



# Western States & Oregon Preventive Maintenance Experience



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## Western States Summary

- Does your state have approval to use HBP funds for preventive maintenance?
- If not, has the state applied to use HBP funds for preventive maintenance

(9 of 13 states responded)



# No Approval, No Application

- Arizona
- Utah
- Wyoming
- Washington (Prior Approval, 2001)
  - Rehab/repair/overlay concrete decks
  - Paint steel bridges
  - Scour repairs





# No Approval, Did Application

- Alaska
- Oregon







# Approved Preventive Maintenance

- New Mexico
  - Approval in 2005, 2010 update
  - Everything from Major Rehabs-Minor Rehabs
  - Preventive Maintenance
    - Crack Sealing, Low Viscosity Sealers
    - Polymer Concrete Deck Overlays
    - Deck Joints



# Approved Preventive Maintenance

- Hawaii (January 2005)
  - Decks (sealing, overlays, cathodic protection)
  - Joints (eliminate, repair existing, new)
  - Bearings, approach slabs, beam ends
  - Scour, seismic, substructure repairs
  - Painting
- California (2009)



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# Program Review

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## **Oregon DOT Systematic Bridge Preventive Maintenance Program**

**October 2010**



# Bridge Preventive Maintenance (PM) Program

- Extend the life of the deck and other structural components
- Deck overlays provide a protective coating for the deck prolonging service life
- Keeps water from leaking onto structural elements below the deck and causing deterioration
- Repairing bridges before they become structurally deficient is cost effective
- Provide drivers with a smoother ride

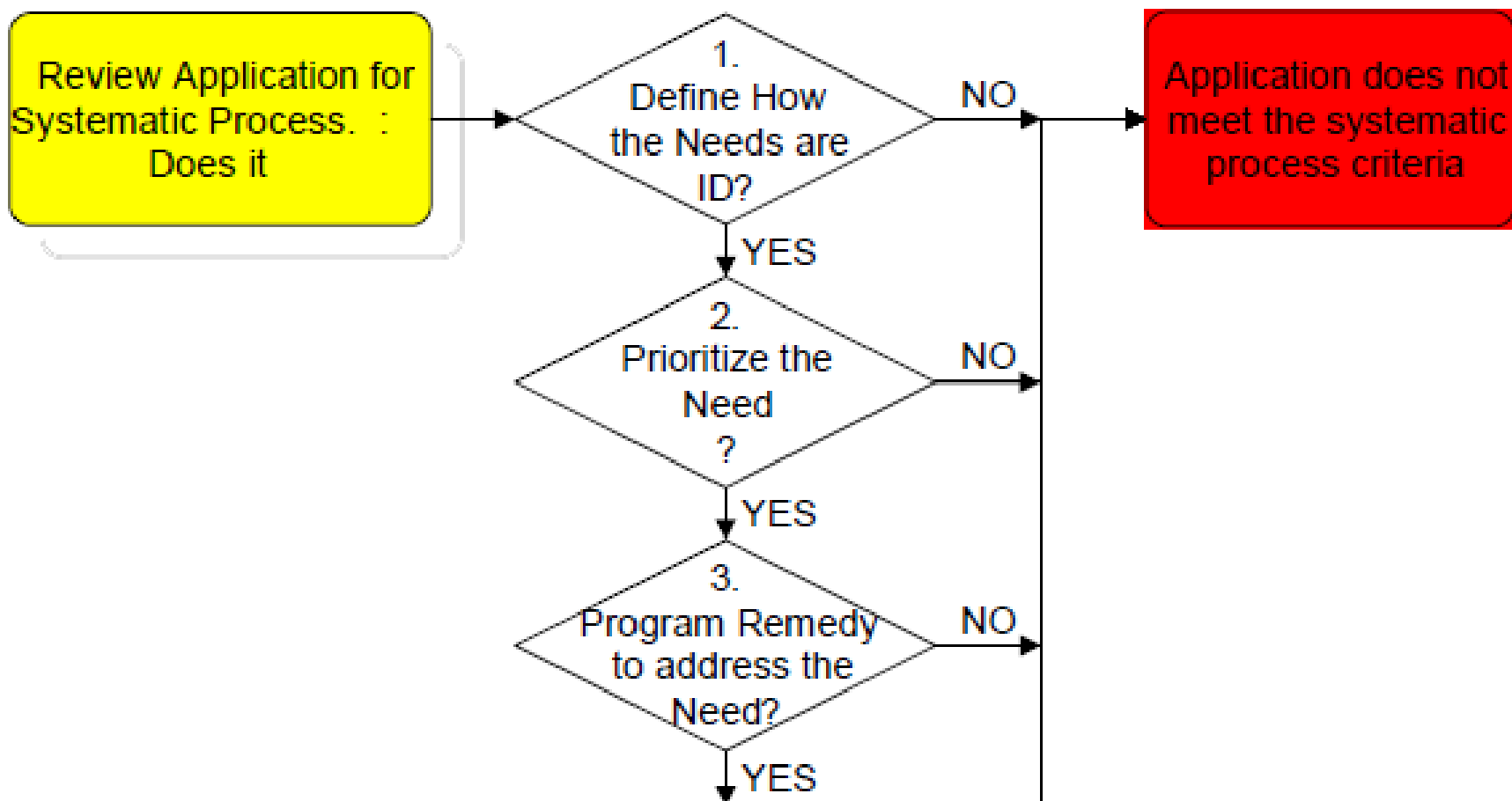
Alternative is:

