

# CLARK COUNTY STAFF REPORT

**DEPARTMENT:** Public Works / Engineering and Construction Division

**DATE:** June 28, 2016

**REQUESTED ACTION:** Accept and Approve the 2015 Annual Bridge Report

\_\_X\_\_ Consent    \_\_\_ Hearing    \_\_\_ County Manager

**PUBLIC WORKS GOALS:**

- Provide safe and efficient transportation systems in Clark County
- Create and maintain a vibrant system of parks, trails and green spaces
- Continue responsible stewardship of public funds
- Promote family-wage job creation and economic development to support a thriving community
- Maintain a healthy, desirable quality of life
- Increase partnerships and foster an engaged, informed community
- Cultivate a nimble, responsive work force
- Make Public Works a great place to work

**BACKGROUND**

Attached is the Annual Bridge Report for 2015, as required by Washington Administrative Code 136-20-060. The report summarizes the condition of 110 bridges within the County, including bridges owned by the Cities of Battle Ground, Camas, Washougal, La Center and Vancouver. Of the 110 Bridges, 76 are in good condition, 25 are in fair condition and zero are in poor condition. The remaining 9 bridges are either railroad or pedestrian bridges which are only inspected with respect to roadway and pedestrian safety.

**COUNCIL POLICY IMPLICATIONS**

None

**ADMINISTRATIVE POLICY IMPLICATIONS**

None

**COMMUNITY OUTREACH**

None

**BUDGET IMPLICATIONS**

YES	NO	
X		Action falls within existing budget capacity.
	X	Action falls within existing budget capacity but requires a change of purpose within existing appropriation
	X	Additional budget capacity is necessary and will be requested at the next supplemental. If YES, please complete the budget impact statement. If YES, this action will be referred to the county council with a recommendation from the county manager.

*Oil*

PW16-074

**BUDGET DETAILS**

Local Fund Dollar Amount	
Grant Fund Dollar Amount	
Account	
Company Name	

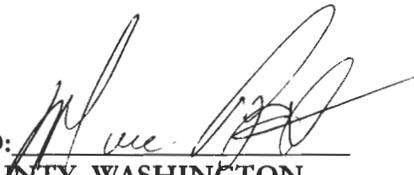
**DISTRIBUTION:**

Board staff will post all staff reports to The Grid. <http://www.clark.wa.gov/thegrid/>

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Tom Grange P.E.  
Engineering and Construction Division Manager

  
FOR Heath H. Henderson, PE  
Public Works Director/County Engineer

  
**APPROVED:**  
**CLARK COUNTY, WASHINGTON**  
**BOARD OF COUNTY COUNCILORS**

DATE: June 28, 2016

SR# 135-16

**APPROVED:** \_\_\_\_\_  
Mark McCauley, County Manager

DATE: \_\_\_\_\_

PW 16-074

# 2015 Annual Bridge Report



Heisson Bridge No. 100

Prepared by David Dolan, P.E.  
Clark County Public Works Engineering and Construction Division  
Submitted June 2016



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## I. INTRODUCTION

This bridge report is prepared by the Clark County Public Works Department each year to fulfill the requirements of the Washington Administrative Code (WAC) 136-20-060. The WAC requires the County Engineer's report of bridge inspections as follows:

*Each county engineer shall furnish the county legislative authority with a written resume of the findings of the bridge inspection effort. This resume shall be made available to said authority and shall be consulted during the preparation of the proposed six-year transportation program revision. The resume shall include the county engineer's recommendations as to replacement, repair or load restriction for each deficient bridge. The resolution of adoption of the six-year transportation program shall include assurances to the effect that the county engineer's report with respect to deficient bridges was available to said authority during the preparation of the program.*

The bridge inspections follow the National Bridge Inspection Standards (NBIS) which are published in the Code of Federal Regulations, 23 CFR 650, subpart C. The NBIS sets the national standards for the proper safety inspection and evaluation of bridges and apply to all structures defined as highway bridges located on public roads. The County uses the Washington State Bridge Inspection Manual which details Washington State's policies and procedures for the condition and inspection of bridges.

This report summarizes the county's 2015 bridge programs, activities and findings. These programs help to prioritize the efforts for maintaining and preserving the county's bridges and identifying complete bridge replacements before they significantly impact the county's transportation network.

## II. BRIDGE INVENTORY

The county inspects and inventories 110 bridges located throughout Clark County. Of these bridges:

- 77 bridges are owned by Clark County (3 of which are pedestrian bridges).
- 27 bridges are owned by cities and inspected under interagency agreements.
- 6 bridges are owned by the railroad (BNSF, CCRR) and inspected with respect to roadway safety.

Bridges are identified throughout this report by the bridge name followed by the bridge number, e.g., **Betts Bridge No. 26**. A complete bridge inventory spreadsheet is included in Table A in the Appendix. As referenced above, 27 bridges are wholly owned by the cities of Vancouver, Camas, Washougal, Ridgefield, Battle Ground and La Center and 6 are owned by BNSF Railroad or CCRR and are inspected with respect to roadway safety of the streets that pass under them. The following map, Clark County Bridge Locations Figure 1, illustrates the distribution of county-owned and city owned bridges throughout the county, in each commissioner's district.

**2016 Annual Bridge Report**  
 BridgeLocations with County Councilor Districts  
 Clark County, Washington

**Councilor District**

- 1 - Jeanne E. Stewart
- 2 - Julie Olson
- 3- David Madore
- 4 - Tom Mielke

- County Bridge
- City Bridge

1:300,000

0 0.75 1.5 3 4.5 6 Miles



**CLARK COUNTY**  
 WASHINGTON

*proud past, promising future*

**Geographic Information System**

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

Printed On: May 18, 2016  
 Project: G:\Projects\comSrvs\Pub\WMA\200509\Bridges\Bridges.mxd (k.wendish)

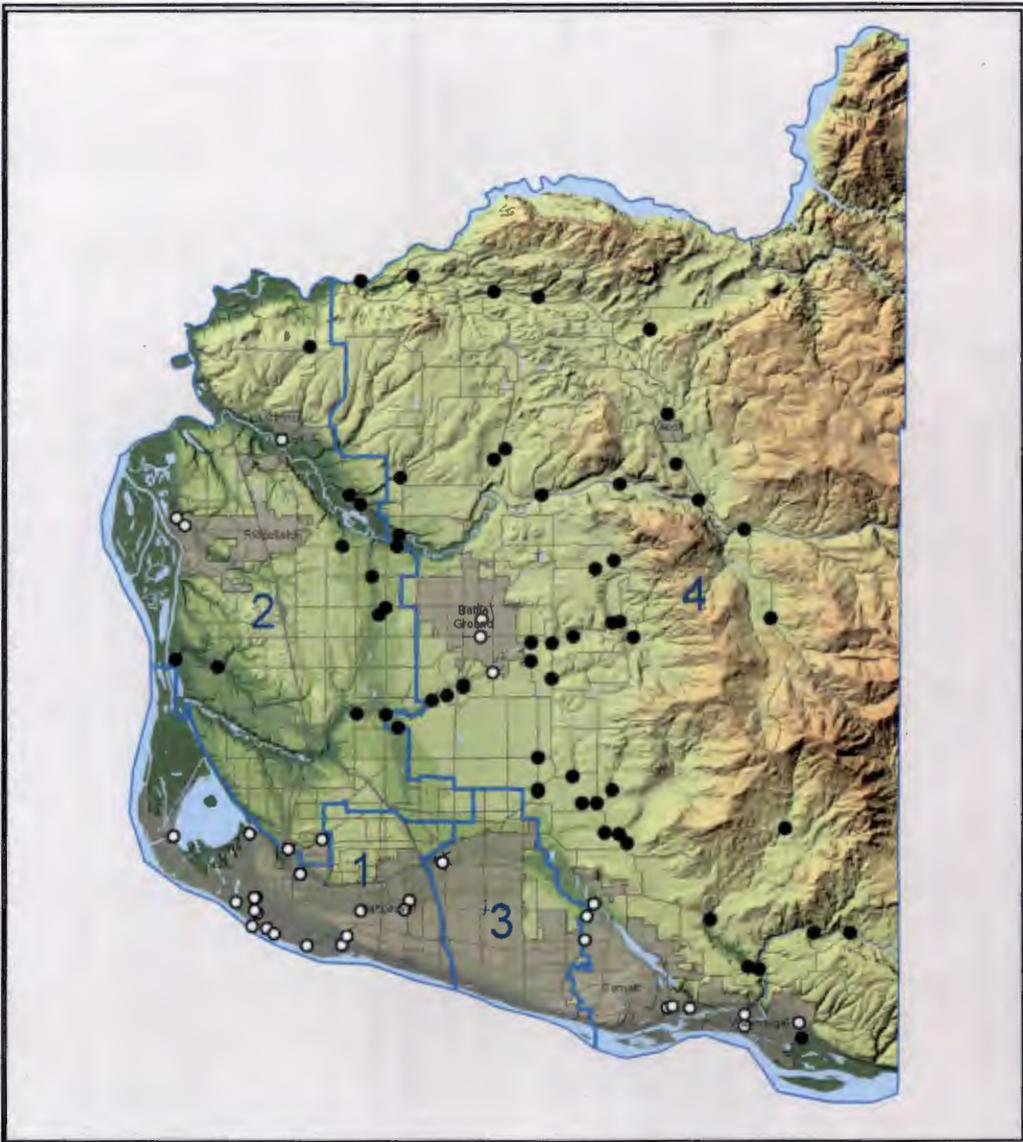


Figure 1 Clark County Bridge Locations Map

### III. BRIDGE INSPECTION FINDINGS AND REPAIRS

#### A. Bridge Inspection Findings

The National Bridge Inspection Standards (NBIS) mandate 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 or deterioration, and recommend repairs or needed services. Bridges deficient in their conditions, such as load restricted bridges, may require more frequent inspections.

