

I. Introduction

This supplementary project has been undertaken as an effort to continue work previously completed in the Pooled Fund Study of Premature Concrete Pavement Deterioration. As such, it shares the objective of "Identifying the variables that are present in those pavements exhibiting premature deterioration," by collecting additional data and performing statistical analysis of those data. The approach and philosophy of this work are identical to that followed in the above project, and the Pooled Fund Study Final Report provides a detailed description of this process.

This project has involved the collection of data for additional sites in the state of Iowa. These sites have then been added to sites collected in the original study, and statistical analysis has been performed on the entire set. It is hoped that this will have two major effects. First, using data from only one state allows for the analysis of a larger set of independent variables with a greater degree of commonality than was possible in the multi-state study, since the data are not limited by state to state differences in data collection and retention. Second, more data on additional sites will increase the degrees of freedom in the model and hopefully add confidence to the results.

IV. Conclusions

- Models developed through this supplementary study broadly support, and do not contradict, previous conclusions.
- The most significant factors identified are a) the combination of Total Alkali and Total Sulfate and b) Concrete Strength.
- The variables identified through these studies should provide direction for the design of future experiments.