

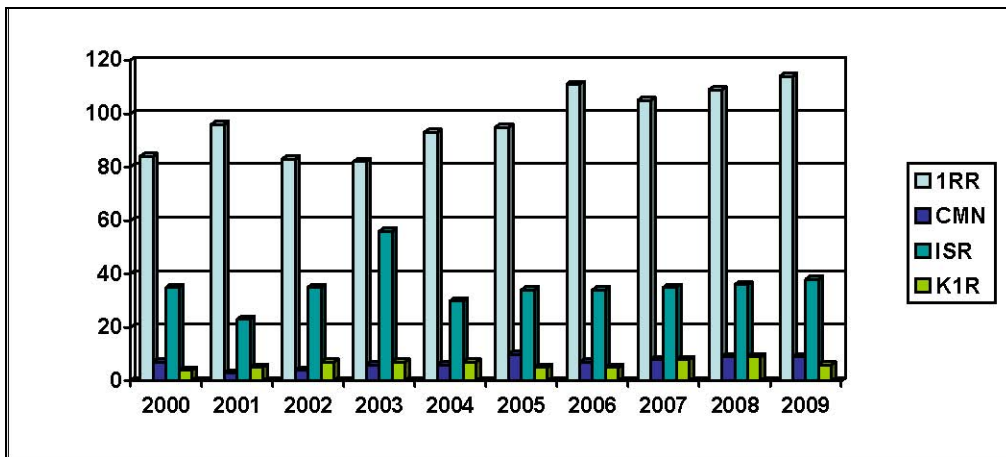
I. RESEARCH PROJECT TITLE

Kansas Pavement Preservation Initiative

II. OUTLINE OF THE PROPOSED IDEA

Like many other states, dwindling budgets for pavement preservation programs are forcing KDOT to look at the pavement preservation techniques. Pavement preservation has been a hallmark of the KDOT pavement management system – NOS. The KDOT pavement preservation program actions include route and crack seal, chip seal, 1- to 4-inch overlay, 1- to 4-inch inlay, heater scarification, cold in-place recycle (4-inch), Nova chip, modified slurry seal, cold milling, PCC patching, PCC dowel bar retrofit, PCC replacement, joint repair, diamond grinding, and combinations of the above actions. While the timing of these actions are picked up by the KDOT’s sophisticated NOS systems, the selection of pavement preservation projects requires engineering judgment, informed with the best available data. This practice by the highly experienced engineers and satisfactory, steady funding of the KDOT pavement preservation program (shown in Figure 1) have led to a system that is among the best in the nation. However, with the impending expiration of the Comprehensive Transportation Program (CTP), the funding of the pavement preservation program appears to be less certain. In order to secure future funding, the benefits of such a program need to be quantified.

Figure 1 KDOT Substantial maintenance allocation (pavement only, \$ millions)



Note: 2008 and 2009 are proposed/needed; 1RR:1-R resurfacing; CMN: Contract Maintenance.; ISR: Interstate Resurfacing; K1R: CLINK Resurfacing

There are many pavement maintenance and preservations technologies, materials, and systems that had been used by KDOT in its pavement preservation program. For the most part, the methods were selected based on historical experiences or based on the manufacturer’s recommendations for the proprietary ones. Thus there are large knowledge gaps in terms of effectiveness, durability, and other important factors. For this reason, the life cycle costs of these treatments cannot be truly calculated. That is why, a

carefully planned and coordinated education, research, innovation, and implementation plan for pavement preservation in Kansas is urgently needed.

III. LONG-TERM PLAN FOR SUSTAINED FUNDING

The proposed initiative is a multi-year initiative. The initiative is expected to be supported by the Kansas Department of Transportation. In year 2, this initiative is expected to become a pooled fund study supported by the states in Region 7 i.e. Iowa, Kansas, Missouri and Nebraska.

IV. WORK PLAN

The objective of this initiative is to establish and to execute a roadmap for pavement preservation-related education, training, research, development, and innovation. This initiative is a multi-year effort. The roadmap will be developed by an advisory committee consisting of experts from KDOT, industry, and academia. Kansas State University will be responsible for the execution of the roadmap.

Tentatively, the year 1 activities will consist of (1) developing notes and materials for a 2-day class on pavement preservation in Kansas in the Spring of 2008, and (2) quantification of the benefits of pavement preservation in Kansas based on historical data.

Budget for the first year: \$120,000

V. INTELLECTUAL MERIT AND BROAD IMPACT

The research should have a high priority. All highway agencies are currently trying to stretch the maintenance dollars through cost-effective pavement preservation strategies. This initiative has the potential to make a pavement preservation strategy more successful and save millions of dollars in alternative maintenance treatments. This would result in a big return in exchange for the small investment in this research project.

VI. PROGRAMMATIC THEME

This study will be carried out under the theme "Pavement Preservation". This project will further enhance KSU's already established reputation in the pavement engineering area.

VII. PROJECT PERSONNEL

This project will be carried out under the direction of Mustaque Hossain, Principal Investigator, Stefan R. Romanoschi, Co-Principal Investigator, and Dean M. Testa, Consultant. One graduate student (Ph.D.) and one undergraduate student in civil engineering will also work on this project.