

2003 Western Hydraulic Engineer Conference



FHWA Strategic Goals **(Improve Mobility & Increase Productivity)**

Bridge Performance Objectives

MOBILITY

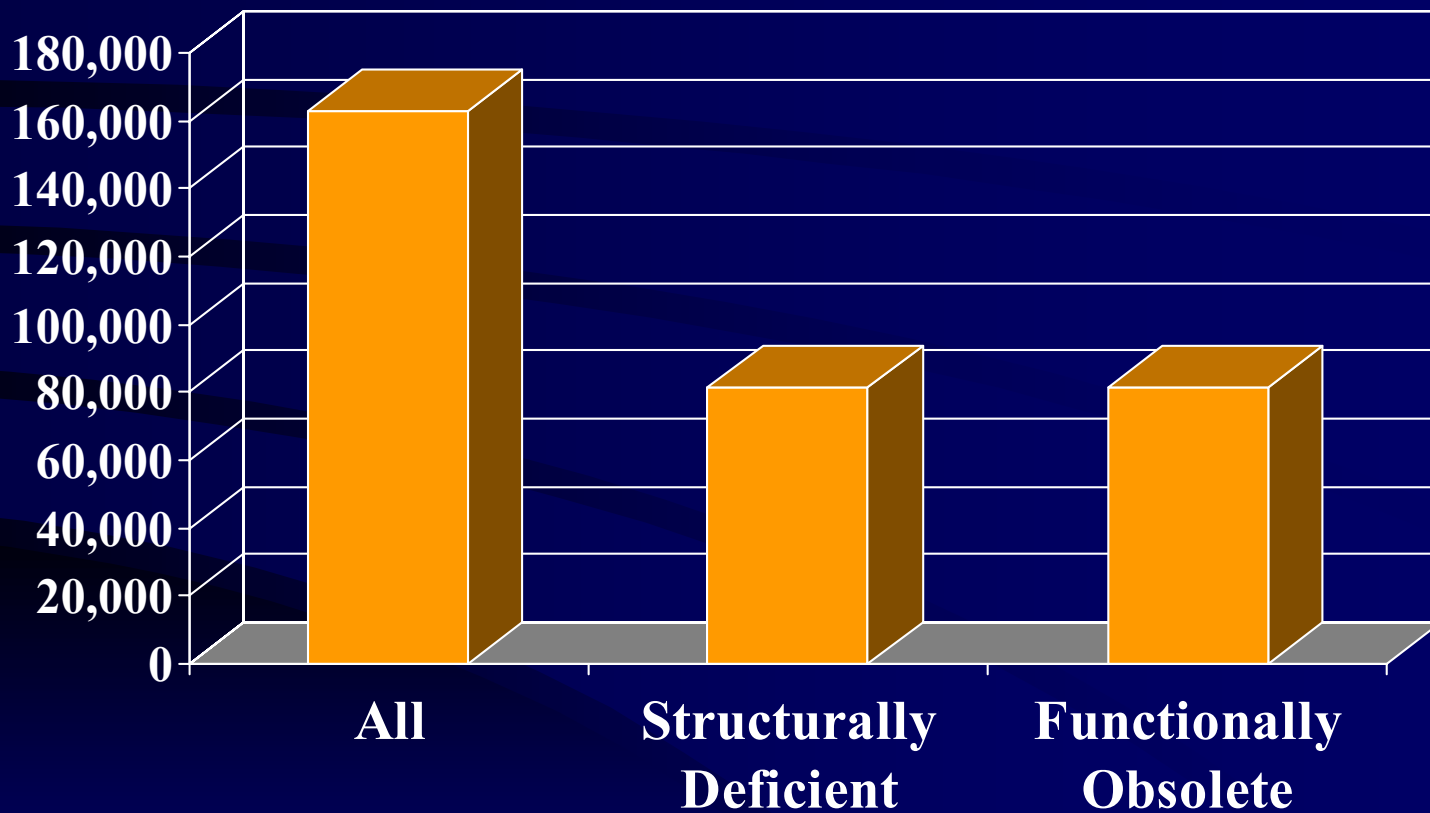
Improve Condition of
NHS & Non-NHS Bridges