A total of 56 routine bridge inspections were conducted in late 2015 and early 2016. During these bridge inspections, our inspectors made an in-depth evaluation of the condition of the bridge structure and documented any observable deficiencies. When deficiencies were revealed they were noted in the report and a deficiency report was generated and provided to the operation and maintenance section for follow up. Any urgent structural or safety concerns are addressed promptly. No significant findings resulted from this year's bridge inspections.



Debris removal at Daybreak Bridge, December 2015.

In addition to routine bridge inspection, several significant storm events brought high flow levels in streams and creeks and required scour specific inspection. A total of 11 of the County's bridges are considered scour critical and can require special inspection after the events for erosion, debris and instability of stream banks.

As the bridge inspection reports were generated and reviewed, these reports were entered into *Bridge Works*, a bridge management application developed by the WSDOT Bridge Preservation office. This system acts as a master inventory of all structures that are the responsibility of WSDOT. They in turn verify compliance with the NBIS standards and report the information to Federal Highway Administration (FHWA).

One measure that provides an overview of the condition of the inventory is a rating factor known as the Sufficiency Rating (SR). The SR is a numeric value which indicates a bridge's relative ability to serve its intended purpose. The sufficiency rating is the summation of four calculated values: Structural Adequacy and Safety, Serviceability and Functional Obsolescence, Essentiality for Public Use and Special Reductions. The SR is a score calculated for each bridge using the ratings that the inspector assigns to individual features of the bridge. Geometric layout, traffic volume, and the length of the detour route are also used in calculating 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). The average SR of the entire inventory provides a comparative look at the health of the inventory from one year to the next.



Bridge demolition Fifth Plain Creek.

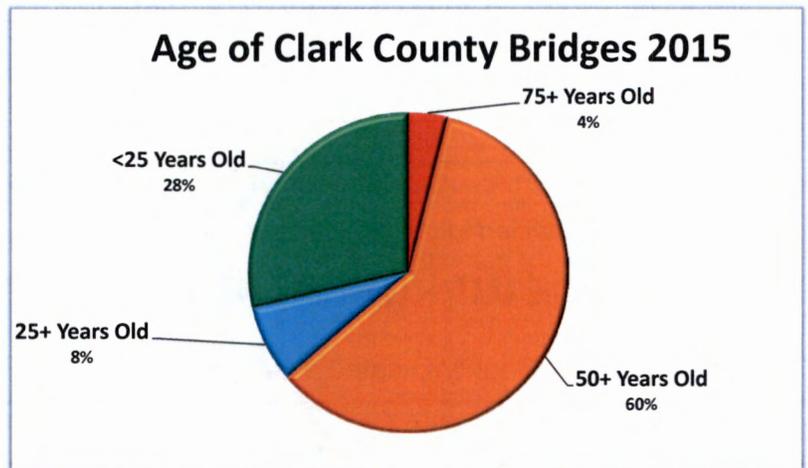
Overall, the SR for the county inventory of bridges shows a positive trend line with minor fluctuations from year to year. Due to the overall number of bridges in the inventory and the fact that the inventory continues to age, it is a significant accomplishment that we are able to maintain a positive trend in the SR. With only two new bridges anticipated with the six year plan, the upward trend will be adversely affected.

Generally speaking, bridges with a SR greater than 50 have a fair amount of useful life remaining. Bridges with a SR less than 50 require more attention and may need major repairs or complete replacement. The Bridge Replacement Advisory Committee (BRAC) is only screening bridges with a SR of 30 or less for replacement eligibility and a SR of 50 or less for rehabilitation eligibility. It is important to note that while the SR for the overall inventory is 75.67, there are a number of individual bridges with SR below 50. There is a direct correlation between the SR and the age of the bridge and we can expect the average SR rating to begin to decline if bridge maintenance and repairs needs are not addressed. Figure 1 illustrates the age of the bridge in the inventory. In addition to using the SR as a measure of the condition of a bridge, the NBIS defines two types of deficient

bridges – **structurally deficient (SD)** and **functionally obsolete (FO)**.

A **structurally deficient (SD) bridge** as defined by the FHWA, is one whose condition or design has impacted its ability to carry its intended traffic loads. Examples include bridges that have significant load carry elements that are found to be in poor condition due to deterioration or damage and/or the inadequacy of waterway opening provided by the bridge which causes flooding over the bridge deck or adjacent roadway causing significant traffic interruptions. The fact that a bridge is “structurally deficient” does not mean or imply that the bridge is unsafe or is likely to collapse. It does however indicate that when left open to traffic, it typically requires significant maintenance and repair to remain in service and ultimately will require replacement or major rehabilitation to address the deficiencies. With the completion of Fifth Plain Bridge replacement in 2015, Clark County no longer has any structurally deficient bridges in its inventory.

A **functionally obsolete (FO) bridge** is one in which the deck geometry, load carrying capacity, clearance, or approach roadway alignment has reduced its ability to adequately meet the traffic needs below accepted design standards. While structural deficiencies are generally the result of deterioration of bridge components, functional obsolescence typically results from older bridge designs that are subject to increased traffic demands and are substandard structures as defined by the current bridge design codes. Examples include narrow lane/shoulder widths and height restrictions of less than 14 feet. Clark County Bridge inventory has 16 bridges that are listed as Functionally Obsolete (FO) while, the City of Camas has 3, the City of Vancouver has 3 and the Cities of Ridgefield, Battle Ground and Washougal each have a single bridge listed as functionally obsolete.



**Figure 1**

**Table 1: Functionally Obsolete & Structurally Deficient Bridges**

Agency	Number of Bridges	Functionality Obsolete (FO)	Structurally Deficient (SD)
Clark County	74	16	0
City of Vancouver	13	3	0
City of Camas	6	3	0
City of Washougal	3	1	0
City of Ridgefield	2	1	0
City of Battle Ground	2	1	0
City of La Center	1	0	0
Railroad (BNSF-5, CCRR-1)	6	N/A	N/A
Pedestrian Bridge (CC)	3	N/A	N/A

#### IV. RESTRICTED BRIDGES

If a bridge deficiency is severe and repairs cannot restore full load capability to a bridge, load restriction signs for trucks are erected at each end of the bridge and heavy loads are restricted from the bridge. Currently Clark County has two load-limited bridges in their inventory and one Height restricted bridge.

**Table 2: Height and Load Limited Bridges in Clark County**

Bridge Name	Bridge No.	Action
Cedar Creek* (County)	65	Weight Restricted
Kepfer (County)	102	Weight Restricted
CCRR U/C - Old 99 (County)	20141	Height Restricted

*\*Scheduled to be replaced summer 2016*

## V. BRIDGE IMPROVEMENT PROGRAM (BIP)

In 2008 Clark County initiated a Bridge Improvement Program to develop a process for establishing a bridge priority system to assess bridge needs and provide a consistent ranking and scoring system for bridges needing repair, rehabilitation, or replacement. The goals and objectives of the program are:

- Review and analyze deficiencies for all bridges and prepare cost estimates for repair, rehabilitation, or replacement.
- Develop a bridge matrix to score and rank bridges for priority funding.
- Catalog the potential environmental permits required to repair deficiencies.
- Develop a database containing all bridge information that is easily expandable, calculates deficiency costs, and scores and ranks bridge improvements.
- Use the BIP to pursue funding through state and federal programs. (Bridges are funded differently than road projects by state and federal programs.)

The BIP incorporates previously completed scour and seismic vulnerability programs.

## VI. BRIDGE CONSTRUCTION/ACCOMPLISHMENTS IN 2015

Two bridge projects were completed in 2015, the replacement of the Fifth Plain Creek Bridge No. 230, and the Curtin Creek Culvert No. 343 which was installed as part of the 119th Street road project. The County also upgraded bridge rail components on four bridges to bring them up to current standards as part of the 2015 Overlay Preservation Project.



