiency of overall service to the citizens of the state.

Suggestions for Further Implementation

The SANTA model has shown to be an effective means of developing strategies for the reassignment of seasonal personnel within IDoH. Two specific suggestions are offered for further model implementation.

First, it is suggested that a small group of IDoH engineers and managers be formed to identify additional applications for the SANTA model such as the reassignment of construction personnel to job sites. This group should include Mr. Dennis Berg from the LaPort office, Mr. Brad Davis from the Greenfield office, and Mr. Clay Whitmire from the Central IDoH office.

Second, the Data Services Division within IDoH should be designated as the technical support group for the model and should be provided the necessary training to be able to use, and maintain the program. Toward this end, it is recommended that Mr. Tom Stuper from that office be placed in charge of model support. Mr. Stuper has been given a copy of the program and is thoroughly familiar with its use.