



SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

2020 ANNUAL BRIDGE REPORT



Skagit River Marblemount Bridge, est. 1930

SUBMITTED FEBRUARY, 2020

SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

2020 BRIDGE REPORT

Submitted: March 2021

This bridge report is prepared annually by the Transportation Programs Section of Skagit County Public Works' Engineering Division to fulfill 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."

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ACRONYMS

The following are a list of common acronyms widely used in the Bridge Inspection field:

ADT	Average Daily Traffic
BIRM	Bridge Inspection Reference Manual
BRAC	Bridge Replacement Advisory Committee
CFR	Code of Federal Regulations
FHWA	Federal Highway Administration
FO	Functionally Obsolete
HBRRP	Highway Bridge Replacement and Rehabilitation Program
NBIS	National Bridge Inventory System
RCW	Revised Code of Washington
SHV	Specialized Haul Vehicle
SD	Structurally Deficient
SID	Structure Identification Number
SR	Sufficiency Rating
UBIT	Under-Bridge Inspection Truck
WAC	Washington Administrative Code
WSBIM	Washington State Bridge Inspection Manual
WSBIS	Washington State Bridge Inventory System
WSDOT	Washington State Department of Transportation
TIP	Transportation Improvement Program



North Fork Bridge, west of Conway (Best Road)

EXECUTIVE SUMMARY

The 2020 Annual Bridge Report complies with WAC 136-20-060, which requires that each County Engineer furnish a written resume of the findings of the previous year's inspection effort. This report summarizes Skagit County's bridge inspection program, focusing on the Engineer's recommendations as to replacement, rehabilitation, repair, and load restrictions on the County's deficient bridges. This makes the Annual Bridge Report an important resource in the preparation of the Six Year Transportation Improvement Program and other short and long-term planning tools. Bridge replacement, rehabilitation, and repair projects are prioritized by a rating system that is based on a combination of factors including, but not limited to, structural deficiency, functional obsolescence, sufficiency rating, ADT, safety factors, accident history, and funding availability.

To qualify as a Structurally Deficient (SD) bridge, an element of the bridge must have a condition rating of 4 (Poor Condition) or less in one of the following elements: deck, superstructure, substructure, culvert and retaining walls, or have an appraisal rating of 2 or less of the structural evaluation or waterway adequacy.

To qualify as a Functionally Obsolete (FO) bridge, an appraisal rating of 3 or worse must be given for deck geometry, under clearance, approach roadway alignment, structural evaluation, or waterway adequacy. FO is a legacy classification and FHWA is no longer tracking this measure.

There are four goals the report strives to attain:

1. Provide inspection findings ensuring safe use by the public.
2. Present proactive maintenance recommendations for maximizing the life of County assets.
3. Identify bridges that may need to be replaced or rehabilitated.
4. Satisfy the reporting requirements set forth by other government agencies.



Dalles Bridge near Concrete (Concrete-Sauk Valley Road)

HIGHLIGHTS from this bridge inspection season include:

- 66 bridge inspections were performed in Skagit County.
 - 53 routine inspections performed on Skagit County bridges
 - 3 routine inspections performed for local agencies including 2 new bridges in Sedro Woolley that were inventoried this year.
 - 10 routine and fracture critical inspections performed by the Washington State Bridge Preservation Office.
 - A Special Inspection was performed on the Upper Finney Creek Bridge using Whatcom County's Hydro-Platform to get a closer look at possible girder damage.



Whatcom Co Hydro-Platform on Finney Cr Bridge

- Design phase commenced on Upper Finney Creek Seismic Retrofit and Strengthening Project. The proposed work includes a seismic retrofit, making the bridge more resistant to earthquake damage, while also increasing its overall strength and load capacity. Skagit County was awarded \$3,000,000 in Federal Local Bridge Program funds for this project.
- The Guemes Island Ferry Dock underwent a series of repairs and removed from the Structurally Deficient List. The sufficiency rating increased from 24.1 to 50.2 (see page 14 for more information).
- The Skagit River Marblemount Bridge was re-load rated and concluded that the bridge needs to be restricted to a maximum 23 Ton load for all truck types. This would prevent any type of logging or tractor/trailer type truck from crossing and result in a 20 Mile detour. The County was able to avoid load restricting the bridge by making it a one-lane, two-way bridge.



Marblemount Bridge – Skagit River

BRIDGE INVENTORY

Skagit County Road Bridges:

As of December 31, 2020, Skagit County has 110 bridges in the National Bridge Inventory System (NBIS).

- The current inventory consists of:
 - 5 culverts (2 corrugated metal, 3 concrete)
 - 2 predominately timber bridges
 - 11 predominately steel bridges
 - 92 predominately concrete bridges
- 12 of the 110 bridges are “High Cost Inspections” requiring special inspection needs
- 8 of the 12 “High Cost Inspection” bridges are fracture critical
- Skagit County has 16 Functionally Obsolete bridges – these bridges no longer meet the standard for either roadway design or waterway adequacy.
- Skagit County also has 4 structurally deficient bridges (See Table 1).