Deck replacement Fifth Plain Creek Bridge (2015).

## VII. FUTURE PLANS

It is anticipated that the remaining two 2012 BRAC funded projects will be constructed in the summer of 2016, Brush Prairie Creek No. 201 Seismic Retrofit and Scour Mitigation Projects. Additionally, Cedar Creek Bridge No. 65 replacement and the Carty Road steel arched culvert are scheduled to be constructed in 2016. We will also be upgrading bridge rail components on two bridges as part of the 2016 Overlay Preservation project.

Design continues on the 10th Avenue Bridge which is scheduled for construction in 2017.

Other goals include:

- Expansion of our partnerships with local cities and neighboring counties to provide bridge inspection services.
- Continuing to support other Clark County departments/sections – Parks and Railroad – with their bridge needs. Facilitate the monitoring and assessment of their bridges and offering engineering support services as needed.
- Coordinating bridge barrier railing upgrades with requirements for guardrail improvements necessary through the annual County roads overlay program.
- Ongoing support and review of private bridge designs.
- Enhancing emergency response preparedness. Plans and practice exercises are to be developed. Participation in the regional 2016 Cascadia Rising exercise.



Inspection of Cedar Creek Bridge (scheduled for replacement summer 2016).

## GLOSSARY OF BRIDGE TERMINOLOGY

**Abutment:** a substructure supporting the end of a single span, or the extreme end of a multispan superstructure and, in general, retaining or supporting the approach fill.

**Backwall:** the top-most portion of an abutment functioning primarily as a retaining wall to contain approach roadway fill.

**Bent:** a supporting unit of the beams of a span made up of one or more column or column-like members connected at their top-most ends by a cap, strut, or other horizontal member.

**BRAC:** Bridge Replacement Advisory Committee

**Bracing:** a system of tension or compression members or a combination of these, connected to the parts to be supported or strengthened by a truss or frame. It transfers wind, dynamic, impact, and vibratory stresses to the substructure and gives rigidity throughout the complete assemblage. Can also refer to diagonal members that tie two or more columns of a bent together.

**Cap:** the horizontally-oriented, top-most piece or member of a bent serving to distribute the beam loads upon the columns and to hold the beams in their proper relative positions.

**Chord:** in a truss, the upper-most and the lower-most longitudinal members, extending the full length of the truss.

**Compression:** a type of stress involving pressing together; tends to shorten a member; opposite of tension.

**Deck:** portion of a bridge that provides direct support for vehicular and pedestrian traffic.

**Elastomeric pads:** rectangular pads made of neoprene, found between the sub- and superstructure that bears the entire weight of the superstructure. Elastomeric pads can deform to allow for thermal movements of the superstructure.

**Endwall:** the wall located directly under each end of a bridge that holds back approach roadway fill. The endwall is part of the abutment.

**Fracture critical member:** a member in tension or with a tension element whose failure would probably cause a portion of or the entire bridge to collapse.

**Pier:** a structure comprised of stone, concrete, brick, steel, or wood that supports the ends of the spans of a multispan superstructure at an intermediate location between abutments. A pier is usually a solid structure as opposed to a bent, which is usually made up of columns.

**Pile:** a rod or shaft-like linear member of timber, steel, concrete, or composite materials driven into the earth to carry structure loads into the soil.

**Pinpile:** a series of two-inch-diameter pipes driven in a line into the ground to support the timber planks of a small retaining wall, typically used to prevent erosion under a bridge abutment.

**Post or column:** a member resisting compressive stresses, in a vertical or near vertical position.

**Scour:** erosive action of removing streambed material around bridge substructure due to water flow. Scour is of particular concern during high-water events.

**Short span bridge:** the characteristics of these bridges are a span less than 20 feet and typically supported by timber piles or shallow concrete footings.

**Soffit:** the underside of the bridge deck or sidewalk.

**Spall:** a concrete deficiency wherein a portion of the concrete surface is popped off from the main structure due to the expansive forces of corroding steel rebar underneath. This is especially common on older concrete bridges.

**Stringer:** a longitudinal beam (less than 30' long) supporting the bridge deck, and in large bridges, framed into or upon the floor beams.

**Sufficiency rating:** the sufficiency rating is a numeric value from 100 (a bridge in new condition) to 0 (a bridge incapable of carrying traffic). The sufficiency rating is the summation of four calculated values: Structural Adequacy and Safety, Serviceability and Functional Obsolescence, Essentiality for Public Use, and Special Reductions.

**Substructure:** the abutment, piers, grillage, or other structure built to support the span or spans of a bridge superstructure and includes abutments, piers, bents, and bearings.

**Superstructure:** the entire portion of a bridge structure which primarily receives and supports traffic loads and in turn transfers the reactions to the bridge substructure; usually consists of the deck and beams or, in the case of a truss bridge, the entire truss.

**Tension:** type of stress involving an action which pulls apart.

**Trestle:** a bridge structure consisting of beam spans supported upon bents. Trestles are usually made of timber and have numerous diagonal braces, both within each bent and from bent to bent.

**UBIT:** Under Bridge Inspection Truck

**Wheelrail:** a timber curb fastened directly to the deck, most commonly found on all-timber bridges.

**Wingwall:** walls that slant outward from the corners of the overall bridge that support roadway fill of the approach

**APPENDIX TO THE 2015 ANNUAL BRIDGE REPORT**

Table A – Bridge Condition Summary

Table B - Bridge Inventory Detail

Table C - Bridge Repairs

# Table A- Bridge Inventory

Bridge No.	Bridge Name	Location	Bridge Type	Built date	Bridge Age	Atlas page	Bridge Condition	Sufficiency Rating	Structurally Deficient / Functionally	scour code	Scour Critical	Inventory Rating (Tons)	Inventory Rating Method	Operating Rating (Tons)	Operating Rating Method	Bridge Posted - Height (H), Weight (W)	NBI Repoable	Municipal Code
<b>Clark County Public Works</b>																		
1	Kineline	NE Highway 99	Prestressed Concrete Girder	2008	7	26	Good	96.45		5		54	Load and Resistance Factor Design	90	LRFD		Y	0000
2	Felida	NE Seward	Post Tensioned Box Girder	1985	30	25	Good	95.57		8		39	LRFD	99	LRFD		Y	0000
6	Gibbons Creek	SE Evergreen Way	Concrete Slab & Stringer	1940	75	4	Good	74.34	FO	3	Critical	29	LRFD	49	LRFD		Y	0000
11	Whipple Creek	NW 179th Street	Concrete Slab & Stringer	1963	52	25	Good	82.41		U	Unknown Foundation	33	LRFD	56	LRFD		Y	0000
12	Knapps Station	NW Krieger Road	Concrete Slab & (Lin-Tee) Stringers with 1-6 Pile Bent Pre-cast Concrete Stringers & Deck	1962	53	24	Good	86.41		5		44	LRFD	73	LRFD		Y	0000
13	Burnt Bridge Crest	NE Hazel Dell Avenue	Prestressed Concrete Girder	1996	19	17	Good	96.59		N		46	LRFD	77	LRFD		Y	0000
26	Betts	NE Salmon Creek Avenue	Prestressed Concrete Girder	2006	9	26	Good	97.38		8		51	LRFD	99	LRFD		Y	0000
30	Flatwood	NE 239th Street	Concrete Slab & Stringer	1951	64	36	Fair	62.86		3	Critical	22	LRFD	37	LRFD		Y	0000
32	Knowles	NE Salmon Creek Avenue	Concrete Slab & Stringer	1963	52	26	Good	76.9		5		39	LRFD	65	LRFD		N	0000
33	Pleasant Valley	NE 50th Avenue	Concrete Slab & Stringer	1960	55	27	Good	72.73	FO	3	Critical	33	LRFD	55	LRFD		Y	0000
36	Wilson	NE 72nd Avenue	Prestressed Concrete Bulb-T Girder	1994	21	27	Good	94.86		5		33	LRFD	55	LRFD		Y	0000
39	Glenwood	NE 139th Street	Concrete Slab & Stringer	1955	60	27	Good	70.14		3	Critical	27	LRFD	45	LRFD		N	0000
51	Dollar's Corner	NE 72nd Avenue	Precast Concrete Arch	1995	20	36	Good	93.98		3	Critical	45	LRFD	76	LRFD		Y	0000
54	Huber	NE 259th Street	Concrete Slab & Stringer	1951	64	36	Fair	63.04		6		22	LRFD	37	LRFD		N	0000
56	Pioneer	NE 259th Street	Concrete Slab & Stringer	1951	64	35	Good	68.24		7		26	LRFD	43	LRFD		N	0000
59	Bratton (Cattle Pass)	NE Jenny Creek Road	Culvert for Cattle Pass	1956	59	53	Good	75.08		N		22	LRFD	36	LRFD		N	0000
63	Carson	NE 67th Avenue	Concrete Slab & Stringer	1957	58	36	Good	74.43		7		24	LRFD	40	LRFD		Y	0000
65	Cedar Creek		Concrete Box Girder w/Cantilever Section	1946	69	53-54	Fair	52.44		5		18	LRFD	31	LRFD	W	Y	0000
69	Grist Mill	NE Grist Mill Road	Covered Timber Truss	1994	21	60	Good	83.19		5		38	WSD	58	WSD		Y	0000
75	Dayton	NE Cedar Creek Road	Concrete Slab & Steel Beam	1955	60	55	Good	69.73		7		22	LRFD	36	LRFD		Y	0000
94	Blaker	NE 142nd Ave	Concrete Slab & Stringer	1953	62	46	Good	77.47		5		27	LRFD	46	LRFD		N	0000
96	Rock Creek	Rock Creek Road	Concrete Slab on Solid Concrete Bent	1949	66	46	Fair	63.5	FO	5		24	LRFD	39	LRFD		Y	0000
100	Helsson	NE 172nd Avenue	Concrete Open Spandrel Ribbed Arch	1999	16	47	Good	96.19		8		32	LRFD	54	LRFD		Y	0000
102	Kepfer	JR Anderson Rd	Concrete Slab & Stringer	1959	56	45	Fair	47.45		3	Critical	18	LRFD	29	LRFD	W	Y	0000
107	JA Moore	JA Moore Road	Concrete Slab & Stringer	1954	61	45	Good	75.36		U	Unknown Foundation	32	LRFD	54	LRFD		N	0000
108	Heitman	JA Moore Road	Concrete Slab & Stringer	1958	57	44	Fair	49.75	FO	5		22	LRFD	37	LRFD		Y	0000
116	Lucia Falls	NE Hantwick Road	Pre-cast Concrete Slab & Prestressed Concrete Beams	2005	10	47	Good	83.91		5		41	LRFD	66	LRFD		Y	0000
120	Big Tree Creek	Lucia Falls Road	Concrete Slab & Stringers / Solid Concrete Bent	1959	56	48	Good	85.47		3	Critical	32	LRFD	53	LRFD		Y	0000
127	Arch McKee	Gerber McKee Road	Concrete Slab	1958	57	57	Good	72.36		3	Critical	27	LRFD	45	LRFD		N	0000
167	Vancamp	NE 217th Avenue	Prestressed Concrete Beams w/Concrete Deck & Abutments	1991	24	20	Good	98.07		7		58	LRFD	96	LRFD		Y	0000
168	Matney	NE 68th Street	Concrete Slab & Stringer	1955	60	20	Fair	57.99		8		19	LRFD	32	LRFD		Y	0000
169	Matney South	NE 232nd Avenue	Concrete Slab & Stringer	1953	62	21	Good	67.1		3	Critical	33	LRFD	55	LRFD		Y	0000
196	Washougal River	NE Vernon Road	Prestressed Concrete Beams w/Concrete Deck & Abutments	1998	17	14	Good	94.1	FO	5		42	LRFD	99	LRFD		Y	0000
201	Brush Prairie	NE 156th Street	Concrete Box Girder w/2 Open Pile Concrete Bents	1960	55	27	Fair	66.07		3	Critical	19	LRFD	32	LRFD		Y	0000
203	Boulder Creek	NE Lessard Road	Steel Stringers w/Wood Deck	1960	55	22	Good	72.91		3	Critical	34	LRFD	57	LRFD		N	0000