- Significant costs to both the agency and stakeholders, including detour bridges and traffic control for deck replacement



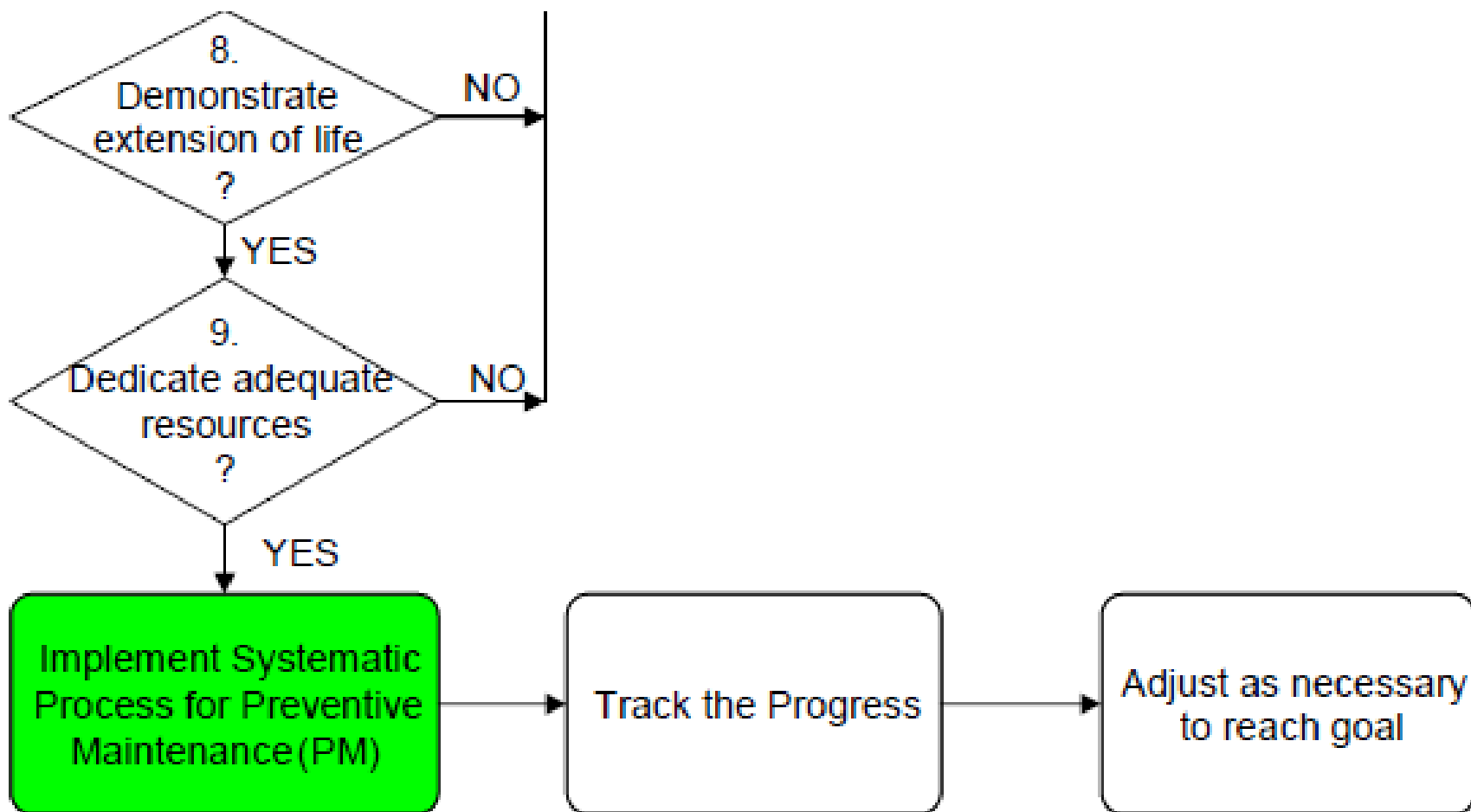


# Systematic Process





# Systematic Process





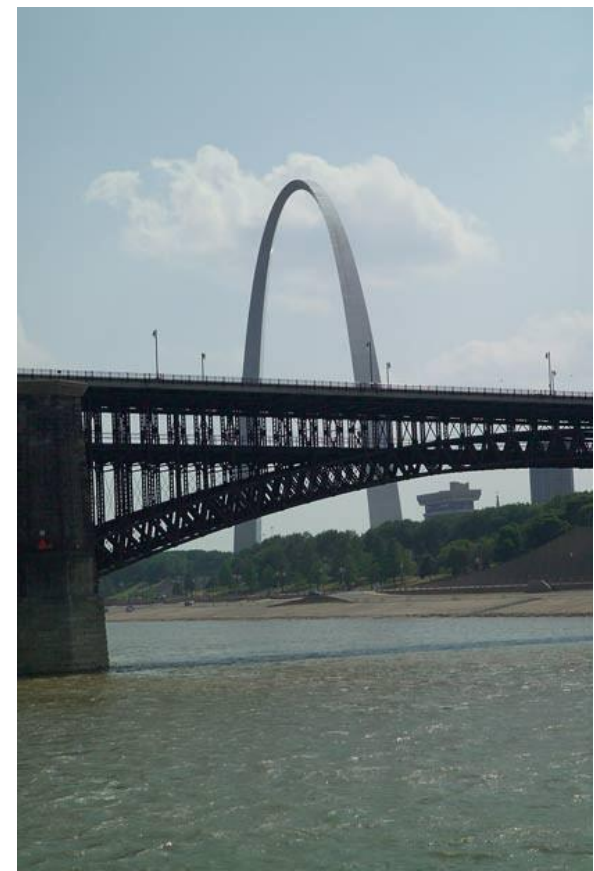
# Recommendations

- Recommendations given in all areas
- Oregon modified element definitions
- Current assessment to provide a baseline
- Establish a process for collecting and analyzing data to demonstrate extension of useful life



## Recent Positive Things

- Bridge Preservation Handbook
- St Louis, November 2011
- Partnership Meetings
- Webinar's





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# Program Review

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## Oregon DOT Systematic Bridge Preventive Maintenance Program

