IRISE: Year 6 Program

Presenter: Gary Euler, Associate Director

Formulating the Program

- October 27 brainstorming session
- Steering Committee/District review of 15 short problem statements prepared by faculty
  - Identification of priorities
- Recommended three projects to Steering Committee
  - Constrained by available funds
- Development of draft project scope statements
  - Review by Steering Committee representatives
- Development of final project scope statements based on comments received

Year 6 Projects

- Bridge Load Ratings
- Self-Heating Pavements
- Pavement Robochat

Bridge Load Ratings

- The Problem: Need for a simplified and sufficiently accurate analysis procedure to determine whether a load posting is warranted if it is found that current analysis procedures are overly conservative
- Approach:
  - Conduct FEM analysis of several concrete T-beam bridges
  - Compare with results obtained from current procedure (are postings overly conservative?)
  - Develop software tool based on extrapolated FEM analysis
- Duration: 18-months
- Cost: $174,578
- PI: Piero Rizzo

Self-Heating Pavements

- The Problem: Constructing existing approaches to self-heating is complex & costly, mainly applicable to new pavements, and difficult to maintain
- Approach: Develop an approach using surface-mounted heating elements that can be applied to existing pavements and requires less power to operate
  - Determine electrical flow requirements
  - Fabricate slabs with surface-mounted heating elements
  - Laboratory and small-scale field testing
- Duration: 24-months
- Cost: $191,510
- PI: Amir Alavi

Pavement Robochat

- The Problem: Need to improve consistency and currency of practice and provide effective/efficient training
- Approach:
  - Identify appropriate platform
  - Select domain knowledge sources
  - Fine tune and validate
- Duration: 24-months
- Cost: $204,543
- PI: Lev Khazanovich

Year 6 Project Budgets & Contributions

Project	Cost Estimate
Bridge Load Ratings	$174,578
Self-Heating Pavements	$191,510
Pavement Robochat	$204,543
TOTAL	**$570,631**
Expected Membership Contributions	**$750,000**
Remaining	**$179,369**

IDEA Form Submission Assistance

- Infrastructure Projects
  - Bridge Asset Management Prioritization
  - Bridge Scour Forecasting
  - Constructability of Longer Channel Beam Bridges
- Operations
  - Arrivals on Green Using Stop Bar Detection
  - Emergency Response Vehicles Through Work Zones