# Table A- Bridge Inventory

Clark County Public Works																		
211	None	NE 167th Avenue	Concrete Slab & Stringer	1963	51	28	Good	78.72		3	Critical	37	LRFD	57	LRFD		Y	#REF!
212	JC Ward	NE 182nd Avenue	Concrete Slab & Stringer	1960	54	29	Good	78.05	FO	7		36	LRFD	61	LRFD		Y	0000
212	JC Ward	NE 182nd Avenue	Concrete Slab & Stringer	1960	54	29	Good	78.05	FO	7		36	LRFD	61	LRFD		Y	0000
213	Morgan	NE 182nd Avenue	Concrete Slab & Stringer	1956	58	29	Fair	64.14	FO	U	Unknown Foundation	23	LRFD	38	LRFD		Y	0000
217	Venersborg	NE Risto Road	Concrete Slab & Stringer	1954	61	38	Fair	54.43	FO	5		19	LRFD	32	LRFD		Y	0000
222	None	NE 167th Avenue	Concrete Slab & Stringer	1954	61	28	Fair	65.52	FO	3	Critical	34	LRFD	39	LRFD		Y	0000
225	Dudley	NE 199th Street	Concrete Slab & Stringer	1962	53	39	Good	86.32		U	Unknown Foundation	39	LRFD	65	LRFD		Y	0000
229	172nd Bridge	172nd Ave	Steel Girder	2009	6	20	Good	99.75		8		57	LRFD	95	LRFD		Y	0000
230	Fifth Plain Creek	NE 88th Street	PT/Prestressed girders	2015	0	20	Good	99.76		8		17	LRFD	28	LRFD		Y	0000
231	China Ditch	NE Ward Road	Prestressed Conc Girder	2009	6	20	Good	98.53		8		40	LRFD	68	LRFD		Y	0000
232	Davis	NE Davis Road	Concrete Slab & Stringer	1953	62	28	Fair	63.12		3	Critical	32	LRFD	54	LRFD		N	0000
242	Lewis River	Dole Valley Road	Concrete Slab & Stringer	1961	54	40	Good	87.92		8		36	LRFD	59	LRFD		Y	0000
244	Rock Creek	Dole Valley Road	Glu-Lam Beam w/Wood Deck & Concrete Bent	1975	40	40	Good	68.06	FO	U	Unknown Foundation	33	Working Stress Design (WSD)	43	LRFD		Y	0000
252	Blair Zeek	NE Blair Road	Concrete Slab & Stringer w/ 2 - 4 Concrete Column Bents	1961	54	12	Good	76.2	FO	3	Critical	36	LRFD	61	LRFD		Y	0000
261	None	NE 119th Street	Concrete Slab & Stringer	1949	66	29	Good	81		7		23	LRFD	48	LRFD		N	0000
266	Allworth	NE Allworth Road	Concrete Slab & Stringer	1954	61	38	Fair	65.53		5		23	LRFD	38	LRFD		N	0000
267	Cresap	Cresap Road	Concrete Flat Slab	1956	59	38	Good	76.37		U	Unknown Foundation	26	LRFD	42	LRFD		N	0000
272	None	NE 202nd Avenue	Concrete Slab & Stringer	1961	54	20	Good	71.52		3	Critical	29	LRFD	65	LRFD		N	0000
273	Day Break	Daybreak Road	Concrete Deck, Steel Girders & One solid Concrete Bent	1966	49	36	Good	88.52		7		38	LRFD	59	LRFD		Y	0000
274	Shanghai Creek	NE 212th Avenue	Concrete Slab & Stringer	1955	60	20	Good	74.44		4		31	LRFD	51	LRFD		N	0000
275	Van Atta	NE 112th Avenue	Wood Deck w/Steel Stringers & 1 Solid Concrete Bent	1960	55	27	Good	70.66		U	Unknown Foundation	31	LRFD	51	LRFD		Y	0000
294	Lehto	NE Lehto Road	Concrete Sonovoid Beams	1972	43	29	Good	67.04	FO	3	Critical	50	LRFD	83	LRFD		Y	0000
299	Landon	CC Landon Road	Concrete Slab & Stringer	1955	60	48	Fair	62.29		U	Unknown Foundation	21	LRFD	34	LRFD		Y	0000
307	Little Washougal	SE Blair Road	Concrete Slab & Beam	1959	56	13	Fair	50.98		5		20	LRFD	34	LRFD		Y	0000
308	Bonneville	NE 222nd Avenue	Concrete Slab & Stringer	1955	60	20	Good	77.28		U	Unknown Foundation	30	LRFD	50	LRFD		N	0000
326	NE 2nd Avenue	NE Second Avenue	Concrete Slab	1985	30	17	Good	89.47		5		33	LRFD	65	LRFD		Y	0000
327	Alki Rd	Alki Rd	Concrete Slab	1985	30	17	Good	81.86		4		33	LRFD	65	LRFD		Y	0000
330	Padden	Padden Parkway	Prestressed Concrete Bulb-T Girders w/Concrete Deck & Abutment	1999	16	18	Good	98.19		N		41	LF	69	LF		Y	0000
331	Salmon Creek	Salmon Creek	Concrete Luten Arch	1923	92	28	Good	79.01	FO	5		72	Other	99	Other		Y	0000
332	Woodin Creek Bridge	Weaver Creek Rd	Concrete Box Culvert	1900	115	28	Fair	60.42		3	Critical	19	Unknown	36	Unknown		N	0000
337	LaLonde Creek Culvert	Salmon Creek Avenue @ LaLonde Creek	Concrete Culvert	2003	12	26	Good	84.44		U	Unknown Foundation	24	LF	40	LF		N	0000
338	Salmon Creek Culvert	NE 119th Street	Concrete Culvert	2002	13	26	Good	81.51		U	Unknown Foundation	22	LF	44	LF		N	0000
339	Padden West Culverts	W. of Andreson	2 HDPE & 2 Metal	2003	12	18	Good	77.49	FO	8		99	LRFD	99	LRFD		Y	0000
340	John Creek Culvert	NE Cedar Creek Road	Metal Culvert	1999	16	55	Good	80		6		99	LRFD	99	LRFD		N	0000
341	Amboy/Cedar Creek Culvert	Amboy Road	Culvert	1999	16	48	Fair	62.83		4		20	LRFD	33	LRFD		Y	0000
342	Rockwell Creek	NE 23rd Avenue	Prestressed Concrete Girder	2004	11	26	Good	99.36		9		45	LF	97	LF		Y	0000
343	Curtain Creek Culvert	NE 119th Street	Metal arched culvert	2015	0	27	Good	97.42		8								
1406	Little Washougal River	Little Washougal River	Concrete Stringer	1949	66	13	Fair	63.2	FO	5		23	LRFD	38	LRFD		Y	0000
1409	Cougar Creek	Washougal River Road	Voided concrete slab	2012	3	14	Good	94.09		8		69	LRFD	91	LRFD		Y	0000
CC Pedestrian Bridges																		
320P	149th Walkway Ped Bridge	NE 149th St	Concrete Deck with Glu-Lam Girder	2005	10	25				8		0		0			N	0000
205/30P	Padden Parkway Ped Bridge	I-205 Overcrossing	Prestressed Concrete Girders/Deck	2003	12	18		0		N		0	Not Rated	0	Not Rated		N	0000

