

KITTITAS COUNTY
DEPARTMENT OF PUBLIC WORKS
AGENDA STAFF REPORT

AGENDA DATE: June 20th, 2017

ACTION REQUESTED: Request to Approve the Chairman's Signature on Formal Task Order Document Number 004 with KPFF Consulting Engineers

BACKGROUND: The Federal Highway Administration (FHWA) issued a memo on November 15, 2013 clarifying FHWA's position on the analysis of Specialized Hauling Vehicles (SHVs) during bridge load ratings to comply with the requirements of the National Bridge Inspection Standards (NBIS).

The SHVs have the potential to create higher loading effects, and thus result in lower load ratings for certain bridges, especially those with a shorter span. SHVs are newer closely-spaced multi-axle single unit trucks such as dump trucks, construction vehicles, and solid waste trucks.

Load rating practices are being updated with these new requirements to better evaluate the structural capacity of bridges to account for modern trucking configurations being utilized by many industries.

Public Works coordinated efforts with KPFF on call Structural Engineering Consultants to identify bridges within our inventory that require SHV load ratings. This resulted in 48 bridges with load ratings to be completed by December 31, 2017 and 52 bridges to be completed by December 31, 2022.

Public Works has negotiated a Task Order with KPFF to complete the first round of load ratings to comply with the December 31, 2017 deadline in order to stay compliant with the National Bridge Inspection Standards. The total cost for these efforts is not to exceed \$99,259.

Additionally, a new guideline for load rating structures for Emergency vehicles was deployed November 3rd, 2016. All future load ratings will include these design vehicles. Public Works recently received its first load rating including these emergency vehicles and was required to post a load restriction for emergency vehicles on Railroad Street in Easton. There is concern that more County owned

bridges may be required to be posted with load restrictions for emergency vehicles.

The Emergency vehicle load ratings are required to be completed prior to December 31st, 2019. It is anticipated that Public Works will proactively seek to complete the SHVs due in 2022 within the 2018 and 2019 budget cycle in order to load rate all bridges for both SHVs and emergency vehicles during one effort within the most restrictive timeframe.

- INTERACTION:** Public Works
- RECOMMENDATION:** Move to approve the Chairman's Signature on Formal Task Order Document Number 004 with KPFF Consulting Engineers
- HANDLING:** Return one (1) copy to Public Works
- ATTACHMENTS:** Formal Task Order Document Number 004
- LEAD STAFF:** Lucas Huck, County Engineer

**BOARD OF COUNTY COMMISSIONERS
COUNTY OF KITTITAS
STATE OF WASHINGTON**

RESOLUTION NO. 2017 - _____

**TO AUTHORIZE THE CHAIRMAN'S SIGNATURE ON FORMAL TASK
ORDER DOCUMENT NUMBER 004 WITH KPFF CONSULTING ENGINEERS**

WHEREAS: The Federal Highway Administration (FHWA) issued a memo on November 15, 2013 clarifying FHWA's position on the analysis of Specialized Hauling Vehicles (SHVs) during bridge load ratings to comply with the requirements of the National Bridge Inspection Standards (NBIS); and

WHEREAS: Kittitas County Public Works coordinated efforts with KPFF on call Structural Engineering Consultants to identify bridges within our inventory that require SHV load ratings; and

WHEREAS: FHWA established timelines to perform the associated load ratings resulting in Kittitas County Public Works having 48 bridges with load ratings to be completed by December 31, 2017 and 52 bridges to be completed by December 31, 2022; and

WHEREAS: Kittitas County Public Works negotiated Task Order Number 004 with KPFF Consulting Engineers to perform the required load rating efforts for the 48 bridges prior to the December 31, 2017 deadline to maintain compliance with NBIS; and

NOW, THEREFORE BE IT RESOLVED that the Board of County Commissioners, in the best interest of the public, does hereby authorize the Chairman's signature on Task Order Document Number 004 with KPFF Consulting Engineers, as attached.

DATED on this 20th day of June, 2017, at Ellensburg, Washington.

BOARD OF COUNTY
COMMISSIONERS
KITTITAS COUNTY, WASHINGTON

Paul Jewell, Chairman

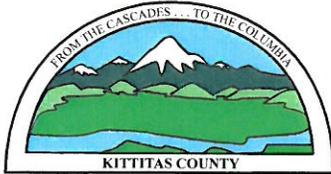
Laura Osiadacz, Vice-Chairman

Obie O'Brien, Commissioner

Attest:

Clerk of the Board- Julie Kjorsvik

Deputy Clerk of the Board- Mandy Buchholz



KITTITAS COUNTY
DEPARTMENT OF PUBLIC WORKS

Formal Task Order Document

(KPF)F)

Task Order Number 004

Maximum Amount Payable \$99,259 Completion Date 12/31/2017

The general provisions and clauses of Local Agency Agreement Number (KCPW 2017-19ENG2) shall be in full force and effect for this Task Order.