TABLE 1

BRIDGE NUMBER	BRIDGE NAME	DEFICIENCY	FUNDING STATUS
40152	ANACORTES FERRY DOCK	Girder Condition	Fully funded, Ferry Prog/ local match – Construction in 2021
40113	OLD HWY 99 at THOMAS CK	Deck/Substructure	Applying for Replacement in 2021 Call
40070	SKAGIT RIVER MARBLEMOUNT	Superstructure	Eligible for Replacement and/or Rehab, 2023 Call
40029	BAY VIEW-EDISON at JOE LEARY	Deck	Applying for Deck Repair in 2021 Call

To see a full listing of the Skagit County Bridge Inventory and their statistics, please refer to “Appendix A – Bridge Inventory”.

High Cost and Fracture Critical Bridges:

Skagit County currently has 12 structures that require specific access assistance, equipment and professional services during the inspection process. We refer to these inspections as “high cost inspections” that typically involve three types of special inspection: (1) **Under-Bridge Inspection Truck (UBIT)** is required for bridges that cannot be given an adequate visual inspection from the ground. (2) Steel bridges with **Fracture Critical Members (FCM)** may require special inspection equipment. (3) Underwater inspections involve divers for bridges with piers that extend below ordinary low-water levels.

Skagit County contracts with the State Bridge Preservation Office (BPO) to perform our high cost type inspections. In 2020, ten bridges were inspected by BPO and two local agency bridges scheduled for 2021. See “Appendix B – Routine & Special Inspection Schedule” for details on inspection frequencies and schedules for all of our UBIT and special bridge inspections).

Overweight Loads & Load Restricted Bridges:

The North Fork Bridge is a popular recipient of overweight loads with its location on a major freight route. Due to the bridges' fracture critical status and deficiencies, all overweight load permits are reviewed on a case by case basis. County staff (along with contracted consultants) review axle loading, number of axles, and spacing, and how the load is distributed among those axles to determine if the load is safe to cross any bridges located along the route.



Example of a super-load that requires bridge loading analysis.

In 2020, we approved 42 Oversized/Overweight Permit applications; 9 of which required review of the load weight over our bridges. New software was acquired in 2016 to help evaluate overweight loads on some of our simple span concrete bridges and reduce the need for outside consultant help.

The Upper Finney Creek Bridge was damaged in 2012 due to a suspected overweight load crossing the bridge. A shear crack was found in one of the two girders at the mid-span of the bridge. The bridge girder was repaired and re-opened to traffic but remains restricted to loads of no greater than 60,000 LBS or 30 tons. (see page 14)



Example of a specialized hauling vehicle

In 2017, WSDOT introduced new load posting requirements issued by FHWA regarding the load rating and posting of Specialized Hauling Vehicles (SHV) and Emergency Vehicles for bridges contained in the National Bridge Inventory. SHVs, also known as Single Unit Vehicles (SUV), are trucks without trailer with multi-closely spaced axles such as dump trucks, construction vehicles, and hauling trucks introduced during the last decade. There are four SHV trucks, SU4 to SU7 (Single Unit 4 axles to Single Unit 7 axles).

FHWA determined that two emergency vehicle configurations, EV2 and EV3, produce load effects in bridges that envelop the effects resulting from typical emergency vehicles that are covered by the Fixing America's Surface Transportation Act (FAST Act) (Pub. L. 114-94). Due to all these new vehicle configurations, FHWA has mandated that all NBI bridges be load rated again to analyze these vehicle types. Depending on the current load capacity, NBI bridges were divided into two categories: Category 1 consists of bridges that have a Type 3 Vehicle Rating Factor of less than 1.3. Skagit County identified 28 bridges that required immediate re-rating, which have been completed. Category 2 bridges include all bridges not in Category 1 and are required to be rerated by the end of 2022. The remaining Category 2 bridges will be prioritized by the load rating factor from lowest to highest and spread out over the next 2 years to minimize cost impacts to the budget.

All 28 Category 1 bridges have been rerated for the SHV's with the following bridges being identified to having not met the legal load limits of the new SHV design loads (See Table 2).

