

# PAVEMENT DESIGN GUIDE GENERAL OVERVIEW

GOOD  
AFTERNOON



# **AASHTO JOINT TECHNICAL COMMITTEE ON PAVEMENTS**



**CHAIR: Dan Dawood**

**VICE CHAIR: Linda Pierce**



~~AASHTO 2002  
PAVEMENT  
DESIGN GUIDE~~





AASHTO MECHANISTIC  
– EMPIRICAL  
PAVEMENT DESIGN  
GUIDE

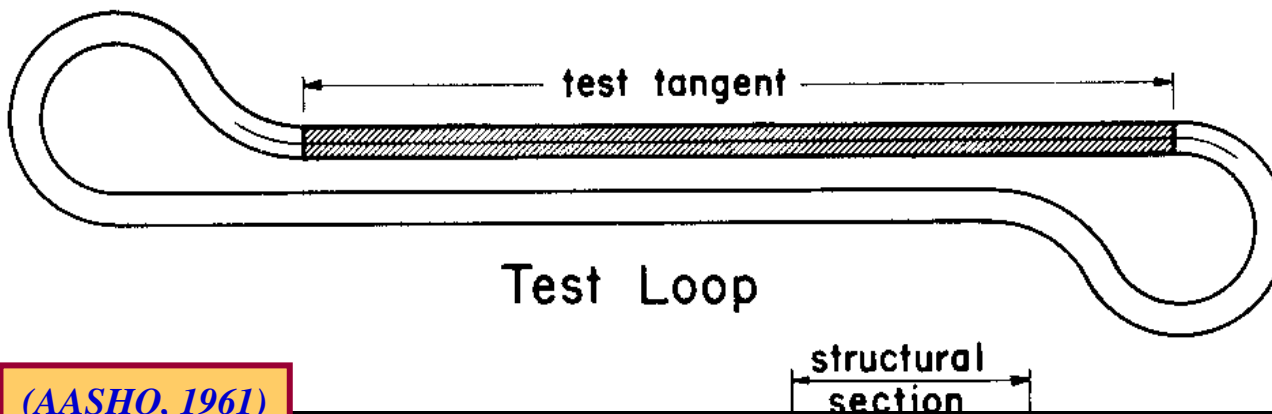
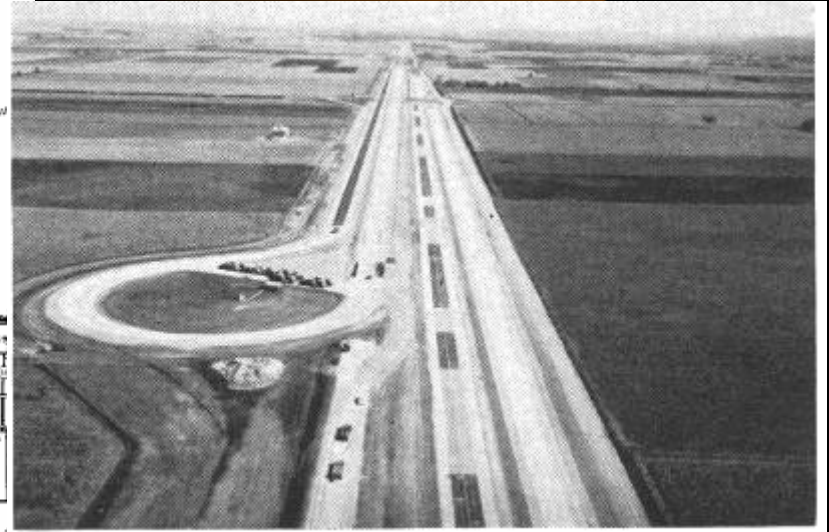
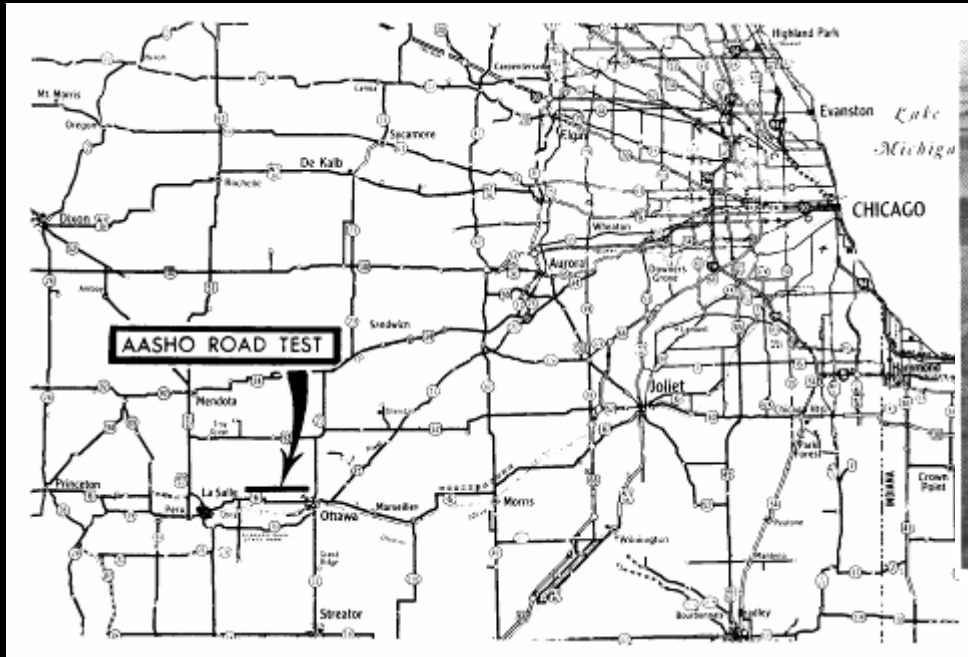