# Table A- Bridge Inventory

CC Pedestrian Bridges																										
344P	Pleasant Valley Ped Bridge	Salmon Creek Avenue	Prefabricated weathering steel	2014	1	26													8							
City of Vancouver																										
5	Minnehaha	NE Minnehaha Street	Concrete Slab w/Concrete Pile Bents	1972	43	17	Good	91.71		N								29	LRFD	48	LRFD		Y	1350		
38	39th street RR Overcrossing	NW 39th Street	Concrete Deck w/Prestressed Concrete Girders	2010	5	16	Good	99.86		N								73	LRFD	99	LRFD		Y	1350		
162	Burton Road	NE Burton Road	Concrete Slab	2005	10	9	Good	96.29		8								84	LRFD	99	LRFD		Y	1350		
328	Corporate Woods Bridge	NE 110th Avenue	Concrete Slab w/Pre-cast Concrete Channel Beams	1989	26	18	Good	98.44		U	Unknown Foundation							33	LRFD	70	LRFD		Y	1350		
329	NE 15th Avenue Bridge	NE 15th Avenue	Concrete Stayed Girder???	1984	31	17	Good	94.72		8								45	LRFD	75	LRFD		Y	1350		
1350	Burnt Bridge Creek Culvert	NE Devine Road	Aluminum Culvert	1978	37	9	Good	76.86		6								40	LRFD	40	LRFD		N	1350		
1351	Port of Vancouver	NW 26th Avenue	Concrete Deck/Abutment & Pier Cap	2000	15	7	Good	92.48		N								59		99			Y	1350		
1352	Burnt Bridge Creek	NE 86th Avenue	Prestressed Concrete Bulb-T w/Concrete Deck & Abutments	2001	14	9	Good	97.12		8								47	LRFD	81	LRFD		Y	1350		
4236	Evergreen Blvd Overpass	NE Blandford Drive	Concrete Slab & Steel Girder	1969	46	8	Good	80.53		N								48	LRFD	80	LRFD		Y	1350		
4891	Fruit Valley Rd Overpass	Fruit Valley Road	Concrete Slab	1948	67	16	Fair	55.53	FO	N								21	LRFD	35	LRFD		Y	1350		
501/8E	BNRR OC	Fourth Plain Blvd	Concrete Deck w/Welded Steel Girders	1962	53	7	Good	72.11	FO	N								30	LF	50	LF		Y	1350		
501/8W	BNRR OC	Fourth Plain Blvd	Concrete Deck w/Prestressed Concrete Girders	1986	29	7	Good	81.26		N								49	LF	82	LF		Y	1350		
501/10C	Vancouver Lake Flushing Channel	SR501	Submerged Culvert	1990	25	15	Good	86.14	FO	8								99		99			Y	1350		
Railroad Bridges																										
20141	CCRR Undercrossing - Old Hwy 99	NE Hwy 99	Steel Truss - Railroad			17														Other		Other	H	#N/A		
99906-01	BNRR Columbia River O-xing	W. 8th - Columbia River Crossing	Steel Truss - Railroad	1908	107	7														Other		Other	Y			
99906-02	BNRR at Boise Cascade O-xing	Boise Cascade Paper (W 5th, Grant & W. 6th)	Railroad	2013	2	8																	N			
99906-03	Inn at the Quay - O-xing	Columbia Street	Railroad	1983	32	8														Other		Other	N			
99906-04	BNRR-Columbia Shores O-xing	Columbia Shores Blvd	Railroad	1942	73	8														Other		Other	Y			
99906-05	BNRR Marine Park Wy O-xing	Marine Park Way	Railroad	1908	107	8														Other		Other	H	N		
City of Washougal																										
WASHOU-1	Orchard View	0.2 M south of J St	3-sided concrete box Prestressed Concrete	2008	7	4	Good	97.94		8										41	LF	61	LF		Y	1385
1402	BNSF RR U-xing	Washougal River Road	Stringer	1965	50	4	Good	75.4	FO	N										41	LRFD	68	LRFD		Y	1385
1404	Washougal River Bridge	Washougal River Road	Prestressed Concrete	1993	22	4	Good	92.07		5										22	LRFD	76	LRFD		Y	1385
City of Camas																										
Camas-010	Washougal River Bridge	NE 3rd Avenue	Stringer/Multi-beam	1969	46	3	Fair	58.54	FO	3	Critical									46	Other	37	Other		Y	0145
Camas-020	Division Street Bridge	Division Street	Concrete T Beams	1960	55	3	Fair	58.82	FO	8										17	LF	29	LF		Y	0145
Camas-030	Dallas Street	Crown Z Mill Water Ditch	Concrete Multi-beam	1919	96	3	Fair	51.76	FO	8										17	LF	28	LF	W	Y	0145
Camas-040	Camas Meadows	Camas Meadows Drive	Pre-cast Concrete Arch	2000	15	11	Good	93.91		8										99	Not Rated	99	Not Rated		Y	0145
Camas-050	Woodburn Drive	Woodburn Drive	Steel arch Culvert	2013	2	13	Good	93.13		8										99					0145	
Camas-060	Lacamas	NE Goodwin Road	Concrete Slab & Stringer	1953	62	11	Fair	59.1		3	Critical									33	LRFD	55	LRFD		Y	0000
City of Ridgefield																										
Ridgefd-1	Gee Creek - Abrams Park	Division Street	Glu-Lam Stringer/Multi-beam	1975	40	34	Fair	63.98	FO	7										50	Load Factor (LF)	71	LF		Y	1085
Ridgefd-2	Heron Ridge	Heron Drive	Concrete Deck Bulb	2003	12	34	Good	94.07		5										36	Admin	36	Admin		Y	1085
City of Battle Ground																										
336	Woodin Creek Culvert	Eaton Blvd (199th St)	Concrete Box Culvert 12' X 3'	2003	12	28	Good	96.5		U	Unknown Foundation									99	LRFD	99	LRFD		Y	0060
205	None	NE 142nd Avenue	Concrete Slab & Stringer	1958	57	28	Good	76.13	FO	5										39	LRFD	62	LRFD		Y	0000
City of La Center																										
21	LaCenter	NE LaCenter Road	Continuous w/Prestressed W83G Girders & Cast-in-place Deck	2001	14	44	Good	82.37		8										84	LRFD	99	LRFD		Y	0080

## Table B - Bridge Condition State 2015

Agency	Total Bridges in Program	Bridge Condition			Structurally Deficient	Functionally Obsolete	Scour Critical	Fracture Critical
		Good	Fair	Poor				
<i>Clark County</i>	74	55	19	0	0	16	11	0
<i>City of Vancouver</i>	13	12	1	0	0	2	0	1
<i>City of Washougal</i>	3	3	0	0	0	1	1	0
<i>City of Camas</i>	6	2	4	0	0	4	2	0
<i>City of Ridgefield</i>	2	1	1	0	0	1	0	0
<i>City of Battle Ground</i>	2	2	0	0	0	1	0	0
<i>City of La Center</i>	1	1	0	0	0	0	0	
<i>RailRoad (BNSF-5,CC-1)</i>	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Pedestrian Bridges (CC)</i>	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Totals</b>	<b>110</b>	<b>76</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>14</b>	<b>1</b>

> Good - Sufficiency Rating from 66.7 to 99.9

> Fair - Sufficiency Rating from 33.3 to 66.6

> Poor - Sufficiency Rating from 0 to 33.2

> Structurally Deficient - Impacted ability to carry intended traffic loads.