TABLE 2

LOAD RESTRICTIONS											
Bridge #	Bridge Name	AASHTO TRUCKS - 1,2,3			SU4 27T	SU5 31T	SU6 34.7T	SU7 38.7T	EV2 28.7T	EV3 43T	POSTED Y/N
		25T	36T	40T							
40001	Lake View Blvd at Nookachamps									36.6	N
40008	South Fork Bridge							27.3	37.0		Y
40039	Rainbow Bridge				29.4	30.5	32.5	27.3	28.0		
40047	Lake Cavanaugh at Pilchuck						32.3	33.3	22.1	31.8	Y
40063	Lyman Hwy at Childs Ck						33.0	34.8		30.5	Y
40070	Skagit River Marblemount	23.8	24.8	24.4	23.5	23.6	24.0	24.0	23.5	23.7	N*
40090	Dalles Bridge		30.6	38.0		29.3	30.1	33.1		35.7	
40099	Government Bridge	24.0			22.6	23.8	23.9	24.8	24.1	23.2	
40114	Samish River Bridge					29.0	32.0	34.0	26.0	27.0	Y
40115	Friday Ck Bridge						31.3	32.2	25.0	31.0	Y
40130	Lyman Hwy at Red Cabin Ck									32.7	N
40131	Lyman Hwy at Mannser Ck				25.1	27.0	27.4	28.3	27.6	27.1	Y
40132	Lyman Hwy at Jones Ck				22.1	23.9	24.3	25.5	24.1	24.1	Y
40152	Anacortes Ferry Dock									37.4	N
40153	Guemes Island Ferry Dock									37.4	N

* - Traffic revision instituted instead of posting for load restriction(s)

NOTE: Bridges with EV restrictions were not posted if located greater than 1 mile from an Interstate.

Height Restricted Bridges:

Steel Truss Bridges all have sway bracing across the top which creates a vertical limitation to vehicles traveling over the bridge. Below is a list of bridges that have this limitation with a vertical measurement which helps when reviewing the route of an oversized load application. Skagit County crews have also posted the height restriction on two of the bridges that are near or below legal height (See Table 3).



Samish River Bridge - Vertical Clearance Signage

TABLE 3

Vertical Clearances / Restrictions			
Bridge Number	Bridge Name	Vertical Measurement	Posted Clearance
40114	SAMISH RIVER BRIDGE	14' 06"	14' 3"
40152	ANACORTES FERRY DOCK	16' 00"	
40153	GUEMES ISLAND FERRY DOCK	16' 00"	
40090	DALLES BRIDGE	16' 01"	15' 10"
40039	RAINBOW BRIDGE	16' 07"	
40070	SKAGIT RIVER MARBLEMOUNT	17' 09"	
40099	GOVERNMENT BRIDGE	18' 00"	

Local Agency Bridges:

Skagit County Public Works provides inspection services to cities and towns on a reimbursable basis. The County works with the local agencies under agreement conditions set forth in RCW Chapter 39.34, the Interlocal Cooperation Act. The County's services are provided primarily to cities that lack resources and expertise to inspect and maintain their bridge inventory. Currently, the County provides routine inspection services on 17 local municipality bridges, including 2 bridges in the City of Sedro Woolley that we inventoried for them this last summer.

No. of Local Agency Bridges Served by Skagit County:

- City of Burlington – 2
- Town of Concrete – 1
- City of Mount Vernon – 12
- City of Sedro-Woolley – 2

Short Span Bridges:

Short span bridges are defined as spans that are 20-feet or less in length and over 6-feet for timber structures and over 8-feet for steel and concrete structures. Even though inspection reports and bridge information for short span bridges are not reported to WSDOT or FHWA, Skagit County currently has two short span structures inventoried with plans to add more crossings that meet the short span definition, like Gilligan Creek pictured to the right. Once inventoried, Skagit County can schedule routine inspections and operate these crossings the same as the larger, federally reported bridges in our inventory.



Gilligan Creek crossing (short span) under South Skagit Hwy



Cascade Trail Bridge over Jones Creek

Parks Department Bridges:

Skagit County Parks and Recreation Department has approached Public Works and requested assistance with a growing inventory of pedestrian bridges (24 total). These have been acquired either through new trail construction or by acquisition of abandoned railroad rights-of-way. Due to staffing issues and work load, Public Works has not been able to provide inspection services at this time. Public Works will continue to work with the Parks and Recreation Department to inventory and inspect as staffing and work load allows.

INSPECTION PROGRAM, FINDINGS & RECOMMENDATIONS

Bridge inspections are performed in accordance with the National Bridge Inspection Standards (NBIS) and with 23 CFR 650.3. All bridges inspected to the NBIS in the United States are issued a structure identification number (SID). The standards mandate that all public agencies with a bridge inventory inspect and report the findings at a minimum of once every 24 months (routine inspection). The inspector uses these standards to document the current condition of each bridge element listed. The deficiencies are coded to the NBIS and show degree of deterioration in various elements. The three primary elements are the deck, superstructure, and substructure. As deterioration accelerates, the coding values will drop. Work orders for repairs may be issued. In the case where the coding factors are extremely low, recommendations are made for replacement or rehabilitation. Bridges with identified deficiencies may be inspected or monitored at more frequent intervals.

