Federal Highway Administration's Bridge & Structures Research, Deployment & Education (RD&E) Program: 2006–2009

Ian M. Friedland, P.E.
Technical Director,
Bridge & Structures R&D

2006 – 2009 RD&E Programs

- Authorized by SAFETEA-LU, effective FY 2006 thru FY 2009

- Significant funding for bridge and structures research, deployment & education, but……all funds fully designated or earmarked

Designated RD&E Programs

Program	Authorized Funding	Actual Funding
HPS	$4.1 mil/yr	~$2.9 mil/yr
HPC	$4.125 mil/yr	~$2.9 mil/yr
UHPC	$625,000/yr	~$435,000/yr
Steel Bridge Testing	$1.25 mil/yr	$875,000/yr
Innovative Bridge Research & Deployment (IBRD)	$9.0 mil/yr (after HPC reduction)	~$6.4 mil/yr
Long-Term Bridge Performance Program	$7.75 mil/yr	~$5.4 mil/yr
ASR	$2.45 mil/yr	~$1.7 mil/yr

Earmarks

- Seismic Research – $2.5 mil/yr
  - Univ Nevada Reno and Univ Buffalo
- Wood Composite Materials Demonstration – $1 mil/yr FY 06 & 07
  - Univ of Maine

Discretionary RD&E & Technical Support

- No Discretionary RD&E Funding!!!
- Result – No funding or support for critical initiatives and core programs, including:
  - Security
  - Bridge or asset management
  - Technical support
  - FHWA contributions to pool fund studies
  - Training, etc……

The FHWA Long-Term Bridge Performance Program (LTBPP)

Long-Term Bridge Performance Program

- Created by SAFETEA-LU as a 20-year program
- Funding authorized for FY 2006 thru 2009
  - Funding requested ~$20 million/yr
  - Funding authorized ~$7.75 million/yr (~$5.5 million available)

LTBPP: Objectives

Collect, document, and make available high-quality quantitative performance data on a representative sample of bridges nationwide

Bridge Inventory Issues/Needs

- High-quality performance data
- Data to support improved deterioration models and life-cycle cost analysis
- Quantify effectiveness of various MRR strategies
- Data to support performance measures at both service and extreme event limit-states
- Decision-making tools and algorithms that support optimizal allocation of resources

LTBPP: Technical Approach

- ***Detailed period inspection*** (and data collection) of a large number of bridges representing ~75%–85% of the NBI
- ***Instrumented and continuously monitored*** bridges to capture unusual and extreme event loading and performance
- ***Forensic autopsies*** of decommissioned bridges

LTBPP: Considerations

- Specific data to be collected
- Types and number of bridges to be inspected and monitored
- Data quality and collection strategies
- Data management and archiving
- Data mining and analysis
- Data and information dissemination
- Opportunities for participation and collaboration

LTBPP: Administrative Approach

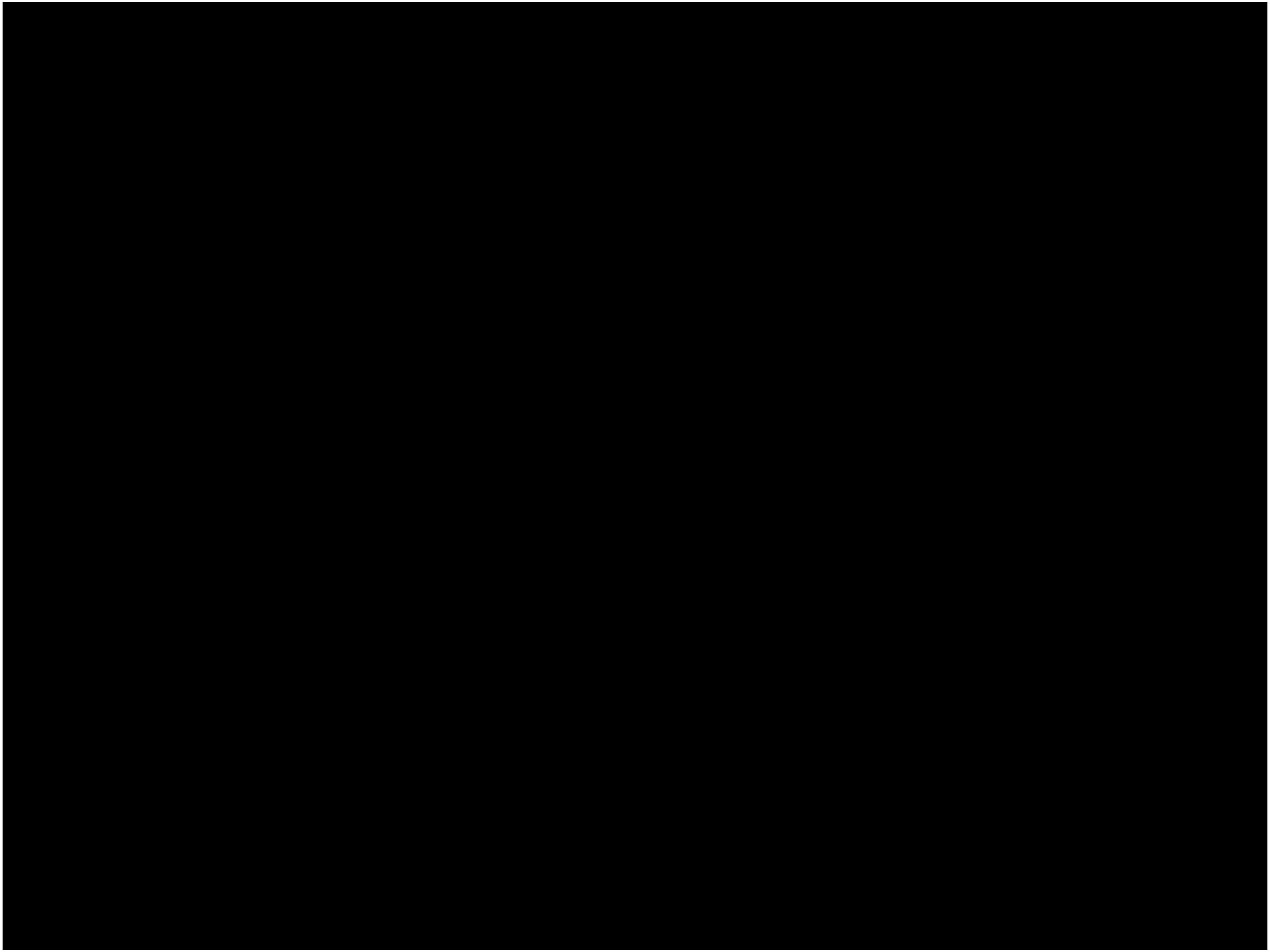
- State and local agency partnerships
- Regional contractors to conduct detailed periodic inspection
- Annual meetings with stakeholders to review and assess program activities, and training for data collection contractors
- Outreach and collaborative opportunities to mine data and develop new models, tools, algorithms

LTBPP: State Roles & Responsibilities

- Provide access to bridges and bridge files
- Assist in safety and traffic control measures
- Assist in annual program oversight and guidance via a State LTBPP Coordinators Committee

LTBPP: Expected Outcomes

- Improved knowledge on bridge performance
- Advances in deterioration and predictive models
- Support for improved design & material standards; improved maintenance practices
- Reliable inspection/condition information thru NDE
- Support for advanced management decision-making tools
- Improved operational performance



James D. Cooper

1942 – 2005