PRODUCTIVITY

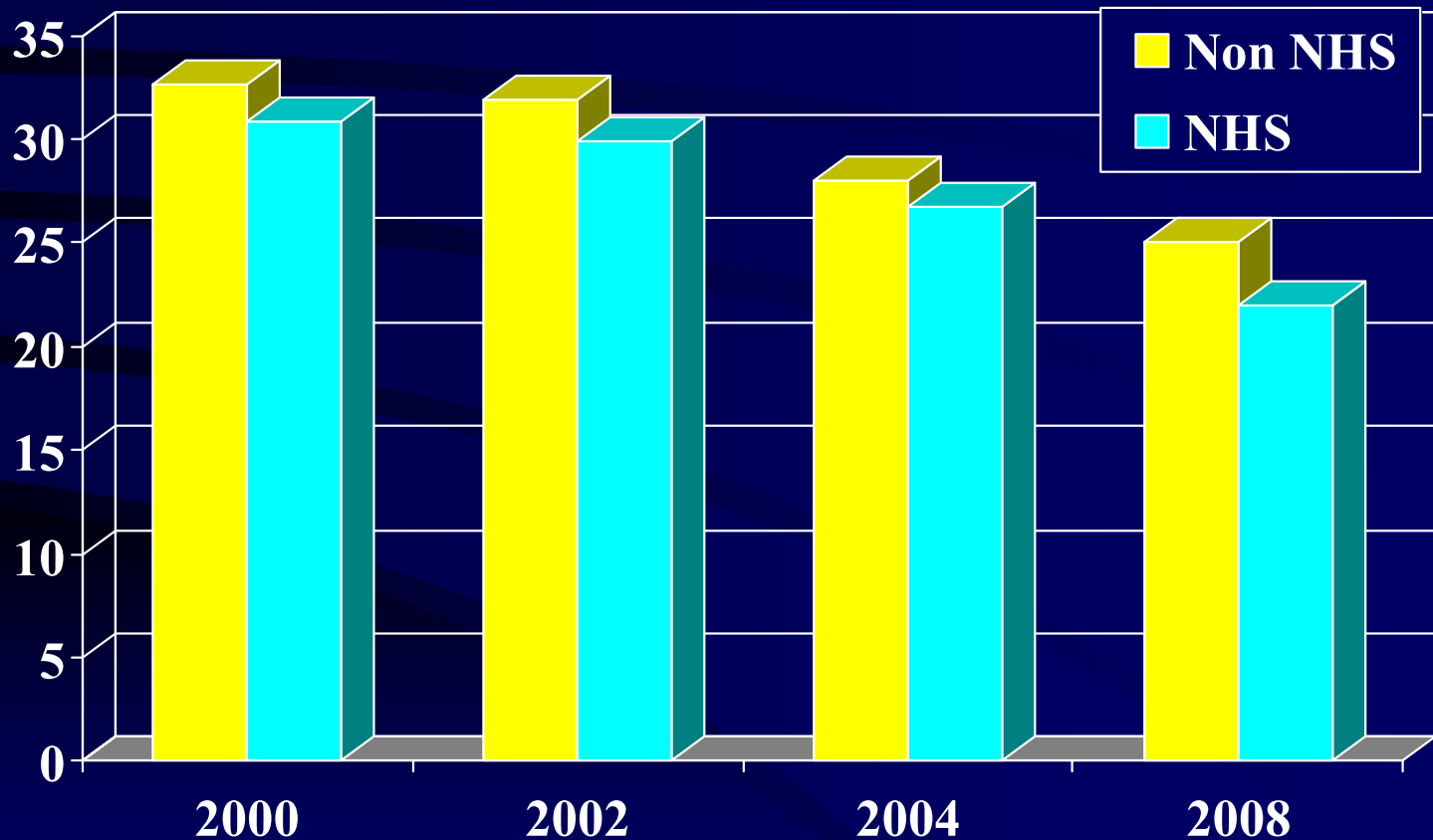
Reduce Life Cycle
Costs (of Highways
& Bridges)

of Bridges (CY 2002)

www.fhwa.dot.gov/bridge/deficient.htm



% of Bridge Deck Area Rated Deficient



TEA-21 AUTHORIZATIONS

I. Federal-aid Highways	\$169.5 B
II. Highway Safety	\$ 1.7 B
III. Federal Transit	\$ 42.0 B
IV. Motor Carrier Safety	\$ 0.6 B
V. Research	\$ 2.9 B
VII. Miscellaneous	<u>\$ 0.5 B</u>
TOTAL	\$217.3 B

How Much of the \$169.5 B Goes into Pavements and Bridges?