The results of our inspection program are forwarded on to the Washington State Department of Transportation (WSDOT) Local Programs Office for review. Once the report has been accepted by WSDOT, it is available for the Federal Highway Administration (FHWA) and others to use. A copy of all final inspection reports are kept on file with Skagit County Public Works and available online at www.SkagitCounty.net

There are other factors that go into determining the overall health of a bridge. Sufficiency Rating (SR) is a score calculated based on a multitude of factors that are reviewed by the inspector. The SR is a number from 0 to 100, with 100 being an entirely sufficient bridge, and 0 being an entirely insufficient or deficient bridge, as defined by FHWA. Items that go into the determination of the SR, include load bearing capacity, average daily traffic, availability and length of detour, the geometry of the bridge, and the scour action of bridges passing over a waterway. Only structurally deficient (SD) bridges with a sufficiency rating of less than 40 are eligible for replacement funding. SD bridges with a sufficiency rating of less than 80 are eligible for rehabilitation funding. As of December 31, 2019, the County has four bridges that are eligible for replacement or rehabilitation funding (previously mentioned in Table 1, Pg 7).

The bridge inspection program recognizes that with limited funding, it is important to identify trends that are affecting the deficiencies of our bridge structures, such as age and materials used in construction. Skagit County Public Works will continue to apply for available funds to assist with deficient bridges that are eligible for Federal Highways Bridge Program funds and Surface Transportation Program funds. County bridges not eligible for Federal funds, such as short-span bridges 20-feet in length or less, will have their replacement/rehabilitation needs prioritized by Public Works staff, based on structural deficiency, resource availability, and the Board of Skagit County Commissioners' authorization to fund the project in the Annual Construction Program. Similarly, for maintenance, repair, and minor rehabilitation work, prioritization is based on County bridge maintenance funds and staff availabilities.

This report also documents projects that have been completed, those that are in the current Six Year Transportation Improvement Program, and those bridges that are candidates for future replacement/rehabilitation.

REPLACEMENT, & REHABILITATION PLAN FOR DEFICIENT BRIDGES

The County's current focus is to replace or rehabilitate bridges that are classified as Structurally Deficient per NBIS guidance. We have received, or are currently seeking, funding for a number of bridges that are in need of replacement, rehabilitation and/or resurfacing. The bridges identified below are our current main focus.

REPLACEMENT

Old Hwy 99 at Thomas Creek Bridge #40113

This bridge is considered structurally deficient and has a sufficiency rating of 37.16, making it eligible for replacement funding. The inspection frequency has been increased to every 12 months to better monitor the deterioration and maintain motorist safety along this heavily traveled corridor. We will be applying for replacement funds in the **2021 Local Bridge Program Call for Projects**.



Thomas Creek Bridge – Old Hwy 99 N.

Skagit River Marblemount Bridge #40070

The sufficiency rating dropped from 39.93 to 32.38 after a new load rating was performed, acknowledging minor deterioration in the superstructure and limitations in the gusset plates. The load rating recommends load restrictions for all legal truck types for the bridge. However, load restrictions were avoided by modifying the lane configurations and making it a one-lane two-way bridge. By making it one lane, this allows us to channelize heavy loads into the middle of the bridge, distributing the load more evenly.



Marblemount Bridge – Skagit River

The replacement of this structure may not be economically feasible so a more suitable path forward could include a series of repairs and replacing the gusset plates to strengthen the superstructure and return the bridge to two-lane operation. We will continue looking at ways of strengthening the bridge and propose a solution in time for the **2023 Local Bridge Program Call for Projects**.

REHABILITATION

Upper Finney Creek Bridge #40093

In 2012, we repaired a damaged girder but the bridge still does not have the load carrying capability to handle today's logging industry vehicles. Skagit County has been awarded \$3 Million in grant funds from the Federal Local Bridge Program to perform a seismic retrofit, making the bridge more resistant to earthquake damage, while also increasing its overall strength and load capacity. **The project is currently in design phase and will move into construction late 2021/early 2022.**



Upper Finney Creek Bridge – Finney Creek

Anacortes Ferry Dock #40152

Currently with a sufficiency rating of 24.1, the 3 most eastern girders have advanced deterioration and need to be replaced. These girders are not in the travel way and mostly used for storage. The replacement of the girders is funded by the Federal Ferry Boat Program and County Road funds. This project will go out for construction in **2021**.

Bay View-Edison at Joe Leary #40029

The substructure and superstructure of this bridge is in very good condition (SR 84.90) but the deck is in very bad condition, currently coded a 4 (Poor). This coding of 4 makes the bridge structurally deficient and qualifies for deck repair funding through the Local Bridge Program. We will be applying for funding in the **2021 Call for Projects**.



Bay View-Edison Bridge at Joe Leary Slough

MAINTENANCE AND REPAIRS

The majority of bridge repair and maintenance work is done by County Forces. This includes cleaning, minor painting, deck repairs, and rehabilitation of bridges. The major maintenance projects being worked on now include:

Bridge Maintenance Projects:

South Skagit Hwy at Mill Creek #40086

This bridge continues to be a maintenance problem, continually being blocked by earthen material and woody debris. Recent rain events have caused Mill Creek to meander east and now the majority of the flow is crossing South Skagit Hwy through a nearby cross culvert. The County's Environmental Services was able to remove some material and repair the bank to get a majority of Mill Creek back in its main channel.



