Changes in Bridge Management Section

- Retirements - 3 of 4 staff < 1 year
- New Bridge Management Staff
  - Bridge Management System
  - Bridge Inspection
  - Load Rating
  - Bridge Preservation
- Dedicated Bridge Inspectors - State System
  - Consultant Bridges Inspectors - Local System
We Need a Bridge!

Life of a Bridge

Bridge Management
Inspect - SAFETY & Condition
Load Rate - SAFE Capacity
Maintain Inventory; Manage Bridges
Preserve (w/Maintenance & Districts)
Life of the bridge - 50 to 100 Years!

Prelim. Eng. & Hydraulics
Environmental - Keep critters safe & happy!
Hydraulics - How much water needs to pass?

Construction
Build it right!
In compliance with Specs
According to Plans

Design
Use Concrete or Steel?
How many piers?
Can we make it look cool?

Bridge Management
Inspect - SAFETY & Condition
Load Rate - SAFE Capacity
Maintain Inventory; Manage Bridges
Preserve (w/Maintenance & Districts)
Life of the bridge - 50 to 100 Years!
What’s Changing?

- New Manuals
  - Bridge Inspection Manual (Draft)
  - Load Rating Manual (Draft)
  - FHWA NPRM (Notice of Proposed Rule Making)
- National Bridge Inspection Standards (NBIS)
  - 23 CFR Part 650, Subpart C
- Replace the FHWA Coding Guide
- Specifications for National Bridge Inspections (SNBI)
- Anticipate Final Rule early 2021 . . . or later
What’s Changing?

- Bridge Inspection Program
  - Dedicated State Inspectors
    - Compliance w/ FHWA Metrics; timelines
    - Improved Detail needed for Managing Bridge Assets
  - Consultant Local Agency Inspectors
    - 4 Regions
    - 4 Consultants (HDR, AECOM, Collins/SRF, Stantec)
    - Inspections and Load Ratings
    - NDDOT guidelines; NDDOT responsible for records, timelines
  - Different Inspection App (inspectX)
FHWA 23 Metrics

- I-35W Bridge, Minneapolis, MN
  - Collapsed August 1st, 2007
- FHWA - Metrics for the Oversight of the National Bridge Inspection Program
FHWA 23 Metrics

- FHWA’s Compliance Review of Bridge Safety Inspection Program
- Metrics are assessed for compliance with NBIS
- 23 Metrics
- Four levels of Compliance
  - Compliant (C)
  - Substantially Compliant (SC)
    - Improvement Plan (IP)
  - Non-Compliant (NC)
    - Plan of Corrective Action (PCA)
  - Conditionally Compliant (CC)
    - Meet PCA requirements
What else do we do?

- **Bridge Inventory Management**
  - Maintain Inventory - All public bridges in State*
    - 4955 Bridges (1755 State; 3200 County/Urban/Other Public)
    - >130 Data items per Bridge
      - Location, Condition, Structure Type & Material, Date Built, Length, Width, Owner, Feature Crossed, etc.
    - Elements, Defects, Protective Systems
    - Submitted to FHWA

- **Asset Management (AASHTOWare BrM) - State Bridges**
  - Operate, maintain, and improve assets . . . based on quality information . . . through maintenance, preservation, repair, rehabilitation, and replacement . . . maintain state of good repair . . . at minimum cost
  - Performance Measures
  - FHWA Transportation Asset Management Plan (TAMP)
  - Deterioration Modeling & Condition Forecasting
  - Program & Project Planning & STIP

![State Bridge Condition (Deck Area)](chart.png)

- Good: 53%
- Fair: 45%
- Poor: 2%
Challenges - Aging Bridges

- **Design life**
  - Past typically 50 yrs
  - Current - 75 yrs +

- **Current Bridge Age**
  - State & Local Bridges >20’
  - State Owned Bridges
    - Includes Box Culverts & Structural Plate Pipes ≥8’

- **Manage**

- **Maintain/Preserve**
Bridge Preservation

- Actions/Policies that cost effectively keep bridge in good condition and increase the life of the bridge
- Work with Maintenance Division & Districts
  - Clean, Sweep, Flush
  - Crack Seal
  - Silane Treat (Water Repellent)
  - Completing Repairs - Minor to Moderate Rehab
- Keep small problems from becoming big problems

Keep Bridges in Good Condition; Make them Last
NDDOT Bridge Management . . .

- Inspect
- Load Rate
- Manage
- Preserve

*Safely Move People and Goods*