- A) 30%
- B) 55%
- C) 70%
- D) 80%

How Much of the \$169.5 B Goes into Pavements and Bridges?

A) 30%

B) 55%

C) 70% (15% Bridges)

D) 80%

Highway Bridge Replacement & Rehabilitation Program (HBRRP)

- **23 U.S.C. Section 144 Defines the HBRRP**
- **The Discretionary Bridge Program is continued under TEA-21(\$100 M provided each FY)**

<u>FY</u>	<u>\$ Billion</u>
1998	2.9
1999	3.4
2000	3.4
2001	3.5
2002	3.6
<u>2003</u>	<u>3.6</u>
Total	\$20.4B

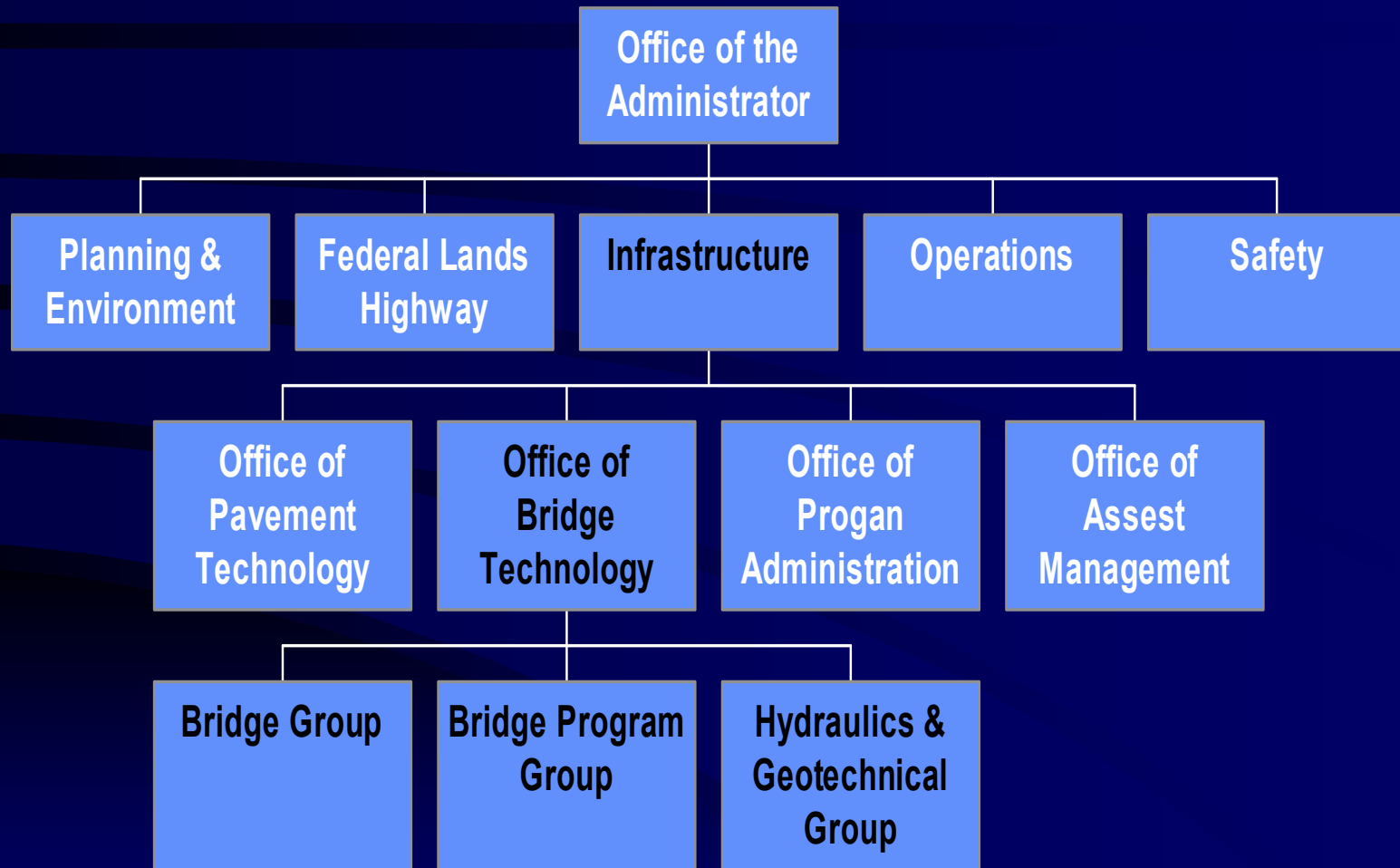
www.fhwa.dot.gov/bridge

The National Bridge Inspection Program (NBIP)

