2010
BRIDGE INDEX

SUMMARY OF BRIDGE CONDITIONS
THURSTON COUNTY, WASHINGTON

THURSTON COUNTY
WASHINGTON
SINCE 1852

THURSTON COUNTY PUBLIC WORKS
CONSTRUCTION / ENGINEERING SUPPORT SECTION

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I. INTRODUCTION

As required by WAC 136-20-060 each County Engineer in Washington State must submit a written résumé of findings to the legislative body concerning the county's bridge inspection effort by June 1 of each year. In the past, we have included a large variety of information in the annual update of the Bridge Index. We are pleased to submit this summary intended to be the résumé for 2010 as required by the WAC.

Before adoption of the annual budget, the Board of County Commissioners is required to adopt a Six-Year Plan for Transportation Improvements. WAC 136-20-060 also requires that the resolution adopting the Six-Year Plan state that this Engineer's summary with respect to deficient bridges was available to the Board during preparation of the Plan.

Each bridge on the county road system is required by the CRAB Standards of Good Practice to be inspected at no less than the following frequency:

Inspection in depth ……5 years
Intermediate inspections …… 2 years

Additionally, the policy of the department has been to inspect and rate each bridge at a minimum frequency between inspections of two years, with certain bridges being inspected more frequently. The more frequent inspection and evaluation schedule is established on aging bridges or those felt to be in need of more frequent review due to their history or environmental exposure. This program has served the citizens of Thurston County well because maintenance needs have been identified sufficiently early so that costs of repair have remained relatively economical. Also, a more timely inspection program is felt to be one major reason that our bridges in need of replacement have been identified as early candidates for the bridge replacement program.

This report summarizes the county's 2009-2010 bridge program. This program forms an integrated and comprehensive strategy to maintain and preserve the county's bridges and the continuity of the road network. The three main goals of the bridge program are:

1. Keep the bridges open and safe for public use.
2. Preserve bridge infrastructure by having a formal bridge report file containing the history of inspections and an evaluation of the condition of the structure. The summary of bridge data maximizing its useful life through active maintenance, and rehabilitation.
3. Replace bridges with reliable new structures when repair and rehabilitation is not feasible.

The attached Bridge Index for 2010 contains additional information concerning the county's bridge system including a summary of those bridges scheduled to be reconstructed or retrofitted in 2010 or 2011. Each bridge listed has also been submitted to the State Department of Transportation for the State of Washington Inventory of Bridge Systems.

We will be pleased to present additional information about the county's bridges if desired.

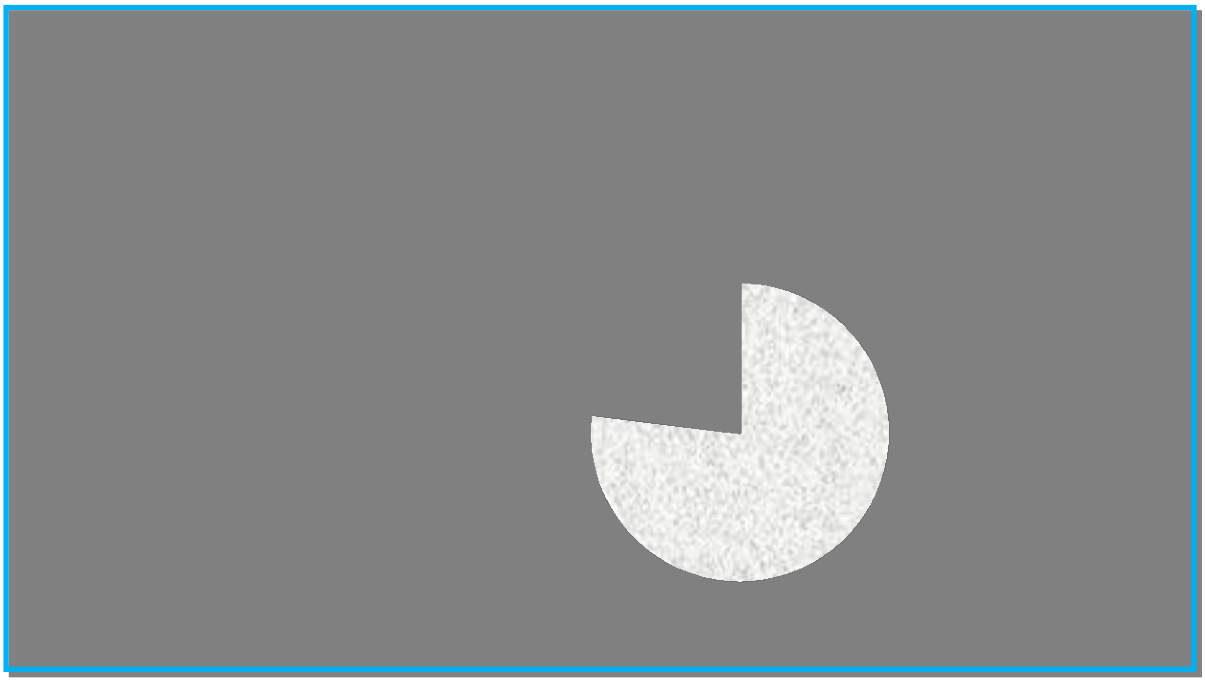
II. BRIDGE INVENTORY

Thurston County Public Works inspects and inventories **115 roadway bridges** located within Thurston County. Of these bridges:

