Summary:

- Introduction
- Objectives
- Pontis Requirements for Analysis
- Network Analysis and Results
- Bridge Preservation Program
- Conclusions (Side by Side Comparisons)
Louisiana’s Bridge Network

- 13,174 Total Bridges
- 5,264 Bridges Off the State System
- 7,910 Bridges On the State System
  - Of Which 111 are Movable Bridges
  - Of Which 1,942 are Structurally Deficient or Functionally Obsolete
Where were bridges built?

Number of Bridges by District

<table>
<thead>
<tr>
<th>District</th>
<th>Number of Bridges</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1000</td>
</tr>
<tr>
<td>03</td>
<td>1200</td>
</tr>
<tr>
<td>04</td>
<td>1300</td>
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<tr>
<td>05</td>
<td>1400</td>
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<tr>
<td>07</td>
<td>1500</td>
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<tr>
<td>08</td>
<td>1600</td>
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<tr>
<td>58</td>
<td>1700</td>
</tr>
<tr>
<td>61</td>
<td>1800</td>
</tr>
<tr>
<td>62</td>
<td>1900</td>
</tr>
</tbody>
</table>
Where were bridges built?

Deck Area Totals by District

![Bar chart showing deck area totals by district. The chart displays the area in millions of square feet for each district. The districts are labeled 02, 03, 04, 05, 07, 08, 58, 61, and 62. The area ranges from 0 to 45 millions of square feet. District 02 has the highest area, significantly higher than the other districts.]
When were bridges built?

Percentage of Deck Area Built by Decade
Future Needs of Bridge Network

- Majority of Bridges Reaching Middle Age
- No usable network tool available
- No Long-Range Network Plan in Place
Pontis Requirements for Analysis

- Lack of Pontis Data
  - Elements, Quantities, and Conditions
  - Deterioration Models
  - Cost Models

- Time Required to Collect and Accumulate Data

- Need for an Interim Tool

Pontis Implementation
Session 88
Wednesday, 10 am
Interim Tool and Data Availability

• Develop Pontis Database and an approach using NBI data
• Analyze historical NBI data to determine deterioration probabilities
• NBI Data
  – Accumulated over past 25 years
  – 3 available conditions
Current Bridge Preservation Practices

- Replacement of Worst Bridges
- Rehabilitation of Some Structures
- STIP for Bridge Program in FY 2007
  - 32 Replacements
  - 3 Rehab
  - 5 New Structures
Bridge Preservation (On)
Budget Partition

- Historically (1991-2004) – Funding Has Averaged $50 Million Per Year
- FY 2005 - $65 Million
- FY 2006 - $70 Million
- FY 2007 - $85 Million
- Project Delivery Steering Committee is Proposing an Increase to $120 Million for the Next 5 Years
Performance Indicators

• Bridge Needs
  – Cost of Performing Preservation and Implement Work Recommended

• Health Index
  – Structural Quality
  – Numerical Rating of 0 to 100
  – Asset Value Based
  – Ratio of Current Element Value to the Initial Element Value
  – Differs from Sufficiency Rating
    • Structural Condition without Regard to Bridge’s Functional Adequacy
Needs Trend With $70M Budget
Needs Trend With $85M Budget
Needs Trend With $120M Budget
Needs Trend (Replacement Practice)
Health Index Trends With $70M Budget

- Good
- Fair
- Poor
Health Index Trends With $120M Budget

- Good
- Fair
- Poor

Yearly data from 2007 to 2036 with green, yellow, and red areas indicating different health index levels.
Average Health Index (Replacement Practice)
DOTD and Preventive Maintenance

- SAFETEA-LU (PUBLIC LAW 109-59) – AUG, 2005
  - SEC.1114.HIGHWAY BRIDGE PROGRAM.
    “(2) TYPES OF ASSISTANCE.—On application by a State or States to the Secretary, the Secretary may approve Federal assistance for any of the following activities for a highway bridge that has been determined to be eligible for replacement or rehabilitation under subsection (b) or (c):
    “(A) Painting.
    “(B) Seismic retrofit.
    “(C) Systematic preventive maintenance.
    “(D) Installation of scour countermeasures.
    “(E) Application of calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and de-icing compositions.

- Section 41 System Preservation
- Bridge Preservation Unit Added in 2006
- FY 07-08 Budget - $3 Million
Needs With MR&R $70M Budget
Needs With MR&R $85M Budget
Needs With MR&R $120M Budget
Needs Trend With MR&R
Health Index Trends $70M With MR&R
Health Index Trends $120M
With MR&R
Average Health Index (With MR&R)
Compare Needs at $85M Budget
(Pure Replacement vs. Replacement with MR&R)
Compare Health Index at $85M Budget
(Pure Replacement vs. Replacement with MR&R)
Preservation Work (MR&R) at $85M Budget
Preservation Work (MR&R) at $120M Budget
Thank You!