Location of Project: All Kittitas County Bridges

Project Title: SHV Load Ratings

Description of Work: In accordance with FHWA direction for Load Rating of Specialized Hauling Vehicles (SHV), Kittitas County is required by Federal and State mandates to update existing bridge load ratings records with SHV load ratings on the appropriate schedule. The Consultant in Task Order 3 reviewed the County's bridge inventory and identified which bridges require updated load ratings by 12/31/17 and which ones need updated load ratings by 12/31/2022 using the WSDOT Load Rating Flow Chart for Specialized Hauling Vehicles (Feb 2014). The Consultant concluded that the County has a total of 114 NBIS bridges which are longer than 20 feet and thus are required to have a documented load rating analysis or report on file. Forty-eight (48) of these bridges have been determined to require updated load ratings in 2017. Thirty-six (36) of these will receive an *Administrative Load Rating* and twelve (12) will be a *Calculated Load Rating*. A summary of the Task 3 effort is attached for reference.

A Calculated Load Rating is a load rating analysis in which sufficient structural details regarding the primary superstructure components can be gleaned from either field measurements or historical documents, such as bridge plans or calculations, to support direct and accurate structural analysis and capacity determinations. The bridge's current condition is considered in the capacity reduction factor. Calculated load ratings will follow procedures in the WSDOT BDM and AASHTO MBE. Each bridge will receive a site visit by the Engineer to ensure the documented condition in the Inspection Report conforms to the condition today based on the opinion of the Load Rating Engineer.

An Administrative Load Rating is performed only on concrete bridges where design, shop, or as-built plans detailing the reinforcement do not exist. Steel and timber bridge structural components can be



KITTITAS COUNTY DEPARTMENT OF PUBLIC WORKS

field measured and thus accurately load rated using industry standard analytical procedures. *The goal of an Administrative Load Rating is to provide the County with a Load Rating report for a bridge in which calculations cannot be performed without extensive research regarding the structural details of the bridge reinforcement and concrete strength.* Since calculations cannot be performed, the engineer will rely on the material found addressing the bridge's history, including dates of construction, relevant design codes of that period, truck live load historical patterns of use, and level of distress as evaluated by the Consultant during the *Site Visit*. The Consultant will also review previous Bridge Inspection Reports, and repair/ retrofit records as made available to the Consultant by the County. The Consultant will, based on evaluation of the accumulated data, make a judgment regarding the capacity of the bridge to sustain current Legal Loads, the Notational Truck Load, and Specialized Hauling Vehicle Loads.

Administrative Load Ratings will follow the procedures established in Section 5.02 C of the WSDOT Bridge Inspection Manual. These procedures are based on field evaluation and documented engineering judgment.

A site visit will occur for each bridge to be load rated. This site visit is not an inspection; rather it is an opportunity for the Engineer to field verify conclusions from the last Bridge Inspection and to arrive at a consensus regarding how well the bridge has performed over the course of its service life. The Site visit evaluation will be performed by two licensed engineers who are also *WSDOT Certified Bridge Inspectors* with many years of design, load rating, and inspection experience. In general, rating factors for the SHV and AASHTO legal trucks will be determined by the ratio of moment demands of the legal trucks compared to the design truck or assumed design truck based on the historical documents.

A signed Load Rating Summary sheet will be provided for each bridge along with a memo that will include photos, recent inspection report, calculations (if applicable).

In addition:

- *Assume all updates to WSBIS will be completed by County.*
- *County to determine if any bridges shall be load rated for Emergency Vehicles and provide any additional truck axle configurations to be rated.*

Cost Breakdown: See attached.