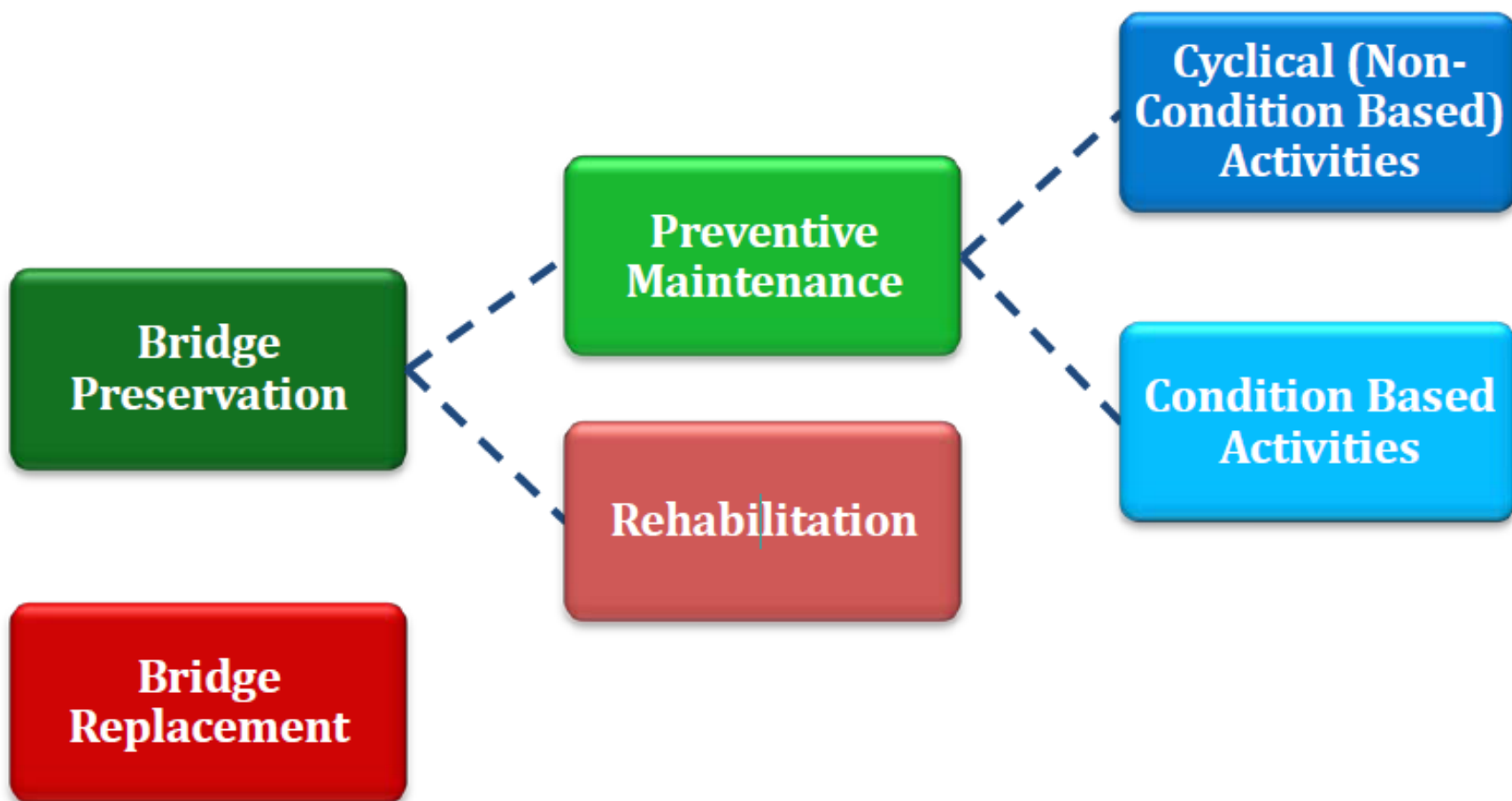
October 2010

A Second Look





# Bridge Preventive Maintenance (PM) Program





# Cyclical Preventive Maintenance

## Cyclical Preventive Maintenance Activities – Definition

Activities performed on a pre-determined interval and aimed to preserve existing bridge element or component conditions. Bridge element or component conditions are not always directly improved as a result of these activities, but deterioration is expected to be delayed.



# Bridge Preservation Guide

Cyclical PM Activity Examples	Commonly Used Frequencies (Years) <sup>4</sup>
Wash/clean bridge decks or entire bridge	1 to 2
Install deck overlay on concrete decks such as: <ul style="list-style-type: none"><li>- Thin bonded polymer system overlays</li><li>- Asphalt overlays with waterproof membrane</li><li>- Rigid overlays such as silica fume and latex modified</li></ul>	10 to 15 10 to 15 20 to 25
Seal concrete decks with waterproofing penetrating sealant	3 to 5
Zone coat steel beam/girder ends	10 to 15
Lubricate bearing devices	2 to 4

Table 1: Examples of Cyclical PM Activities



# The Path Forward for Oregon (1)

- Transition to new elements (NBE, BME)
- Focus on Non-Condition based activities
- Begin with Deck Sealing
  - New and Current Elements
  - Use Bridge Preservation Guide
  - Use information from other states
- If Deck Sealing is approved, focus on another activity or several activities



## The Path Forward for Oregon (2)

- Revisit October 2010 Results
- Perhaps 0 for 9 was misperception
- Determine if there is a showstopper
  - Baseline For NBE and BME?
  - Demonstrate extension of useful life
- Choose Path (1) or Path (2)





