CALTRANS PROBLEM STATEMENT
FOR
POTENTIAL NATIONAL INTEREST

I. PROBLEM TITLE

100-Year Concrete Pavements

II. RESEARCH PROBLEM STATEMENT

Pavement innovations are needed to maximize performance of the network as well as support environmental efforts in reducing greenhouse gas emissions from transportation. Research is needed to identify new 100-year pavement design concepts, assess cost-effectiveness, and evaluate factors in project selection.

III. LITERATURE SEARCH SUMMARY

Yet to be performed

IV. RESEARCH OBJECTIVE

The objective of this research is to study 100-year pavements addressing issues such as significantly reducing maintenance and congestion (caused by the current rate of rehabilitation and maintenance), substantial savings in construction materials, and reduced greenhouse gas emissions by increasing the pavement life cycle. The country needs more effective and efficient future roadways and concerns about the availability of a ready supply of aggregate sources for construction of infrastructure projects. Research will identify new concrete pavement design and construction concepts that can extend pavement life to 100 years. Determining whether this design strategy may be cost-effective is a goal. The project will address candidate project locations, traffic projections, construction schedules, and life cycle costs.

V. ESTIMATE OF PROBLEM FUNDING AND RESEARCH PERIOD

Recommended Funding: $175,000

VI. URGENCY, PAYOFF POTENTIAL, AND IMPLEMENTATION

The consequences of not performing this work will delay innovation that reduces maintenance and congestion (caused by the current rate of rehabilitation and maintenance), substantial savings in construction materials, and reductions in greenhouse gas emissions. Also, the lack of new concrete pavement designs and construction concepts, unknown cost-effectiveness, and uncertainty in project selection will be delayed as well.

Please contact the Caltrans member of your committee, sub committee, or task force to express interest or contact Wes Lum at Caltrans (wes.lum@dot.ca.gov).