> Functionally Obsolete - Narrow structure and geometry are not based on current standards.

> Scour Critical - Foundations considered unstable or shallow or stream is undermining stability of structure. Requires more extensive monitoring and inspection during and after flood events.

> Fracture Critical - Defined as a structure with 2 load paths with steel members in tension, could cause immediate catastrophic failure if members fail. Requires more extensive inspection and testing.

# Table C - Repairs

Clark County					
Structure_ID	Bridge_No.	Bridge_Name	Agency_ID	City_ID	Repair_Description
08771700	1	Klinline	02	0000	West Overlook rail missing a nut
08771700	1	Klinline	02	0000	Sidewalk approach NE corner vehicle damage
08272200	2	FELIDA	02	0000	Trip hazard at settled walkway all for corners
08272200	2	FELIDA	02	0000	Compression Seal -north end of bridge -concrete surrounding seal severely cracked, broken.
08202500	6	GIBBONS CREEK	02	0000	Pot hole SE end of bridge
08082200	11	WHIPPLE CREEK	02	0000	The joints are separating with voids up to 1 1/2" wide by 1 1/2" deep and need to be resealed.
08082200	11	WHIPPLE CREEK	02	0000	NW corner traffic delineator is loose and needs reattachment.
08082200	11	WHIPPLE CREEK	02	0000	Minor crack opening at west deck joint.
08064500	12	KNAPPS STATION	02	0000	Classic scour hole developing @ center pier around concrete hex piles 1 - 4, estimated 6 to 7 feet deep but too deep and too far out to measure with equipment on hand. See what we can protect the pier with.
08627800	13	BURNT BRIDGE CREST	02	0000	Monitor erosion at the base of Pier 3.
08627800	13	BURNT BRIDGE CREST	02	0000	Replace missing bolts in the NW and SW guardrail transitions.
08627800	13	BURNT BRIDGE CREST	02	0000	Tighten loose fasteners on the NE section of guardrail.
08627800	13	BURNT BRIDGE CREST	02	0000	Clean moss off the girder fascia as necessary.
08627800	13	BURNT BRIDGE CREST	02	0000	Seal AC pavement cracks as necessary.
08627800	13	BURNT BRIDGE CREST	02	0000	Paint over graffiti on parapets and pier walls.
08627800	13	BURNT BRIDGE CREST	02	0000	Remove transient encampment and clean up garbage under bridge.
08627800	13	BURNT BRIDGE CREST	02	0000	reset cap block on SW wall
08627800	13	BURNT BRIDGE CREST	02	0000	remove leaves slip/fall hazard for pedestrians
08627800	13	BURNT BRIDGE CREST	02	0000	Replace bold cap cover on bridge rail - see note 684
08627800	13	BURNT BRIDGE CREST	02	0000	Reseal AC overlay at pier caps.
08627800	13	BURNT BRIDGE CREST	02	0000	North approach joint needs to be resealed.
08404200	30	FLATWOOD	02	0000	Replace riprap at NW abutment.

## Table C - Repairs

08404200	30	FLATWOOD	02	0000	Brush slight obstruction on the up stream side should be cleaned out, adjacent wall slight under mining
08323300	32	KNOWLES	02	0000	West footing needs to be monitored. Current hits west footing approx. 10 ft. from south end and is starting to dig out the stream bed. (Not yet to the bottom of the footing).
08323300	32	KNOWLES	02	0000	Bridge has no approach rails on any end. Can we install?
08251100	33	PLEASANT VALLEY	02	0000	Old abutment needs stabilization or removal. Imminent danger of falling against South pier supports (Bent #2) .
08251100	33	PLEASANT VALLEY	02	0000	Repair damaged guardrail at southeast quadrant of bridge.
08251100	33	PLEASANT VALLEY	02	0000	Repaint areas of grafitti on the girders in Span 3 and Abutment 4.
08251100	33	PLEASANT VALLEY	02	0000	Monitor erosion at Abutment 4.
08251100	33	PLEASANT VALLEY	02	0000	Repair Drain SE corner that is eroding the bank under the concrete debis
08251100	33	PLEASANT VALLEY	02	0000	Remove loose gravel from sidewalk triping hazard
08611700	36	WILSON	02	0000	Joint at south end of bridge deck needs resealing
08611700	36	WILSON	02	0000	Clean growth on girders near weep holes.
08611700	36	WILSON	02	0000	Cracks in ACP at each end o bridge need patched. (done by 4/4/05 inspection)
08611700	36	WILSON	02	0000	Approximately 3' length of south abutment (east side) being undermined by erosion. Cavity is 4" in height and extends 4 to 5" under abutment (see photos)
08268600	39	GLENWOOD	02	0000	Edge of ACP needs filled with rock at approach rails.
08275800	54	HUBER	02	0000	Guard Rail on North side needs to be nested
08322100	56	PIONEER	02	0000	Stabilize slope at SE, SW and NW corners of bridge with rip rap
08322100	56	PIONEER	02	0000	Monitor NW retainingl as the wall in leaning toward creek
08322100	56	PIONEER	02	0000	Address erosion at the ends of the bridges at roadway intersection at three corners
08310900	59	BRATTON (CATTLE PASS)	02	0000	Remove and replace NE guard rail post

## Table C - Repairs

08310900	59	BRATTON (CATTLE PASS)	02	0000	Retaining wall crack repair
08042500	63	CARSON	02	0000	Remove vegetation in upstream channel.
08144800	65	CEDAR CREEK	02	0000	Replace Bridge this year
08611600	69	GRIST MILL	02	0000	Slot drains on both approaches need to be cleaned
08611600	69	GRIST MILL	02	0000	Bridge overhead clearance changed from 16'-1" to 15'-7". Clearance measured at SW corner of portal. Previous clearance appears to have been taken at centerline of portal.
08611600	69	GRIST MILL	02	0000	Replace the missing sections of timber cladding at deck level.
08611600	69	GRIST MILL	02	0000	Clean the graffiti damage from the South Abutment Backwall.
08611600	69	GRIST MILL	02	0000	Expansion joints and bridge drains at each end of bridge need to be cleaned out.
08227700	75	DAYTON	02	0000	Girders need to be painted
08130000	94	BLAKER	02	0000	Reseal the joints at each approach.
08130000	94	BLAKER	02	0000	Repair the spalls in the east overhang.
08130000	94	BLAKER	02	0000	Clean moss and vegetation from abutments.
08130000	94	BLAKER	02	0000	Remove vegetation in upstream channel.
07992900	96	ROCK CREEK	02	0000	Monitor settlement at the east approach and seal the cracking in the asphalt.
07992900	96	ROCK CREEK	02	0000	necessary.
08649000	100	HEISSON	02	0000	Fall protection fence on south side under bridge should be removed.
08649000	100	HEISSON	02	0000	Recommend UBIT to look at spalling occurring on arch near girder.
08649000	100	HEISSON	02	0000	South end, west side @ expansion joint. 3' long area of joint seat is broken & has dropped down about 2". Recommend checking utility sleeve, under bridge, for erosion.
08078700	1022	KEPFER	02	0000	Monitor the wingwall/abutment settlement at the SW corner.

## Table C - Repairs

08238600	107	JA MOORE	02	0000	Debris both rock and large woody material under the bridge needs removal for water way clearance
08158000	108	HEITMAN	02	0000	Seal the cracks in the AC at Abutment 1.
08158000	108	HEITMAN	02	0000	Repair the spall in the east curb.
08158000	108	HEITMAN	02	0000	Patch the cracks in the abutment.
08158000	108	HEITMAN	02	0000	Chip out, sleeve and repack concrete at utility through the southwest and northwest wingwalls.
08097600	116	LUCIA FALLS	02	0000	SW guard Rail is low at 24" vs new standard of 26"
08097600	116	LUCIA FALLS	02	0000	On SW Approach the 3rd post has a missing bolt, the guard rail is not tied to the post at this location
08097600	116	LUCIA FALLS	02	0000	Recommend a 12 month routine inspection frequency and a 24 month UBIT inspection frequency. Routine frequency may be changed to 24 months after girder is repaired.
08097600	116	LUCIA FALLS	02	0000	Repair Girder 1B by removing all loose concrete and scale, painting exposed strands with an epoxy paint, and patching spalled areas with grout.
08097600	116	LUCIA FALLS	02	0000	60, 64 & 67, WB75-46 & 49, and WB78-38. Please verify our findings. If changes are incorrect, please see the cover letter for instructions regarding updating this inf
08162600	120	BIG TREE CREEK	02	0000	Monitor the riprap at the Southwest corner ckwall and pedestrian bridge abutment.
08162600	120	BIG TREE CREEK	02	0000	Repair the rock stabilization at the Northwest and Northeast corners.
08185300	127	ARCH MCKEE	02	0000	Concrete base for delineator at southeast corner is 25% undermined.
08185300	127	ARCH MCKEE	02	0000	Delineator post on NW corner is broken. Requires repair.
08185300	127	ARCH MCKEE	02	0000	Steel utility conduit on west side of bridge has pulled loose from brackets.
08185300	127	ARCH MCKEE	02	0000	Concrete base for delineator at southeast corner is 25% undermined.
08185300	127	ARCH MCKEE	02	0000	Steel utility conduit on west side of bridge has pulled loose from brackets.
08185300	127	ARCH MCKEE	02	0000	Bridge drains need to be cleaned.
08588800	167	VANCAMP	02	0000	Erosion bypassing paved channel SW corner