Agency Signature: _____

Date: _____

Consultant Signature: _____

Thomas H. White

Date: 06/07/17

CONSULTANT LINE ITEM COST ESTIMATE WORK SHEET

						KPF CONSULTING ENGINEERS						
LOAD RATINGS		Average Per Bridge (Project Eng)				ENGINEERING ESTIMATED HOURS						KPFF
TASK 4		no. of bridges	data collection & Review	Site visit	Analysis & Report	Project Manager (T. Whiteman)	Technical Specialist (T. Whiteman)	Senior Engineer (M. Frymoyer)	Design Engineer (A. Ashour)	CAD Tech (Staff)	Project Administrator (A. Fernando)	MULTIPLIER
ITEM	SCOPE OF WORK					67.51	67.51	41.00	34.27	39.00	25.00	2.61
Management												
Project Management												
	Contract Compliance					4						705.54
	Client Communications					8		4				1839.56
	General Management					30						5291.54
	Subconsultant Coordination					0						
	Invoicing & Project Summaries					2		2			4.0	828.28
Labor Subtotal:						44.0	0.0	6.0	0.0	0.0	4.0	8664.93
Reimbursables:												
Site Visit												
	Travel : Ellensburg / Seattle RT Assume 3 trips						8.0	12.0	4.0			3054.69
	Administrative LR Travel: Includes travel time between bridges	36.00	1.0	1			36.0	72.0				14062.60
	Calculated - LR, field measures for culverts	6.00		1.50				9.0	9.0			1769.93
	Calculated - LR site assement	6.00		1.00				6.0	6.0			1179.96
Labor Subtotal:						0.0	44.0	99.0	19.0	0.0	0.0	20067.18
Reimbursables:												
LOAD RATING - 2017												
1.00	ADMINISTRATIVE											
	Bridges	36			4.00		36.0	144.0				21775.35
	Culverts	0			4.00		0.0	0.0				
2.00	UPDATE BRIDGES WITH SHV - CALCULATED											
	Concrete Slab (88263) Concrete Channel (88082)	2	1.00		32.00		2.0	16.0	66.0			7976.22
	Concrete and Pre-stressed (78041)	1	1.00		48.00		1.0	12.0	49.0			5849.20
	Pre-stressed (88322, 87244, 16203)	2	1.00		32.00		2.0	16.0	66.0			7976.22
	Corrugated Arch Culverts (78021, 79301, 70141, 78112, 70091, 88261)	6	1.00		24.00		6.0	36.0	150.0			18345.37
	Steel Pre-fab Girder (68161 - Big R)	1	1.00		40.00		1.0	10.0	41.0			4918.65
	Timber	0	1.00		32.00		0.0	0.0	0.0			
3.00												
Labor Subtotal:						0.0	48.0	234.0	372.0	0.0	0.0	66841.01
Reimbursables:												
Labor Sum:						44.00	92.00	339.00	391.00	0.00	4.00	95573.11
Management Reseve:												1500.00
Reimbursable Sum:												2186.20
												\$ 99,259

Load Rating for Specialized Hauling Vehicles (SHV)
 Kittitas County, WA

KPFF

Values from SHV flow chart to determine group:

NRL	1
Shortest Span	20 ft
Type 3	33 tons
Type 3S2	47 tons
Type 3-3	52 tons
LRFR (All Types)	1.3

SHV Group	Total < 20 ft.
Bridges in Group 1: To be rated by December 2017	48 0 0
Bridges in Group 2: To be rated by December 2022	52 0
Bridges in Group 3: Does not need updated rating for NRL/SHV	14 N/A
Bridges TBD:	0
Total Bridges:	114