- 106 bridges are wholly owned by Thurston County.
- Five bridges are owned by Railroads.
- Two are owned by the City of Yelm.
- One bridge is owned by the City of Tenino.
- One bridge is owned by the Chehalis Indian Tribe.

Classified by substructures the bridges inspected by Thurston County are categorized as follows:

- 90 Concrete Bridges
- 10 Steel Bridges
- 2 Concrete Bridges (Railroad)
- 1 Steel Bridge (Railroad)
- 3 Timber Bridges
- 1 Timber Bridge (Railroad)
- 2 Timber Composite Bridges
- 6 Culverts (Steel – classified as bridges)



III. BRIDGE INSPECTIONS AND FINDINGS

A. Routine Bridge Inspections

The National Bridge Inspection Standards (NBIS) mandates that public agencies inspect and report on all bridges at least once every two years. Under these standards, the county is required to document and report the current condition of each bridge, determine the degree of wear and deterioration, and recommend repairs or required service.

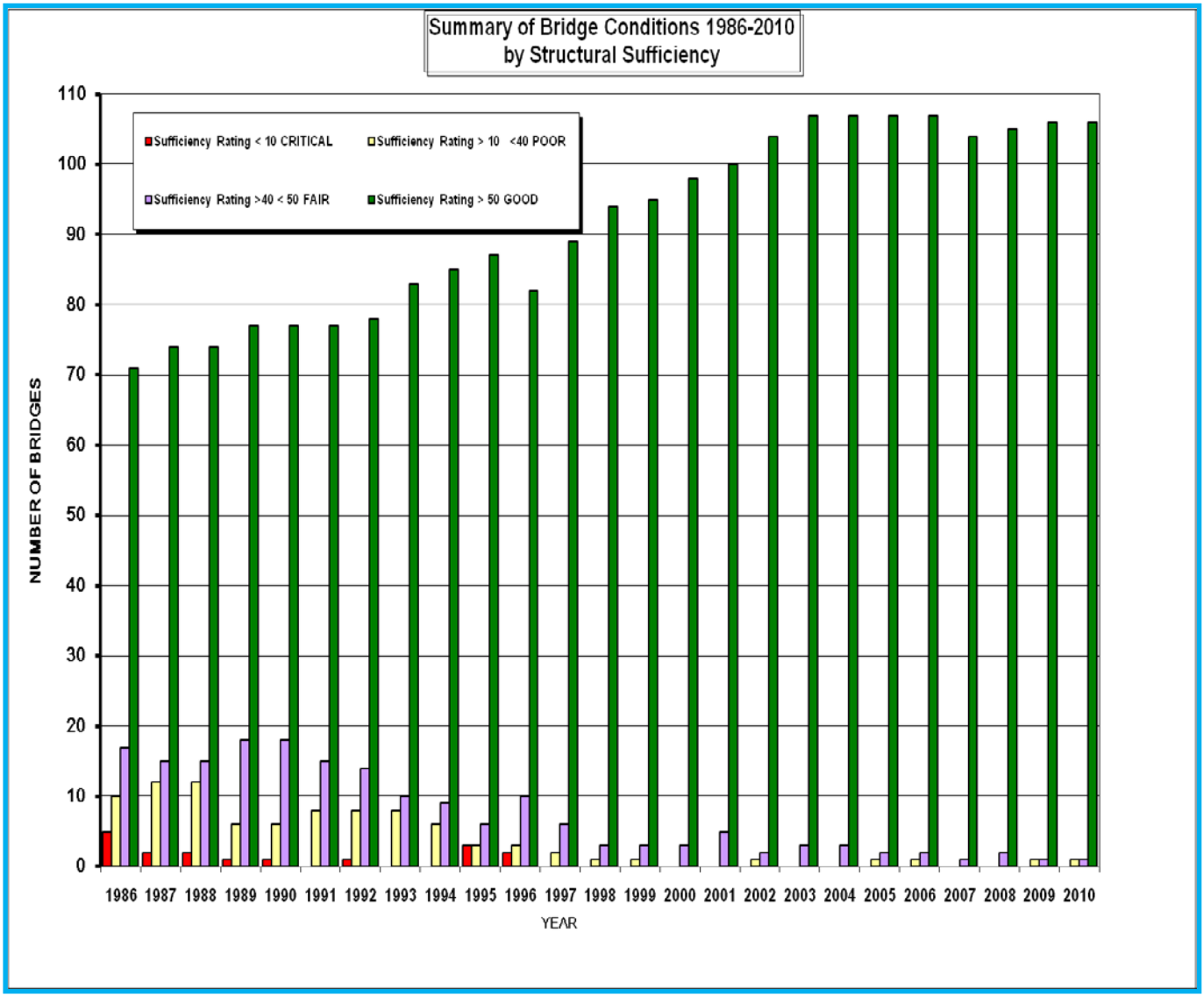
A total of 56 routine bridge inspections were conducted in 2009. During these bridge inspections inspectors make an in-depth evaluation of the condition of the bridge structure and document any observable defects. In addition bridge maintenance crews observe, report, and suggest repairs to all bridges.