## Table C - Repairs

08095200	168	MATNEY	02	0000	Add material at rock/block wingwalls that are undermined
08087400	169	MATNEY SOUTH	02	0000	M&O to place rip rap at NW corner
08087400	169	MATNEY SOUTH	02	0000	M&O Remove Debris from South Abutment
08087400	169	MATNEY SOUTH	02	0000	Broken conduit
08644100	196	WASHOUGAL RIVER	02	0000	Paint over the graffiti on the South Abutment.
08644100	196	WASHOUGAL RIVER	02	0000	Remove bird nest grider A mid span
08644100	196	WASHOUGAL RIVER	02	0000	Seal ac joint at SW corner of deck
08644100	196	WASHOUGAL RIVER	02	0000	Retrieve and place P marker on SE corner, Marker is over the bridge side near the concrete steps.
08095600	203	BOULDER CREEK	02	0000	NW Guardrail Terminal - Has been hit and a bolt is broken, as well as a steel member is bent.
08095600	203	BOULDER CREEK	02	0000	away. Other bolts may be compromised. Check all bolts on east side of bridge for damage. Thrie beam damage.
08171200	205	NONE	02	0000	Clean dirt and moss off the girders, pier and abutments. Repaint as necessary.
08171200	205	NONE	02	0000	Patch cracks in the abutments and Girder E at Pier 2. Patch spall in Girder E at Pier 2.
08171200	205	NONE	02	0000	Seal cracks in the AC wearing surface. Monitor settlement at NW approach.
08142300	121	NONE	02	0000	Inspector noted debris collecting by rocks at NW abutment
08241100	213	MORGAN	02	0000	hitting bridge) that will come down in roadway. 10" cedar. Check to see if it is removed.
08016100	216	JOHN OTT	02	0000	Damage to bridge guardrail
08016100	216	JOHN OTT	02	0000	several pieces of woody debris built up across the river on span 1, picture
08015000	217	VENERSBORG	02	0000	Repair/replace the joint
08015000	217	VENERSBORG	02	0000	approach guardrail needs to be raised

## Table C - Repairs

08015000	217	VENERSBORG	02	0000	Remove excess material which is causing a bump at the joints.
08015000	217	VENERSBORG	02	0000	Remove debris buildup on the north girder, outboard side.
08814600	229	172 nd Ave	02	0000	Repair end diaphragm stops include provision for movement (need structural investigation first)
08814600	229	172 nd Ave	02	0000	Structural review recommended.
08814500	231	China Ditch	02	0000	Spalled barrier concrete at SW corner of bridge at the barrier/guardrail connection
08814500	231	China Ditch	02	0000	Finish the accident repair, cover the conduits, replace the type three and remove the very tall 4x4, grout curb in place or replace.
08433600	232	DAVIS	02	0000	Channel protection at downstream west end is undercut. Repair as necessary
08433600	232	DAVIS	02	0000	D/S west footing beginning to be undercut. Needs channel protection
08433600	232	DAVIS	02	0000	North side curb has a void where the guardrail bolt enters the curb. This may effect the function of the rail system.
08243300	242	LEWIS RIVER	02	0000	Seal approach joint at Abutment 2.
08243300	242	LEWIS RIVER	02	0000	Repair utility conduit bracket at SW wingwall.
08243300	242	LEWIS RIVER	02	0000	Patch spalls on girder bottom flanges as necessary.
08243300	242	LEWIS RIVER	02	0000	Clean moss from girders and wingwalls.
08243300	242	LEWIS RIVER	02	0000	Paint over graffiti at Abutment 1.
08032800	244	ROCK CREEK	02	0000	Reseal the joints at both abutments.
08032800	244	ROCK CREEK	02	0000	Divert/clean ditch NE end eroding wingwall/abut
08032800	244	ROCK CREEK	02	0000	Reinforce the Abutment 3 footing due to scouring.
08335700	252	BLAIR ZEEK	02	0000	S guard rail too low needs to be raised
08335700	252	BLAIR ZEEK	02	0000	South approach has settle between 1 and 2 " smooth out with AC patch

## Table C - Repairs

08335700	252	BLAIR ZEEK	02	0000	Clean out drains
08335700	252	BLAIR ZEEK	02	0000	Settlement due to scour needs repair on both ends of the bridge
08335700	252	BLAIR ZEEK	02	0000	Clear debris from south columns.
08393900	266	ALLWORTH	02	0000	Clear debris on upstream side of bridge.
08276000	273	DAY BREAK	02	0000	North Approach has slight settlement east lane patch with AC for smooth transition
08010700	274	SHANGHAI CREEK	02	0000	Remove tree from stream on downstream side of bridge.
08186600	275	VAN ATTA	02	0000	Clean and repaint all steel components, rail posts, and wood curbs.
08186600	275	VAN ATTA	02	0000	Remove debris on the upstream side of Pier 2. Remove falling tree on northwest bank.
08186600	275	VAN ATTA	02	0000	Repair the spall in the AC in Span 1, right wheel line.
08186600	275	VAN ATTA	02	0000	Culvert upstream and to the south is half plugged, needs cleared (see previous inspection reports).
08186600	275	VAN ATTA	02	0000	Replace split Guard rail post (see previous inspection reports).
08186600	275	VAN ATTA	02	0000	Clean and repaint Girder E paint failing (see previous inspection reports).
08025800	294	LEHTO	02	0000	pot holes in deck overlay
08121100	299	LONDON	02	0000	Remove vegetation in upstream channel.
08121100	299	LONDON	02	0000	Repair scour at West Abutment.
08438900	307	LITTLE WASHOUGAL	02	0000	Remove bird nests
08438900	307	LITTLE WASHOUGAL	02	0000	Remove Tar Paper from under bridge soffits so that deck can be seen for inspection.
08182900	326	N.E. 2ND AVENUE	02	0000	Repair the settlement and cracking at the southeast corner.
08182900	326	N.E. 2ND AVENUE	02	0000	Repair the heaving at the south end.

## Table C - Repairs

08182900	326	N.E. 2ND AVENUE	02	0000	Repair the erosion at Abutment 2.
08182900	326	N.E. 2ND AVENUE	02	0000	Remove moss from the deck fascia and the roadway shoulder.
08184300	327	ALKI ROAD	02	0000	Remove moss from the deck fascia and the roadway shoulder
08184300	327	ALKI ROAD	02	0000	Repair the southwest rail terminal.
08184300	327	ALKI ROAD	02	0000	Remove or cutback the tree at the southwest corner.
08184300	327	ALKI ROAD	02	0000	Repair the 2' long crack in the south approach roadway.
08184300	327	ALKI ROAD	02	0000	Add additional riprap as necessary.
08644000	330	PADDEN	02	0000	Trip issue on side walk both sides, sidewalk settlement off structure. dirt in AC transition or rack sidewalk back to grade
000000HE	331	SALMON CR	02	0000	Damaged guardrail
000000HE	331	SALMON CR	02	0000	Rock pocket repair on both abutments near top of footing
000000CL	332	WOODIN CREEK BRIDGE	02	0000	Clear rock from the downstream shallow area to eliminate ponding and scour.
08709000	339	PADDEN WEST CULVERTS	02	0000	Remove trees and vegetation or the ends will become in accessible and perhaps start clogging the culverts
08709100	340	JOHN CREEK CULVERT	02	0000	adjsut guard rail
08771800	342	ROCKWELL CREEK	02	0000	tighten the transverse supports throughout the bridge. Repair the utility conduit in the north abutment between Girders A and B.
08771800	342	ROCKWELL CREEK	02	0000	Monitor the settlement in the approach roadway at each approach slab.
08771800	342	ROCKWELL CREEK	02	0000	encampment on north abutment, repair chain link fencing and fill in gravel that was excavated for access.
0003606A	1406	LITTLE WASHOUGAL R	02	0000	Trash and brush dumped under NE side of bridge.
0003606A	1406	LITTLE WASHOUGAL R	02	0000	protection for the remainig structure on a 12-16' vertical hazard. If still in county ROW maintenance should install fencing.
0003606A	1406	LITTLE WASHOUGAL R	02	0000	Repair potholes and spalling of asphalt at south approach joint.