- 23 USC Section 151 - Defines the NBIS
- 23 CFR Section 650 - Regulations for the NBIS
- ANPRM published and NPRM is pending

www.fhwa.dot.gov/bridge

FHWA HEADQUARTERS



Office of Bridge Technology

www.fhwa.dot.gov/bridge

Functions:

- **Legislation / Program Development**
- **Review, Assistance & Approval of Unusual Bridges & Structures** →
- National Bridge Inspection Standards & Inventory (NBI)
- Bridge Replacement Program



Office of Bridge Technology

www.fhwa.dot.gov/bridge

Technology for:

- **Hydraulics of Bridge Waterways & Culverts**
- **Foundations & Retaining Walls**
- **Seismic Events**
- **Bridges**
- **Tunnels**

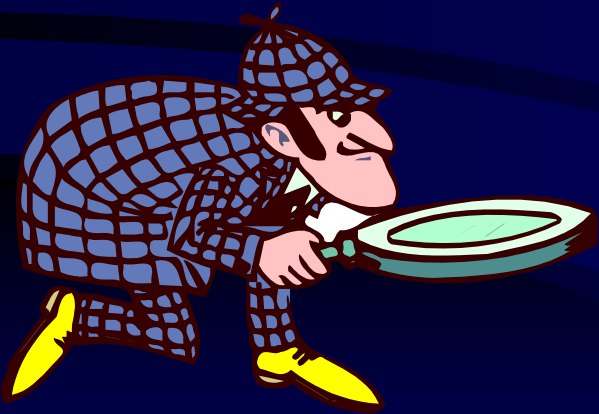


Office of Pavement Technology

www.fhwa.dot.gov/infrastructure/pavement

Functions:

- Pavement Policy
- Asphalt & Concrete Materials
- Pavement Design & Rehab
- Thin Surface Treatments
- **Pavement Drainage**
- Superpave
- LTPP Implementation