Kittitas Co. to provide load rating information

Bridge No.	ID.	Name	NRL LR?	Shortest Span Length	Total Bridge Length	Longest Span Length	Material	Date of Last Load Rating	Method of Last Load Rating (ASR / LFR / LRFR)	ASR/LFR Operating Tonnages			LRFR Legal Load Rating Factors			KPFF Group No.	Site Visit/ Analysis	Notes
										Type 3	Type 3S2	Type 3-3	Type 3	Type 3S2	Type 3-3			
1	89091	08099500	Naneum Rd over Hilline Canal	N	23.38	46.8		2003	ASR/LFR	25	36	48.6				1	Fall 2017	Administrative
2	79144	08174700	Denmark Road	N				2011								1	Summer 2017	Administrative
3	80181	08231600	Cooke Canyon Rd	N	43	42	concrete	2011								1	Fall 2017	Administrative
4	88282	08375800	Dry Cr. Connection over Flood Channel	N	75	24	concrete	2011								1	Fall 2017	Administrative
5	98281	08382300	L GREEN CAN RD-HILINE CA	N	53	19	concrete	2011								1	Fall 2017	Administrative
6	89022	07990200	Fairview Rd over Hilline Canal	N	48	46	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
7	60031	08000800	Morrison Rd over Gravity Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
8	60042	08014800	Morrison Rd over Turbine Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
9	60043	08014900	Ditchbank Rd over Turbine Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
10	89041	08015100	Bar 14 Rd over Naneum Creek	N				1994								1	Summer 2017	Non-Calculated Evaluation
11	87052	08031800	Taneum Rd over Hilline Spillway	N	43	41	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
12	88061	08040800	Howard Rd over Dry Creek	N	24			1994								1	Summer 2017	Non-Calculated Evaluation
13	79061	08041500	Third Ave over Towne Ditch	N				1994								1	Fall 2017	Non-Calculated Evaluation
14	78071	08058100	Cove Rd over Manastash Creek	N				1994								1	Summer 2017	Non-Calculated Evaluation
15	60083	08077000	Katen Rd over Turbine Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
16	60091	08088700	Ross Rd over Turbine Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
17	7101	08103700	Liberty Rd over Swauk Creek	N	40	38	concrete	1994								1	Summer 2017	Non-Calculated Evaluation
18	89113	08123300	Scheby Rd over Hilline Canal	N	48	46	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
19	89123	08141800	Schneby Rd over Coleman Creek	N	24	24	concrete	1994								1	Summer 2017	Non-Calculated Evaluation
20	89131	08152800	Cooke Rd over Hilline Canal	N	47	24	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
21	79132	08154200	Badger Pocket Rd over Parke Crk	N				1994								1	Summer 2017	Non-Calculated Evaluation
22	87131	08162000	Thorp Hwy over Westside Ditch	N				1994								1	Fall 2017	Non-Calculated Evaluation
23	76131	08163500	Manastash Rd over Manastash Crk	N	32			1994								1	Fall 2017	Non-Calculated Evaluation
24	79141	08178800	Tjossem Rd over Towne Ditch	N	44	26	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
25	80171	08214700	Colockum Rd over Hilline Canal	N				1994								1	Summer 2017	Non-Calculated Evaluation
26	88201	08263000	McManamy Rd over Dry Creek	N				1994								1	Fall 2017	Non-Calculated Evaluation
27	88212	08282100	Faust Rd over Towne Ditch	N				1994								1	Fall 2017	Non-Calculated Evaluation
28	98262	08346900	Evans Rd over Hilline Canal	N				1994								1	Fall 2017	Non-Calculated Evaluation
29	88265	08348800	Church Rd over Hilline Canal	N	53	51	concrete	1994								1	Fall 2017	Non-Calculated Evaluation
30	88272	08365200	Dry Creek Rd over Currier Creek	N				1994								1	Summer 2017	Non-Calculated Evaluation