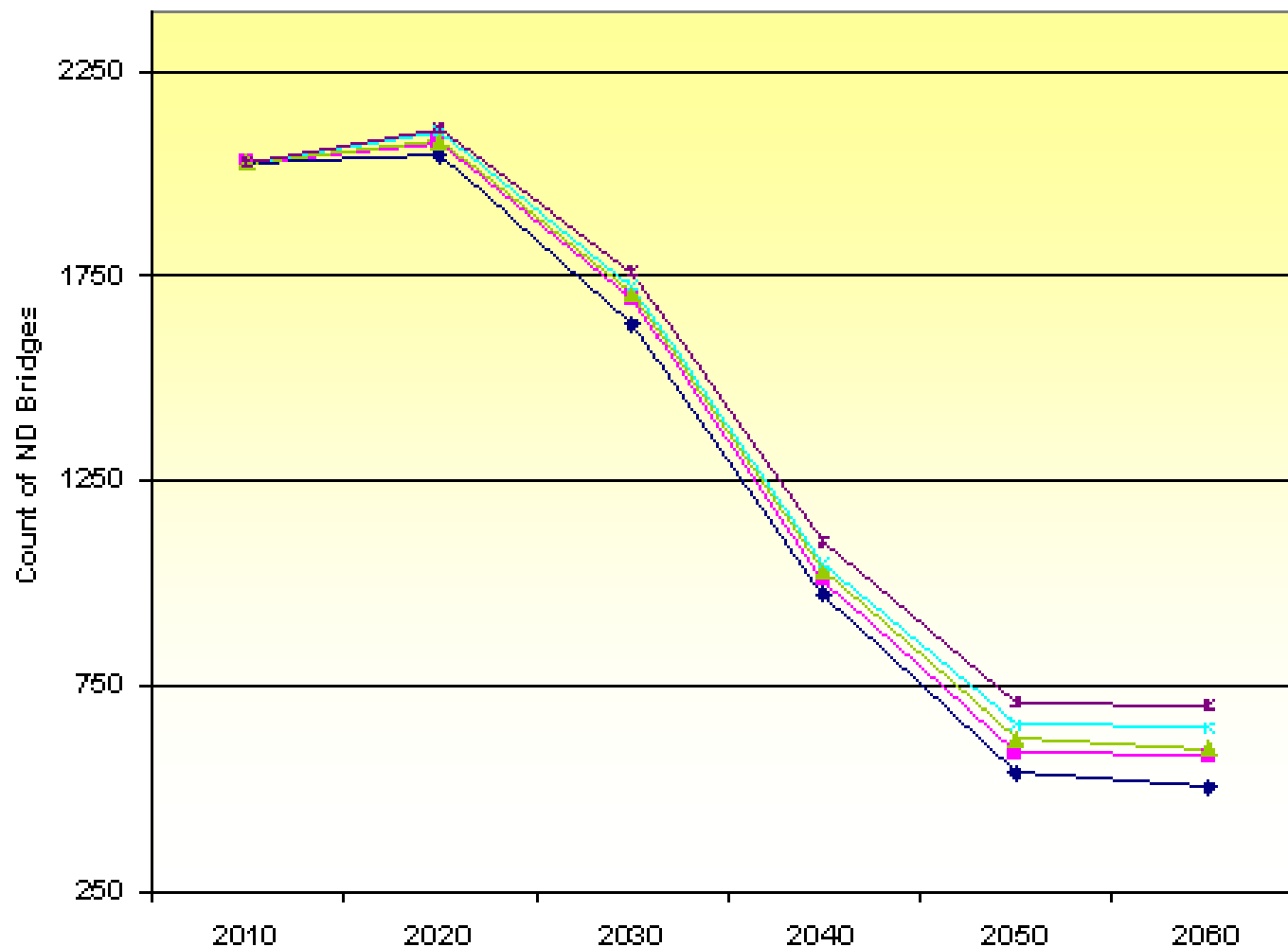
# Distressed Bridge Criteria

- Structurally Deficient
  - Poor condition of a primary component
- Ten other criteria
  - Paint
  - Rail
  - Scour
  - Geometry
  - Timber
  - Cathodic Protection
  - Load Capacity
  - Moveable
  - Sufficiency Rating
  - Vertical Clearance





# Non-Deficient Bridge Forecast





# Questions?