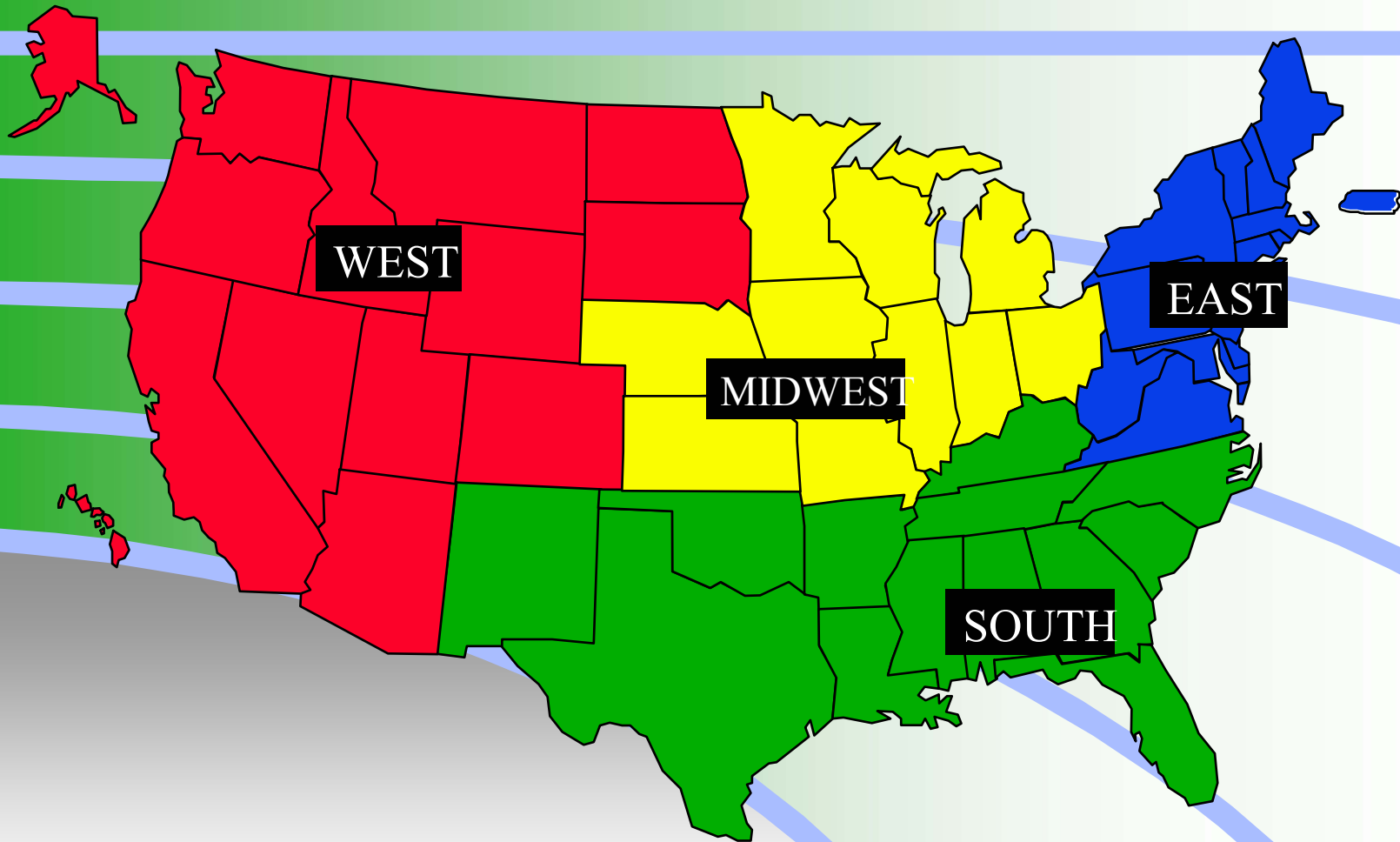


Headquarters Supports Resource Centers & Division Offices

- Project policy questions
- General program initiatives
- Shares/provide technical expertise
- Assists with Technology Deployment

