May 2015

Culvert Performance Measurement

Asset Type: Culverts

Scope of Data Included in Performance Measure

The scope of culvert performance measurement will be to include all culverts within the State Highway System (SHS). The summary reporting can be broken down by districts, route and post mile with total for the inventory and each condition category.

Data Update Frequency

The culvert condition data is updated on an ongoing basis. With an estimated total count of over 205,000 culverts within the SHS, it is estimated that the entire statewide inspection will be completed in about 8 years. Approximately 12000 culverts within the SHS are inspected each year.

Summary of Performance Measure

The culvert condition is captured by the count and is classified into categories of Good, Fair and Poor.

Performance Measure Calculation Detail

The calculation method for determining Good, Fair or Poor condition culverts is based on the following procedure. Total Culvert Assessment Scores are calculated utilizing Culvert Elemental Inspection Assessment Scores. Culvert Elemental Inspection Assessment Scores are inspections of five different culvert elements and assigning a score based on its observed condition. During a culvert inspection the inspector makes an assessment on the culvert's condition by evaluating five culvert attributes:

1. Waterway Adequacy
2. Joints
3. Materials
4. Shape, and
5. Alignment

Each attribute is given an assessment grade based on its observed condition. The assessment grade reflects what type of maintenance is needed based on the condition of the assessed attribute. The assessment grades are used to assign a Health Index Number (HI) to each culvert. The HI number is from 0 to 100. Lower Health Index Numbers represent worsening condition and more critical maintenance needs.

A. Like New Condition
B. No Attention Needed (Good)
C. Needing Maintenance Preventative in Nature (Fair)
D. Needing Maintenance Major Rehabilitation/Replacement (poor)
E. Needing Immediate Attention