# PRESENTATION OUTLINE

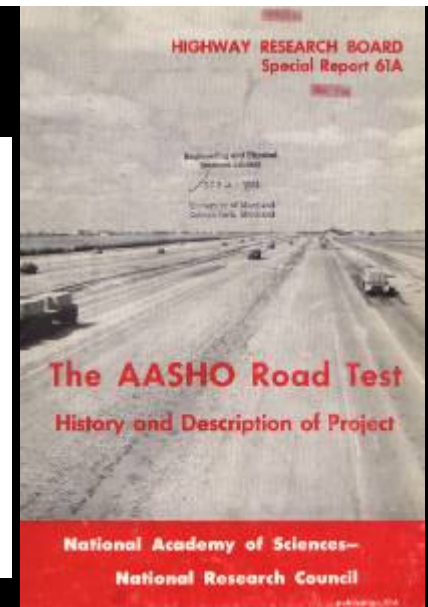


- BRIEF HISTORY: DEVELOPMENT OF THE NEW M-E PAVEMENT DESIGN PROCEDURES
- OVERVIEW OF THE M-E PAVEMENT DESIGN PROCEDURES
- STATUS OF THE IMPLEMENTATION OF THE NEW M-E PAVEMENT DESIGN GUIDE

# AASHO Road Test (late 1950's)



(AASHO, 1961)



# HISTORY OF DESIGN GUIDES



1972 – INTERIM GUIDE BASED ON EMPIRICAL EQUATIONS

1986 – MAJOR REVISIONS OF 1972 GUIDE

1993

PROPOSED GUIDE BASED ON M-E PRINCIPLES  
UTILIZE NUMERICAL MODELS FROM LTPP

# NCHRP 1 – 37A



- DEVELOPMENT OF A NEW GUIDE FOR THE DESIGN OF NEW AND REHABILITATED PAVEMENT STRUCTURES

<http://www.trb.org/downloads/mepdg/>



# M-E PAVEMENT GUIDE



PRESENT PAVEMENT DESIGN GUIDE –  
*EMPIRICAL BASED*

PROPOSED PAVEMENT DESIGN GUIDE –  
*PERFORMANCE BASED*

# M-E PAVEMENT DESIGN GUIDE INPUTS



- TRAFFIC DATA
- CLIMATE INFORMATION
- MATERIALS DATA

# M-E PAVEMENT DESIGN GUIDE OUTPUT




## FLEXIBLE PAVEMENT DISTRESSES

- RUTTING
- CRACKING

## RIGID PAVEMENT DISTRESSES

- FAULTING
- CRACKING
- PUNCH-OUTS (CRCP)

# NCHRP PROJECT I-40



FACILITATING THE IMPLEMENTATION OF THE  
GUIDE FOR THE DESIGN OF NEW AND  
REHABILITATED PAVEMENT STRUCTURES

# NCHRP PROJECT I-40



PROJECT I-40A

INDEPENDENT REVIEW OF THE  
RECOMMENDED M-E DESIGN GUIDE  
AND SOFTWARE – 12 CONTRACTS

PROJECT I-40B

LOCAL CALIBRATION GUIDANCE  
FOR THE RECOMMENDED GUIDE  
FOR M-E DESIGN – REFINE  
PERFORMANCE MODELS

PROJECT I-40D

TECHNICAL ASSISTANCE TO NCHRP  
AND NCHRP PROJECT I-40A REVIEW  
TEAMS ON THE M-E PAVEMENT  
DESIGN GUIDE SOFTWARE

PROJECT I-40J

SUPPORT FOR THE M-E PAVEMENT  
DESIGN GUIDE LEAD STATES  
ACTIVITY

# NCHRP PROJECT I-40 A OBJECTIVES



1. Assess the reasonability and completeness of the Guide's concepts and procedures.
2. Appraise the consistency and sensitivity of the flexible and rigid pavement design models.
3. Assess the calibration of the distress models.
4. Assess the clarity, ease of use, capabilities, speed and stability of the design software.
5. Assess opportunities for implementation.

# COMMENTS ON THE M-E PAVEMENT DESIGN GUIDE



E-MAIL: [pavement-guide@nas.edu](mailto:pavement-guide@nas.edu)

FAX: Ed Harrington at 202-334-2006



**QUESTIONS**

