CTRE director’s message: A major national project

CTRE and Iowa State University faculty are proud to be involved in a project of national significance—the development of a research plan for accelerated renewal of the nation’s highways. Most of us have heard the phrase, “get in, get out, stay out.” That is what this project is all about. Note that this is not just for special projects. The intent is to revamp the way highway projects are delivered to the public.

About F-SHRP

In TEA 21 (1998), Congress charged the Transportation Research Board with investigating the merits of a new Strategic Highway Research Program, generally called “F-SHRP.” The TRB Special Report 260, Strategic Highway Research, published in 2001, recommends a new SHRP with the overarching theme of “providing outstanding customer service for the 21st century.” The report recommends that Congress appropriate about $450 million over the six years of the next transportation reauthorization legislation.

Special Report 260 and Highway Research and Technology, The Need for Greater Investment (TRB, 2001) note a set of facts in support of F-SHRP that collectively amount to an impending highway crisis:

- VMT is projected to increase another 50 percent by 2020.
- By 2025, the US population is predicted to grow 20 percent to 360 million.
- By 2020, annual truck volume is predicted to double from 8 billion tons to 16.8 billion tons.
- In 68 major cities, the cost of congestion is estimated in excess of $70 billion annually.
- The public has very little tolerance for delay, especially multi-year delay.
- About 830 people are killed and 42,000 injured annually in work zones.
- Based on 1998 obligations, resurfacing is being performed on 12.8 percent (20,500 miles) of the national highway system annually. This is a 7-8 year resurfacing cycle for the 160,000-mile system.
- Reconstruction was performed on 3,200 miles, implying a 50-year replacement cycle. This suggests the need for a 50-year roadway or “perpetually renewable” roadway.
- Sixteen percent of the bridge inventory (583,000) is functionally obsolete or structurally deficient.

The need for major reconstruction and expansion of capacity is clear. The research problems are how to minimize disruption; do this work rapidly, often under traffic; produce a longer-lived product; and meet environmental goals.

AASHTO support

AASHTO supports F-SHRP. Through the NCHRP program AASHTO sponsored four projects to develop research plans for each strategic focus area named in Special Report 260:

- renewal; accelerating the renewal of America’s highways
- safety: making significant improvements in highway safety
- reliability: providing a highway system with reliable travel times
- capacity: providing highway capacity in support of the nation’s economic, environmental, and social goals

If Congress authorizes F-SHRP, plans of action will be ready.

CTRE’s role

CTRE leads a team of ISU faculty, Purdue University faculty, and TDC Partners, LTD staff charged with developing the research plan for renewal. The objectives are:

- to achieve renewal that is performed rapidly, causes minimum disruption, and produces long-lived facilities and
- to achieve such renewal not just on high-profile projects but consistently through the system.

The CTRE research team has identified eight topics that address the goals:

1. project selection process
2. project financing
3. agency and public relationships
4. design procedures
5. construction specification and contracting procedures
6. material selection and testing
7. construction and maintenance procedures
8. policy and technology transfer

Several research projects will be recommended under each topic, totaling about $18 million per year.

CTRE will soon be requesting feedback on the draft plan. If you have thoughts on these issues or ideas that address the goals, please contact me, 515-294-8103 or andrie@iastate.edu.

Ali Kamyab leaves for California

Since coming to the United States from Iran in 1978, Ali Kamyab, CTRE research scientist, has spent nearly half those years working at CTRE. Now he’s moving on.

Kamyab came to Iowa State University in 1991 as a PhD student in civil engineering.