Bridge No.	Bridge ID.		Name	NRL LR?	NRL No.	Shortest Span Length	Total Bridge Length	Longest Span Length	Material	Date of Last Load Rating	Method of Last Load Rating (ASR / LFR / LRFR)	ASR/LFR Operating Tonnages			LRFR Legal Load Rating Factors			KPPF Group No.	Site Visit/ Analysis	Notes	
	Type	Type										tons	Type	Type	Type	Type	Type				Type
31	98271	08370200	Reecer Cr. Rd over Hilline Canal	N			56	32	concrete	1994									1	Fall 2017	Non-Calculated Evaluation
32	89321	08433400	Wilson Creek Rd over Cascade Canal	N						1994									1	Fall 2017	Non-Calculated Evaluation
33	99325	08434800	Thomas Rd over Naneum Creek	N						1994									1	Summer 2017	Non-Calculated Evaluation
34	70331	08452500	4th Parallel Rd over Turbine Canal	N						1994									1	Fall 2017	Non-Calculated Evaluation
35	70231	08596400	Boylston over Ground Relief	N			145	32	concrete	1994									1	Summer 2017	Non-Calculated Evaluation
36	4281	08632300	Storie Lane over Little Creek	N			50	44	concrete	1994									1	Summer 2017	Non-Calculated Evaluation
1	70141	8623200	STEVENS RD CULVERTS																1	Arch - Calc.	No load rating summary sheet
2	78021	08622900	Anderson Road				25	23	Steel										1	Arch - Calc.	No load rating, generic notes
3	79301	08623000	Ringer Road Culverts				22	22	Steel	2001									1	Arch - Calc.	No load rating, generic notes
4	70091	08623100	Parke Creek Multiplate				23	23	Steel	2001									1	Arch - Calc.	No load rating, generic notes
5	78112	08673000	Umptanum Rd over Anderson Slough				68	24	Iron/Alum	2001									1	Arch - Calc.	No load rating, generic notes
6	88261	08742300	Bowers Rd over Whiskey Creek				22	22	Steel	2001									1	Arch - Calc.	No load rating, generic notes
1	78041	08012900	Brown Rd over Manastash Canal	N						1994	LRFR								1	Calc.	
2	88022	08073400	Clarke Rd	N		30	32			1999	ASR/LFR	25	40	40.7				1	Calc.		
3	16203	08271500	N. Fork Teanaway Rd	N						1994	LRFR								1	Calc.	
4	68161	08863700	Durr Road, Wenas WLA	N			60	56	Steel	2014									1	Calculate	No load rating, generic notes
5	88283	08377700	Dry Creek Rd over Carrier Creek	N						1994	LRFR								1	Calc.	
6	88322	08434200	Weaver Rd over Westside Ditch	N						1994	LRFR								1	Calc.	
1	97211	08285300	Hayward Rd over Hilline Canal	N						2002	ASR/LFR	72.9	108.9	144					2	2022	
2	4272	00070168	Hundley Road	N						1996	LRFR								2	2022	
3	79011	07966000	No. 81 Rd over Cooke Creek	N		24	24			1994	LRFR								2	2022	
4	95011	07971500	Upper Peoh Pt. Road	N						1994	LRFR								2	2022	
5	95021	07985000	Upper Peoh Pt. Road	N						1994	LRFR								2	2022	
6	94021	07988600	W Sparks Rd - Kachess River	N						1994	LRFR								2	2022	
7	95031	07998200	Mohar Road	N						1994	LRFR								2	2022	
8	3031	7998800	W SPARKS RD-KACHESS RIV							1994	LRFR								2	2022	
9	87051	08030600	Taneum Rd over Taneum Creek	N						1994	LRFR								2	2022	
10	89052	08031400	Wilson Creek Rd over Hilline Cnl	N						1994	LRFR								2	2022	
11	95061	08047200	Westside Rd over Hilline Canal	N						1994	LRFR								2	2022	
12	6061	08051800	Teanaway Rd over Teanaway Rvr	N			136			1994	LRFR								2	2022	
13	96082	08082300	Upper Peoh Rd over Hilline Canal	N						1994	LRFR								2	2022	
14	96091	08100100	Upper Peoh Rd over Hilline Canal	N						1994	LRFR								2	2022	
15	78102	08109800	Umptanum Rd over Yakima River	N			306			1994	LRFR								2	2022	
16	70111	08127900	Stevens Road	N						1996	ASR/LFR	43.1	54.5	62.3					2	2022	
17	96111	08132600	Thorp Prairie over Hilline Canal	N						1994	ASR/LFR	37.8	48.2	55.2					2	2022	
18	78131	08150900	Tjossem Rd over Wilson Creek	N						1994	LRFR								2	2022	
19	78132	08158900	Canyon Rd over Wilson Creek	N		20	80			2003	ASR/LFR	39.1	62.7	77.1					2	2022	
20	77141	08174600	Manastash Rd over Manastash Crk	N						1994	LRFR								2	2022	

