TxDOT 2030 Bridge Needs Assessment Update meeting 8/21/2008

José Weissmann, Karl Frank and Rob Harrison

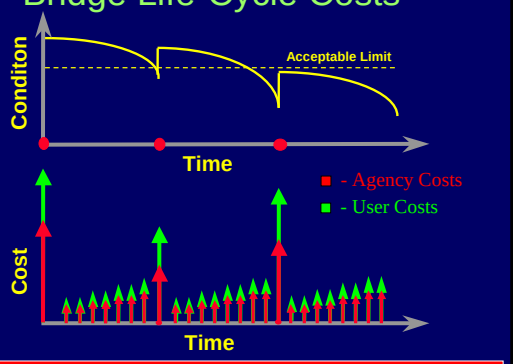
Bridge Chapter Outline

1. NBI data with nationwide summaries and where Texas stands (6/24/08)
2. Federal funding (6/24/08)
3. TxDOT data and report on needs (6/24/08)
4. TxDOT unit costs for rehab and replace (7/24/08)
5. Future needs framework (8/21/08)
6. Deterioration models and thresholds for rehab and replace (8/21/08)
7. Expansion factors and mobility needs
8. Results

Future needs framework

- User Costs Drive Expansion
  - Travel Time
  - Vehicle Operating Costs
  - Accidents
  - Environmental
- Agency Costs
  - Maintenance
  - Rehabilitation
  - Replacement
  - Expansion

Bridge Life-Cycle Costs



Thresholds for Rehab and Replace

(1) Bridge must be on the NBI database. Bridges that meet the following criteria are on the NBI database:

a. longer than 20 feet (item 49*) AND
b. highway bridge that carries a public road

(2) To be eligible for rehabilitation, bridge must have a Sufficiency Rating of 80 or less; To be eligible for replacement, bridge must have a Sufficiency Rating of less than 50.

(3) Bridge must be classified as either structurally deficient OR functionally obsolete.

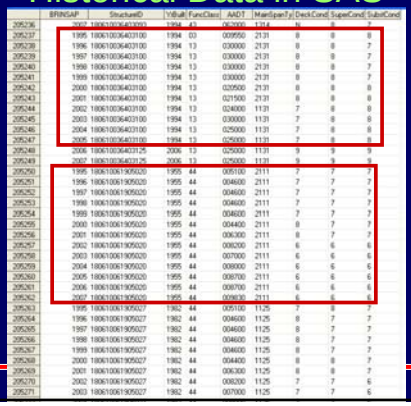
a. To be classified as structurally deficient, a bridge must have:
   i. Rating of 4* or less for:
      1. deck (item 58*) OR
      2. superstructure (item 59*) OR
      3. substructure (item 60*) OR
      4. culvert (item 62*) OR
   ii. Rating of 2* or less for:
      1. structural evaluation (item 67*) OR
      2. waterway adequacy (item 71*)

Structural

b. To be classified as functionally obsolete, a bri
   i. Rating of 3* or less for:
      1. deck geometry (item 68*) OR
      2. underclearance (item 69*) OR
      3. approach roadway alignment (item 72*) OR
   ii. Rating of 3* for:
      1. structural evaluation (item 67*) OR

Geometry

Historical Data in SAS



Deterioration Models

a. To be classified as structurally deficient, a bridge must have:
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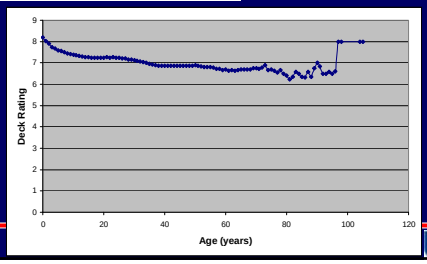
      3. substructure (item 60*) OR
      4. culvert (item 62*) OR
   ii. Rating of 2* or less for:
      1. structural evaluation (item 67*) OR
      2. waterway adequacy (item 71*)

Item 58 On-System



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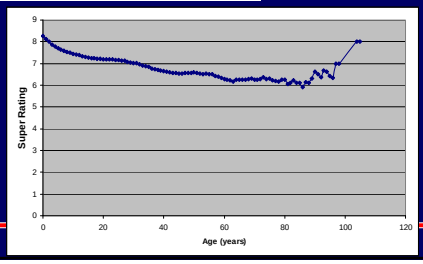
Item 59 On-System



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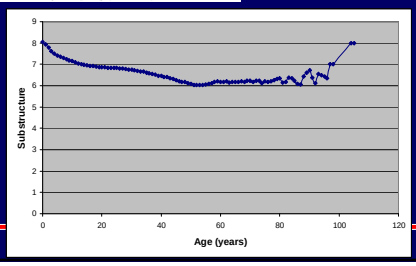
Item 60 On-System



Deterioration Models

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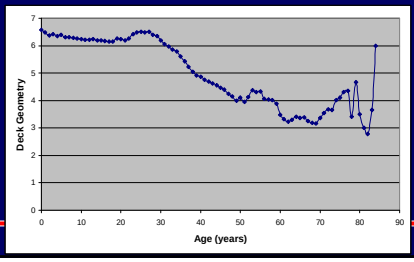
Item 68 On-System Urban



Deterioration Models

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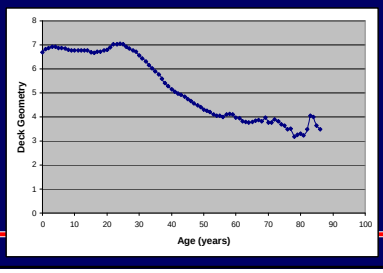
Item 68 On-System Rural



Future Developments

- Develop future needs for existing bridges
- Integrate with mobility analysis (expansion factors)