Mill Creek Bridge – South Skagit Highway

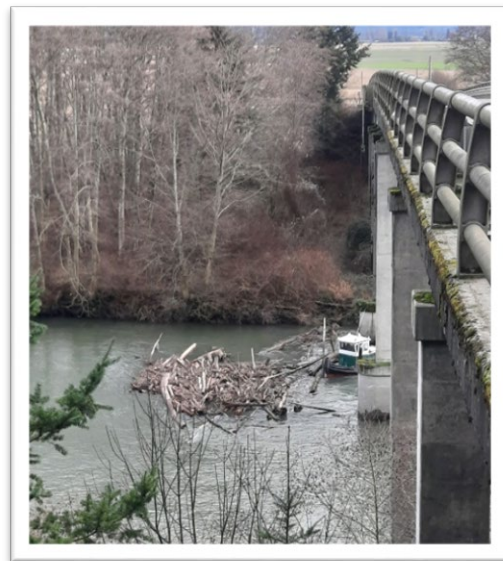
Debris



Old Day Creek Bridge – South Skagit Highway

Debris is an ongoing issue for many of our bridges. To improve crew efficiency and response time, we secured programmatic HPA's a few years ago for clearing debris off problem bridges. Our crews were able to remove the debris at South Skagit Hwy at Day Creek #40081 (*left*) this last summer.

A large raft accumulated at the North Fork Bridge #40037 (*right*), which we were able to clear with the help of Carlson Construction and their mighty little tug boat. In the past, we've utilized the WSDOT Bridge Maintenance crew for debris removal but due to COVID, they were unable to fit it in their schedule.



North Fork Bridge – Best Road



Guemes Island Terminal – Transfer Span

Guemes Island Ferry Dock #40153

This structure underwent a thorough makeover; the transfer span hydraulic lift arms and attachment gussets were rebuilt, repaired the winches and hoist cables, catwalk grating, apron hinge pins, and the apron actuator mounts. This series of repairs increased the sufficiency rating from 24.1 to 50.18 and removed it from the “Structurally Deficient” list.

General Maintenance:

In addition to the above mentioned repairs, Skagit County’s Bridge Crew performs various minor repairs and maintenance throughout the year. These repairs and maintenance include, but are not limited to:

- Patching decks due to spalling or material loss
- Replacing the loss of armor/rock around the abutments
- Repairing bridge rail and guardrail
- Leveling approaches
- Spot painting
- Removal of vegetation encroaching or blocking access to the bridge for inspection purposes
- Replacing damaged or worn signage



Thomas Creek Bridge – Old Hwy 99 N.

Please refer to “Appendix C – Bridge Maintenance List” for a full listing of outstanding and recently completed repairs.

GLOSSARY OF BRIDGE TERMINOLOGY

Abutment—a substructure supporting the end of a single span, or the extreme end of a multi-span super-structure 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.

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 sewing 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.

Culvert—a pipe or small structure used for drainage under a road, railroad or other embankment. A culvert with a span length greater than 20-feet is included in the National Bridge Inventory and receives a rating using the NBI scale.

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

Elastomeric pads—rectangular pads made of neoprene, found between the substructures 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 multi-span 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—these bridges span less than 20 feet, have a single span and are 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 distributes all bridge loads to the ground surface. 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.