Bridge No.	ID.	Name	NRL LR?	NRL No.	Shortest Span Length	Total Bridge Length	Longest Span Length	Material	Date of Last Load Rating	Method of Last Load Rating	ASR/LFR Operating Tonnages			LRFR Legal Load Rating Factors			KPF Group No.	Site Visit/ Analysis	Notes
											Type	Type	tons	Type	Type	tons			
21	63181	08240000 Johnson Canyon Rd	N						1995	LRFR				1.42	1.54	1.73	2	2022	
22	79222	08294500 S. Ferguson Road	N	35	36.5				1995	ASR/LFR	67.1	108.5	132				2	2022	
23	97251	08330400 Smithson Road - Dry Creek	N	26.0	26.0				2010	LRFR				2.31	2.45	2.81	2	2022	
24	62511	08338800 E. Masterson Rd over Teanaway River	N		150				1994	LRFR				1.95	1.63	1.63	2	2022	
25	88273	08359200 Reece Cr. Rd over Towne Ditch	N	28.4	30				2003	ASR/LFR	46.1	67.6	89.5				2	2022	
26	52711	08360500 S. Cle Elum Rd	N	80	362				2004	ASR/LFR	57.5	80.6	92				2	2022	
27	80281	08377000 Christensen Road	N						1994	LRFR				2.42	2.54	2.98	2	2022	
28	88292	08388200 Robinson Canyon Rd over Light Ditch	N						1994	LRFR				1.41	1.52	1.72	2	2022	
29	79291	08388300 Thrall Rd over Cherry Creek	N		189				1994	LRFR				2.61	2.44	2.79	2	2022	
30	88291	08394500 Thorp Hwy over Light Ditch	N						1994	LRFR				2.88	3.04	3.58	2	2022	
31	5301	08407900 Bullfrog Rd over Cle Elum River	N		194				2004	ASR/LFR	52.5	54.7	57.6				2	2022	
32	97311	08422200 Thorp Prairie Bridge	N						1994	LRFR				2.71	2.51	2.69	2	2022	
33	88333	08443300 Damman Rd over Yakima River	N		434				1994	LRFR				4.04	2.87	2.64	2	2022	
34	88341	08456400 BNRR Crossing over Cascade Way	N						1994	LRFR				2.29	2.25	2.48	2	2022	
35	80341	08458900 Parke Creek Rd over Hilline Canal	N						1994	LRFR				2.14	2.30	2.58	2	2022	
36	6345	08459600 Lambert Rd over Teanaway River	N		120				1994	LRFR				2.35	1.86	1.82	2	2022	
37	80344	08465900 Vantage Hwy over Hilline Canal	N						1994	LRFR				2.23	2.42	2.68	2	2022	
38	89342	08466600 Vantage Hwy over Cascade Canal	N	20.5	24				2003	ASR/LFR	36.9	58.3	71.7				2	2022	
39	97341	08468600 Yakima River Bridge	N		270				2009	ASR/LFR	46.0	64.4	68.4				2	2022	
40	4351	08479900 Westside Rd over Hilline Canal	N						1994	LRFR				1.80	1.59	1.71	2	2022	
41	7271	08632400 Burke Rd Bridge Reconstruction	N						1996	ASR/LFR	48.5	64.8	77.6				2	2022	
42	96071	08642000 Markovich Rd over Hilline Canal	N						2000	ASR/LFR	71.3	88.6	100				2	2022	
43	60092	08674600 Boriland Bridge	N	31.83	32.7				2002	ASR/LFR	58	84.6	111				2	2022	
44	88221	08674700 Reece Cr. Rd over Currier Creek	N	30	31.7				2003	ASR/LFR	47.6	71.1	94.1				2	2022	
45	88223	08674800 Reece Cr. Rd over Currier Creek	N	25	26.7				2003	ASR/LFR	44.5	68.3	86.4				2	2022	
46	88222	08674900 Reece Cr. Rd over Currier Creek	N	30	31.7				2003	ASR/LFR	53	79.3	105				2	2022	
47	88153	08675000 Hungry Jct Rd over Currier Creek	N	30	31.7				2003	ASR/LFR	48.9	73.2	96.7				2	2022	
48	79133	08710100 Cleman Bridge	N	54.5	57.5				2004	ASR/LFR	56.9	83.4	102				2	2022	
49	89053	08758200 Bar 14 Rd Bridge over Hilline Creek	N		119				2007	ASR/LFR	62.5	92.9	116				2	2022	
50	99201	08772200 Naneum Rd over Naneum Creek	N		55				2008	ASR/LFR	61.5	94.3	112				2	2022	
51	98288	08804800 Charlton Rd over Naneum Creek	N		55				2009	ASR/LFR	54.5	104.0	124				2	2022	
52	5012	08804900 West Fork over Teanaway Rd	N		105.3				2009	ASR/LFR	78.8	98.6	160				2	2022	
1	89301	08405900 Sanders Rd over Wilson Creek	Y	0.99					2013								3		NRL < 1.0; No SHV rating
2	87053	08033700 Thorp Cerr Rd over Taneum Crk	Y	1.98	108.3				2013								3		
3	70083	08073600 Prater Rd over Parke Creek	Y	1.83	129				2013								3		
4	3112	08123400 Railroad St over Yakima River	Y	1.25	200				2013								3		
5	70232	08313800 Stevens Rd over Johnson Creek	Y	1.16	70				2011								3		
6	16081	08805100 Jack Creek Culvert	Y	1.74	22				2011								3		
7	79242	08827800 Badger Pocket Rd Ditch	Y	1.01	25.7				2011								3		
8	99302	08832800 Cooke Can Rd over Cooke Creek	Y	1.18	51				2011								3		
9	4273	08850000 Little Creek Bridge	Y	1.66	48				2012								3		