Several times a year, updated inspection results are forwarded to the Washington State Department of Transportation (WSDOT) Highway and Local Programs Division which in turn verifies compliance with the NBIS and reports to the Federal Highway Administration (FHWA).

B. Inspection Findings - Repairs

Every year, new bridge deficiencies are found during routine inspections, and work items are identified and sent to the bridge maintenance crew. Some work items are urgent and are repaired quickly, while others are prioritized lower as longer term maintenance items that will help preserve the service life of the bridge. Bridge maintenance crews concentrate on repairs that will help preserve the service life of the inventory, with an emphasis on safety.

Another measure that provides an overview of the condition of the inventory is a rating factor known as the Sufficiency Rating (SR). The SR of the entire inventory provides a comparative look at the health of the inventory from one year to next. The SR is a score calculated for each bridge based on a multitude of ratings the inspector assigns to the bridge based on the condition of the various components of the bridge. The geometric layout, safety, and importance of the bridge to the traveling public is also factored into the SR. The SR ranges from zero (a bridge that is closed and cannot carry traffic loads) to 100 (a new bridge with no deficiencies).



IV. FUTURE PLANS

2010 Bridge Project Status

The bridge project status list is intended to be flexible, since all phases of a given project's progress may or may not be completed in **2010 or 2011.** This list is primarily an abbreviated project status report.

The following bridge projects are in the Design, Environmental, or Construction phase of project development.

OLD HIGHWAY 99 BRIDGE O-6

This bridge is located on Old Highway 99 and spans Prairie Creek within the Grand Mound Urban Growth Boundary. Rapid commercial development in Grand Mound including the recent opening of the Great Wolf Lodge will dramatically increase the traffic on this structure.

Built in 1923 the 45' long bridge has a Structure Sufficiency Rating of 61.96 which is considered "good". However the bridge width of only 24' does not meet the urban design standards necessary to accommodate future traffic and multi-modal needs, making the bridge "functionally obsolete".

The proposed project will replace the existing concrete bridge with sidewalks to meet urban design standards. The bridge will also be longer to provide for enhanced fish passage.

The estimated project cost of $2,060,000 will be funded with $600,000 - Real Estate Excise Tax, $1,050,000 - Federal Stimulus Money and the remaining $410,000 - County Dollars.

New Construction

The following bridge projects were completed in the first few months of 2010.

MARTIN WAY BRIDGING THE GAP

This project consisted of constructing a three span pre-stressed concrete girder pedestrian bridge over Martin Way. It provides an overpass on the Chehalis Western Trail that removes grade conflicts with pedestrians/ bicycles and vehicles.

The bridge is 180 feet long and 14 feet wide, with fences for safety. The foundation is a spread footing system.

This bridge is the second of a three phase plan on the Chehalis Western Trail to span Martin Way, I-5 and Pacific Avenue. Construction started August 3, 2009 and was completed March 2010.

The project had an estimated cost of $2,060,000, with Federal grant funding to pay for the majority of the expense.

Independence Road Bridge No. I-3

The Independence Road Bridge, an old timber bridge, has been replaced with a five pre-stressed girder bridge spanning 100 feet. Located on Independence Road this bridge was replaced as part of a FEMA Pre-Disaster Mitigation project.

The new bridge will alleviate flood damage for this section of Independence Road by enlarging an aging, undersized bridge, raising the approach road on either end decreasing flooding and stabilizing the eroding bank through bioengineering. It will function as an integrated piece of the larger transportation corridor for South Thurston County by elevating the existing road near the bridge and enlarging a 55-year old timber bridge with a concrete structure about five times as long.

Enlarging the bridge, elevating the roadway and stabilizing the bank will protect the road from washing out or becoming impassable due to frequent flooding.

This $2,000,000 project will serve as a demonstration project to show ways existing infrastructure can be retrofitted to avoid hazard damage. $1.1 million of the project cost will be covered by the FEMA grant.