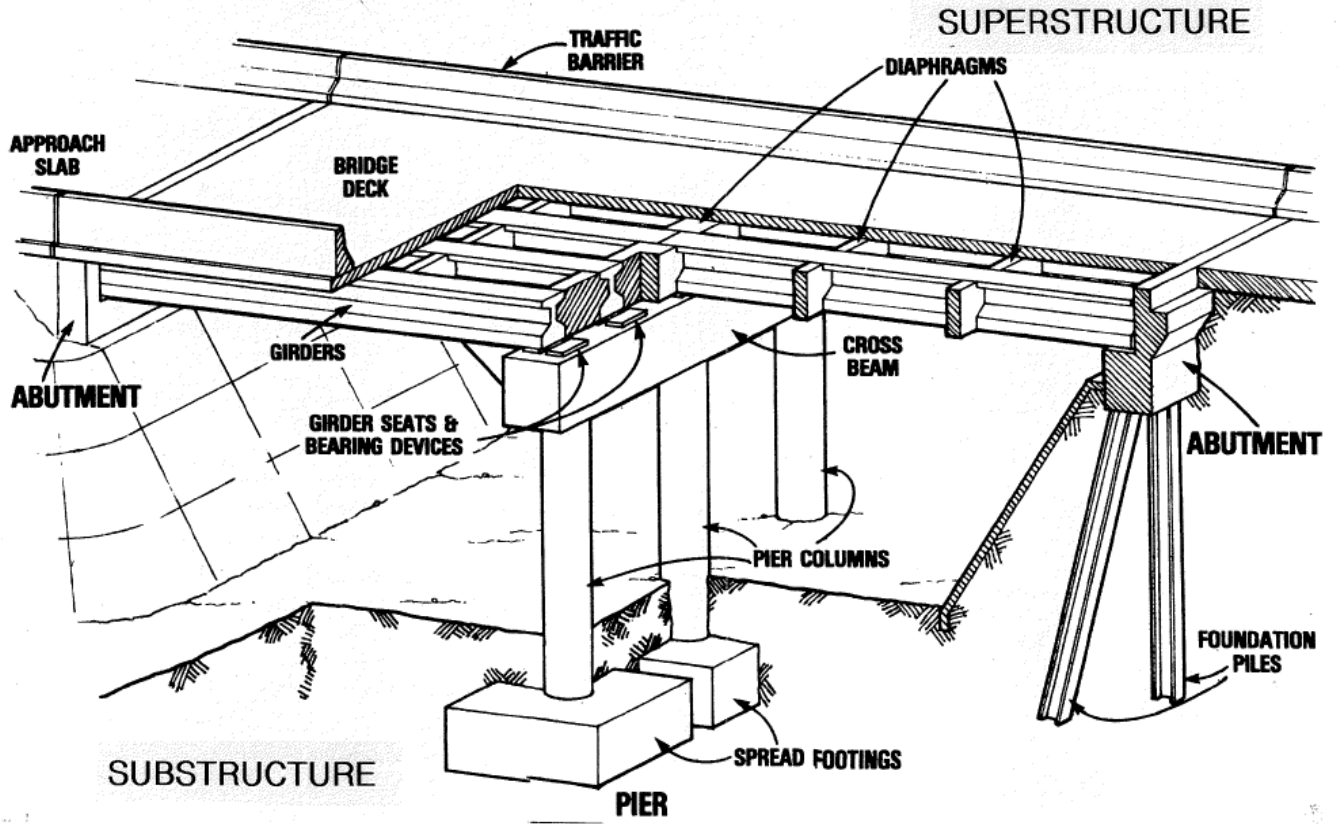
Trestle—a bridge structure consisting of beam spans supported upon bents. Trestles are usually made of timber and have numerous diagonal braces, both within each bent and from bent to bent.

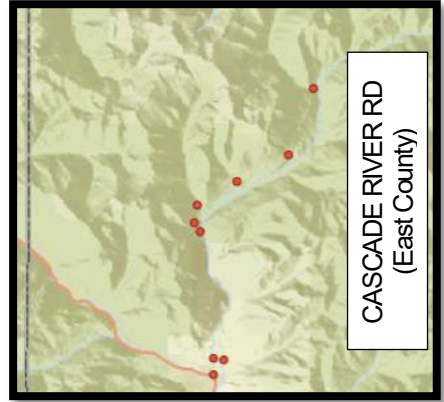
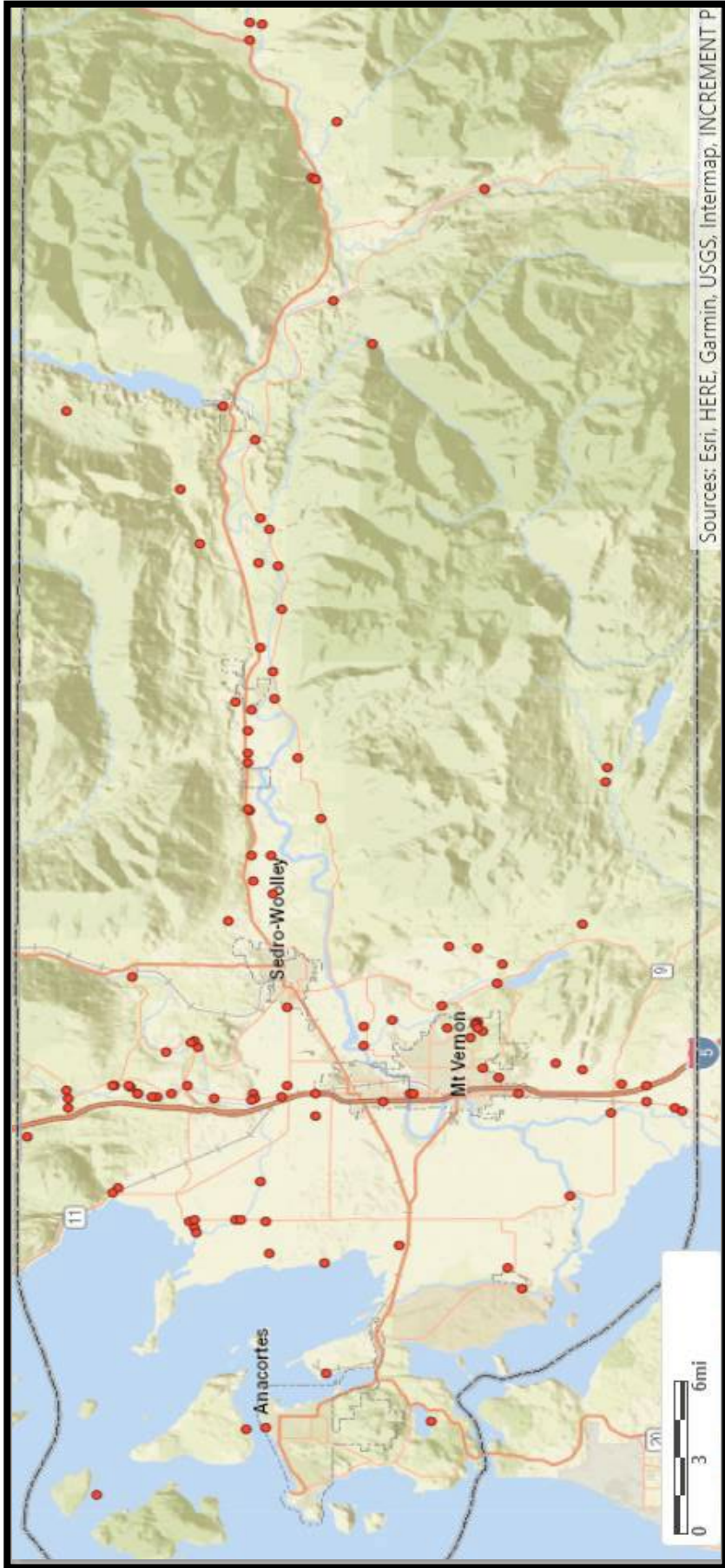
Wheelrail—a timber curb fastened directly to the deck, most commonly found on all-timber bridges.