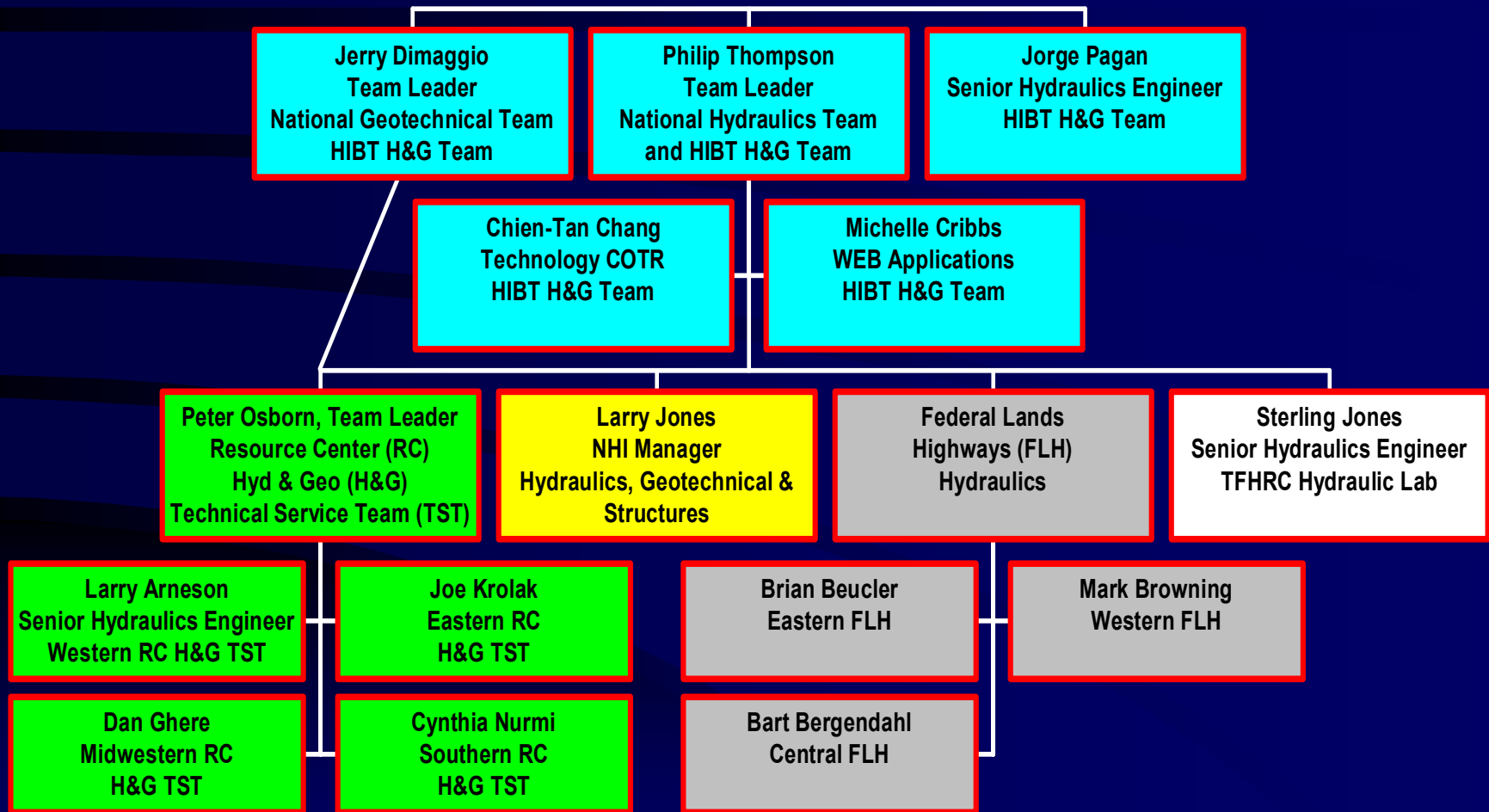


Resource Center Areas



FHWA

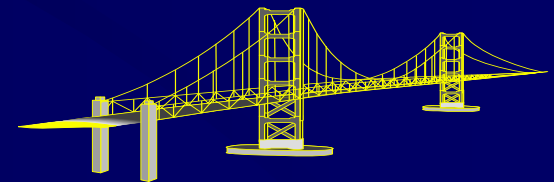
National Hydraulics Team



FHWA HYDRAULICS ACTIVITIES

April 15, 2003

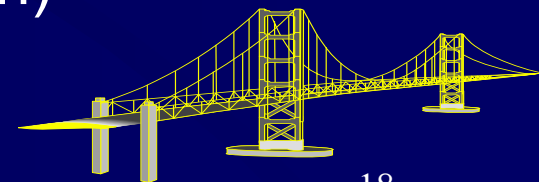
HIBT



17

Rehabilitation Act Amendments of 1998 (Section 508)

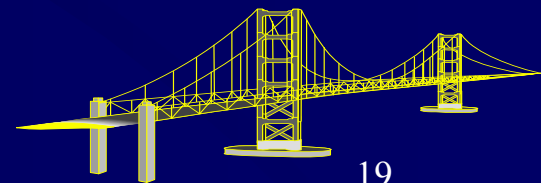
- 23 CFR Section 1194 – Electronic & Information Technology Accessibility Standards
- Requires access to & use of information & data
 - Web Pages (FHWA will be posting in HTML)
 - Software (Menus accessible by key board)
 - CADD exempt (fundamental alteration)



Hydraulics Design Series (HDS) Converted to Dual Units

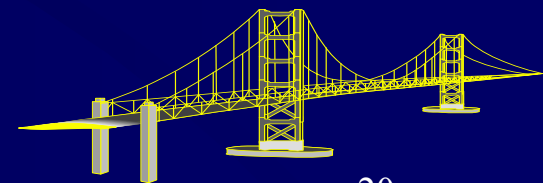
PDFs available at isddc.dot.gov

- **HDS 2, Highway Hydrology**
- **HDS 4, Intro. to Highway Hydraulics**
- **HDS 5, Hydraulic Design of Culverts**
- **HDS 6, River Engineering**



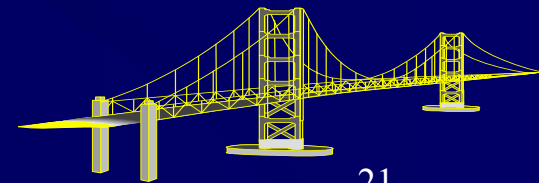
Hydraulic Engineering Circulars (HEC) Converted to Dual Units