## Table C - Repairs

City of Battle Ground					
Structure_ID	Bridge_No.	Bridge_Name	Agency_ID	City_ID	Repair_Description
08708700	336	WOODIN CREEK CULVERT	04	0060	8" diameter log across N. end of culvert needs to be removed. This tree is still across the mouth of the culvert and should be removed.
08708700	336	WOODIN CREEK CULVERT	04	0060	Remove the vegetation and debris in the upstream channel.
City of Camas					
Structure_ID	Bridge_No.	Bridge_Name	Agency_ID	City_ID	Repair_Description
08507100	CAMAS-010	WASHOUGAL RIVER BRIDGE	04	0145	Add downspouts to drains on north side of bridge to prevent runoff from falling onto north stringer top flange.
08507100	CAMAS-010	WASHOUGAL RIVER BRIDGE	04	0145	exposing angle iron. several nut have rattled off causing noise and excess movement. Notified
08507100	CAMAS-010	WASHOUGAL RIVER BRIDGE	04	0145	WB 75-51 and WB 75-54 are coded "O" which is not a valid code. Also note that both the inventory and operating ratings are the same, indicating that one is incorrect.
08507100	CAMAS-010	WASHOUGAL RIVER BRIDGE	04	0145	Scour calculations should be completed as soon as possible.
08507100	CAMAS-010	WASHOUGAL RIVER BRIDGE	04	0145	Guardrail terminal on northeast is damaged; needs replacement
08706000	CAMAS-030	DALLAS STREET	04	0145	Repair sidewalk support struts.
08706100	CAMAS-040	CAMAS MEADOWS	04	0145	Clean and patch Ws arch spall at rebar
08706100	CAMAS-040	CAMAS MEADOWS	04	0145	low guard rail and curb alignment
08706100	CAMAS-040	CAMAS MEADOWS	04	0145	Terminal at NW corner needs repair/replace.
08269900	CAMAS-060	LACAMAS	04	0145	Clean Deck and open drains
08269900	CAMAS-060	LACAMAS	04	0145	Repair/replace joints
08269900	CAMAS-060	LACAMAS	04	0145	pot hole on west bound at jint
08269900	CAMAS-060	LACAMAS	04	0145	River guage rusted through and will likely fall over unless fixed
08269900	CAMAS-060	LACAMAS	04	0145	Grind a taper at bridge ends for smooth transitions onto and off of bridge.

## Table C - Repairs

<i>City of La Center</i>					
<i>Structure_ID</i>	<i>Bridge_No.</i>	<i>Bridge_Name</i>	<i>Agency_ID</i>	<i>City_ID</i>	<i>Repair_Description</i>
08684200	21	LA CENTER	04	0640	Chip out and patch back spall on coping
<i>City of Ridgefield</i>					
<i>Structure_ID</i>	<i>Bridge_No.</i>	<i>Bridge_Name</i>	<i>Agency_ID</i>	<i>City_ID</i>	<i>Repair_Description</i>
08531500	RIDGEFD-1	GEE CREEK-ABRAMS PARK	04	1085	Channel has large accumulation of storm debris upstream of bridge which is directing stream flow against the east bank.
<i>City of Vancouver</i>					
<i>Structure_ID</i>	<i>Bridge_No.</i>	<i>Bridge_Name</i>	<i>Agency_ID</i>	<i>City_ID</i>	<i>Repair_Description</i>
08124800	5	MINNEHAHA	04	1350	East approach in eastbound lanes near joint - needs repair.
08124800	5	MINNEHAHA	04	1350	Concrete Barrier southeast quad concrete crumbling aluminum rail ok
08124800	5	MINNEHAHA	04	1350	Homeless camps becoming extensive and unsanitary, unsafe to inspect alone.
08124800	5	MINNEHAHA	04	1350	Object marker at SW corner of bridge is down and needs to be reinstalled.
08124800	5	MINNEHAHA	04	1350	Heavy graffiti and tagging throughout, including "NO TRESSPASSING" signs.
08124800	5	MINNEHAHA	04	1350	Erosion under SE corner of bridge, apparently from drain pipe. Cannot find original exit of buried part of pipe due to dense blackberry growth.
08124800	5	MINNEHAHA	04	1350	Vehicle damage to concrete bridge railing on south side - aprox 15' from east end of bridge. Handrail needs permanent replacement.
08124800	5	MINNEHAHA	04	1350	Replace the missing bolts in the guardrail end section at the concrete barrier
08124800	5	MINNEHAHA	04	1350	Sidewalk approaches need work to reduce a tripping hazard. All Quads
08124800	5	MINNEHAHA	04	1350	Drains on the deck need to be unplugged
08124800	5	MINNEHAHA	04	1350	SE deck drain partially plugged
08771900	162	BURTON ROAD	04	1350	Seal transverse crack in AC at west end of bridge
08572100	328	CORPORATE WOODS BRIDGE	04	1350	Approach sidewalks on down stream side heaved and a tripping hazard

## Table C - Repairs

08607300	1350	BURNT BRIDGE CRK CULVERT	04	1350	Upstream debris across both barrels, remove and monitor could be beginnings of a beaver dam.
08607300	1350	BURNT BRIDGE CRK CULVERT	04	1350	Erosion behind the grouted rock needs stabilized
08711300	1351	PORT OF VANCOUVER	04	1350	Clean out packed sand in both north and south expansion joints
08711300	1351	PORT OF VANCOUVER	04	1350	SE corner of concrete barrier transition has a triangle 12" long by 8" that should be patched.
08710200	1352	BURNT BRIDGE CREEK	04	1350	Sidewalk settlement SW corner needs fixed as it is a tripping hazard and an ADA issue
08710200	1352	BURNT BRIDGE CREEK	04	1350	Review settlement issues with geotechnical and structural experts for recommendations.
08544900		EVERGREEN BLVD. OVERPASS	04	1350	Remove moss and vegetation from the structure and immediate vicinity
08544900	4236	EVERGREEN BLVD. OVERPASS	04	1350	Both approaches are starting to settle and crack. Will need to address this soon.
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Wedge patch the north approach to eliminate potholes and provide a smooth transition for cars driving onto the bridge.
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Replace or repair Poured Joint Filler over Pier2. (Removed repair as the joint over Pier 2 is a sliding plate joint, RGP 8/23/2005)
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Verified complete, repair unnecessary (JED/RCD 2009).
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Verified complete, repair unnecessary (JED/RCD 2009).
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Remove moss growth on approach sidewalks.
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Clean and unplug all drains.
08512400	4891	FRUIT VALLEY RD OVERPASS	04	1350	Trees need trimming near NE corner of bridge that is blocking sidewalk.
0006786A	501/8E	BNRR OC	04	1350	Expansion joints need to be cleaned out.
0006786A	501/8E	BNRR OC	04	1350	Concrete broken off @ back of post & rail being held together with 2X4 & caution tape (Needs immediate attention)
0006786A	501/8E	BNRR OC	04	1350	Drains still plugged & need cleaned out.
0006786A	501/8E	BNRR OC	04	1350	Metal rail damaged on East side requires repair. Post on East side has been hit and broken two bolts; requires repair.

## Table C - Repairs

0006786A	501/8E	BNRR OC	04	1350	Bottom Flange spalls in Girders 5E and 5C. Concrete grout patch with High Strength Concrete.
0012986A	501/8W	BNRR OC	04	1350	vertical clearance posting should read 14'-7" on Span 5 Girders in industrial yard. Please verify our findings. ..
0012986A	501/8W	BNRR OC	04	1350	Sliding Expansion joints need cleaned out.
08636100	99906-03	INN AT THE QUAY	27	1350	Several turfstone blocks on slope under bridge are displaced.
<b>City of Washougal</b>					
<i>Structure_ID</i>	<i>Bridge_No.</i>	<i>Bridge_Name</i>	<i>Agency_ID</i>	<i>City_ID</i>	<i>Repair_Description</i>
0007597A	1402	BN/SF RR O/C	04	1385	Repair approach settlement.
0007597A	1402	BN/SF RR O/C	04	1385	Drains need to be cleaned.
0007597A	1402	BN/SF RR O/C	04	1385	NE Sidewalk needs repaired to fix tripping hazard, All sidewalks need to be fixed for tripping hazard.
0007597A	1402	BN/SF RR O/C	04	1385	Girder G3 at the NE end of bridge should be excavated out to expose bearing pad
0007597A	1402	BN/SF RR O/C	04	1385	SW corner of bridge sidewalk have trip hazards.
08602800	1404	WASHOUGAL RIVER BRIDGE	04	1385	BP rail missing verts
08602800	1404	WASHOUGAL RIVER BRIDGE	04	1385	Differential settlemt on sidewlk south end tripping hazard