- **HEC 18, 20, 22, 23, 24 (complete)**
PDFs available at isddc.dot.gov
- **HEC 9, Design of Debris Control (draft)**
- **HEC 25, Tidal Hydrology & Hydraulics (draft)**
- **HEC 14 & 15 – FY 2003**



HYDRAULICS SOFTWARE

- **HY8 (InpGen, PCViewer & Energy)**
- **WMS Interfaces (HEC 22 & HDS5)**
- **SMS Interfaces (FLO1D & BRISTARS)**
- **CAESAR**
- **SAMWin (Stable Channel Analysis Model)**
- **HYDRAIN**



NHI COURSE UPDATES COMPLETED

135010 River Engineering

135027 Urban Drainage Design

135028 Pump Station Design

135046 Stream Stability & Scour

135048 Countermeasures

135067 Practical Highway Hydrology

NHI COURSE UPDATES

Underway

135041 HEC-RAS

135047 Inspectors 1 day Scour

135056 Culvert Design

135065 Intro. to Highway Hydraulics

135081 Intro. to Highway Hydraulics Software

NHI COURSE UPDATES NEEDED

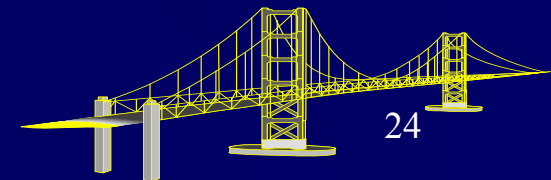
135082 Tidal Hydrology & Hydraulics (FY 03)

135083 Tidal Software (FY 04)

135071 FESWMS/SMS (FY 04)

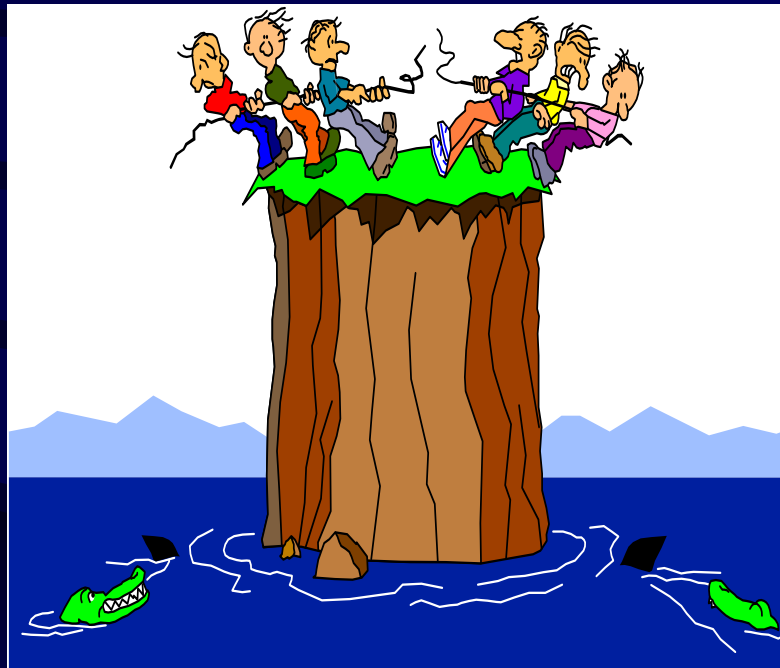
135080 Hydrologic Modeling WMS (FY 04)

135084 Sediment Transport Modeling (FY05)



Partnerships with Other Agencies & Organizations

FHWA >



- < State DOTs
- < AASHTO
- < Local Agencies
- < Federal Agencies

AASHTO Task Force

Highway Drainage Guidelines

- 1999 Metric** - **2003 SI complete**
- **2003 SI & US draft**

Model Drainage Manual

- 1991 US** - **2003 US draft**
- 1999 Metric** - **2003 SI complete**

AASHTO Task Force NCHRP Projects FY 04

- **Effects of Debris Scour**
- **Criteria for Selecting Hydr. Models**
- **Risk-based Guidelines for Determining the Need for investigation of Unknown Foundations**
- **15 ongoing projects (see handout)**



SUMMARY HIGHLIGHTS

- **Bridge Program**
- **Organizational Structure**
- **Hydraulics Activities**
- **www.fhwa.dot.gov/bridge**