Wingwall—walls that slant outward from the corners of the overall bridge that support roadway fill of the approach.

ELEMENTS OF A BRIDGE

BASIC BRIDGE PARTS





SKAGIT COUNTY BRIDGE MAP



APPENDIX A

BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT /REBUILT	SUFFICIENCY RATING
40152	ANACORTES FERRY DOCK	205	15.0	502	10	Steel	1976	24.1
40070	SKAGIT RIVER MARBLEMOUNT	662	14.0	608	11	Steel	1930	32.4
40113	OLD HWY 99 at THOMAS CREEK	52	30.0	4372	10	Timber	1934	37.2
40037	NORTH FORK BRIDGE	726	24.0	4276	7	Steel	1959	42.9
40031	PULVER ROAD at JOE LEARY	39	24.0	832	13	Concrete	1955	42.9
40047	LK CAVANAUGH at PILCHUCK	56	28.0	493	11	Concrete	1970	42.9
40114	SAMISH RIVER BRIDGE	385	24.0	3700	13	Steel	1934	45.5
40093	UPPER FINNEY CREEK BRIDGE	217	14.9	41	10	Concrete	1952	49.4
40153	GUEMES ISLAND FERRY DOCK	165	15.0	502	10	Steel	1981	50.2
40008	SOUTH FORK BRIDGE	908	28.0	5294	8	Steel	1972	53.8
40001	LAKE VIEW BLVD/NOOKACHAMPS	77	25.5	821	8	Concrete	1954	57.7
40039	RAINBOW BRIDGE	797	24.0	3101	7	Steel	1957	59.8
40156	CEDARDALE RD at CARPENTER CREEK	83	36.0	584	13	Timber	1934	60.8
40115	OLD HWY 99 at FRIDAY CREEK	122	26.0	1974	9	Concrete	1956	63.8
40063	LYMAN HAMILTON HWY at CHILDS CK	32	24.0	726	7	Concrete	1948	64.7
40090	DALLES BRIDGE	506	26.0	2562	6	Steel	1952	65.0
40131	LYMAN HAMILTON HWY at MANNSEK CK	52	26.0	260	6	Concrete	1954	68.2
40004	FRANCIS RD at SLOUGH	50	24.0	4395	5	Concrete	1958	68.4
40099	GOVERNMENT BRIDGE	304	14.0	158	11	Steel	1953	69.3
40076	CASCADE RIVER RD at HARD CREEK	46	17.7	460	8	Concrete	1997	70.5
40075	CASCADE RIVER RD at SIBLEY CREEK	23	28.0	280	11	Concrete	1997	71.4
40132	LYMAN HAMILTON HWY at JONES CK	52	26.0	250	9	Concrete	1955	72.3
40101	BAKER LAKE RD at BEAR CREEK	85	26.0	430	13	Concrete	1966	73.5
40082	S SKAGIT HWY at LORETTA CREEK	85	24.0	631	5	Concrete	1961	74.5
40109	LAKE SAMISH RD at FRIDAY CREEK	53	26.0	5132	7	Concrete	1965	74.5
40043	CONWAY HILL @ CARPENTER	58	14.0	77	9	Concrete	1980	76.0
40077	CASCADE RIVER RD at MINERAL PARK	71	18.0	280	11	Concrete	1986	76.6
40003	FRANCIS at NOOKACHAMPS	130	28.0	4395	5	Concrete	1979	76.8
40038	LACONNER WHITNEY at SL	68	26.0	4982	6	Concrete	1962	77.1
40116	OLD HWY 99 at SILVER CREEK	38	25.0	1974	9	Concrete	1934	77.9
40089	S SKAGIT HWY at FINNEY CREEK	120	26.0	631	5	Steel	1954	78.1
40036	FARM-TO-MARKET JOE LEARY	72	26.0	1905	7	Concrete	1950	79.3
40028	BAY VIEW-EDISON at SAMISH R	223	26.0	784	6	Concrete	1965	79.6
40083	S SKAGIT HWY at CUMBERLAND CREEK	50	24.0	631	5	Concrete	1961	79.7
40020	FRIDAY CREEK 3RD BRIDGE	61	20.0	165	8	Concrete	1961	79.9
40021	FRIDAY CREEK 4TH BRIDGE	61	20.0	144	9	Concrete	1961	80.0
40018	FRIDAY CREEK 1ST BRIDGE	61	20.0	165	8	Concrete	1962	80.4
40088	S SKAGIT HWY at PRESENTIN CREEK	85	27.0	631	5	Concrete	1966	80.7
40055	PRAIRIE RD E at SAMISH R	75	24.4	823	8	Concrete	1956	80.8
40081	S SKAGIT HWY at DAY CREEK	160	24.0	631	5	Concrete	1961	80.8
40086	S SKAGIT HWY at MILL CREEK	41	28.0	631	9	Concrete	1969	80.8
40026	FARM-TO-MARKET N DITCH	32	26.0	1554	8	Concrete	1951	81.0
40141	BAY VIEW STATE PARK	62	26.0	686	7	Concrete	1969	81.6
40052	TAYLOR RD at WALKER CK	42	16.0	52	13	Concrete	1985	81.9
40151	NICHOLSON at CHILDS CREEK	29	15.0	40	5	Concrete	1979	82.0
40140	BAKER LAKE RD at E GRANDY CREEK	41	28.0	694	12	Concrete	1968	82.0
40130	LYMAN HAMILTON HWY at RED CABIN CK	22	26.0	250	9	Concrete	1954	82.1
40034	FARM-TO-MARKET SAMISH R	158	26.0	1187	8	Concrete	1963	82.2
40106	LAKE SAMISH RD at BEAR CREEK	50	24.0	306	6	Concrete	1959	82.5
40002	SWAN ROAD at NOOKACHAMPS	126	28.0	1100	8	Concrete	1976	84.2
40066	HAMILTON CEMETERY RD at MUDDY CK	50	26.0	258	9	Concrete	1965	84.3

BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT /REBUILT	SUFFICIENCY RATING
40046	LK CAVANAUGH RD at BEAR	51	28.5	493	11	Concrete	1967	84.6
40042	MILLTOWN at BIG DITCH	50	24.2	408	9	Concrete	1957	84.8
40029	BAY VIEW-EDISON JOE LEARY	101	30.0	496	8	Concrete	1955	84.9
40084	S SKAGIT HWY at O'TOOLE CREEK	66	24.0	631	9	Concrete	1959	84.9
40157	BENSON RIDGE LN at CARPENTER CK	52	30.0	46	4	Timber	1983	85.0
40071	CASCADE RIVER BRIDGE	180	26.0	336	7	Concrete	1967	85.2
40015	PRAIRIE RD S at SAMISH R	83	28.0	1559	9	Concrete	1974	85.4
40017	PRAIRIE RD FRIDAY CK	78	28.0	2406	9	Concrete	1975	85.7
40032	FARM-TO-MARKET S DITCH	21	26.0	1331	6	Concrete	1950	86.2
40033	FARM-TO-MARKET at NEUMAN	60	26.0	1187	8	Concrete	1950	86.2
40065	CONRAD RD at SUTTER CREEK	73	15.7	91	3	Concrete	2011	86.2
40027	BAY VIEW-EDISON at SAMISH SL	38	26.8	784	6	Concrete	1965	86.5
40074	CASCADE RIVER RD at MARBLE CREEK	120	26.0	280	11	Concrete	1982	86.7
40061	MINKLER RD at WISEMAN CREEK	40	28.0	1024	7	Concrete	1967	87.3
40126	MARCHS POINT PIPELINE	44	28.0	1134	15	Concrete	1960	87.5
40161	FLINN ROAD at MCELROY SLOUGH	48	19.5	20	0	Concrete	2006	87.8
40073	CASCADE RIVER ROAD AT LOOKOUT CK	191	28.0	125	5	Steel	1981	87.9
40016	PRAIRIE RD W at SAMISH R	104	28.0	1559	9	Concrete	1975	89.0
40062	UTOPIA RD at BLACK SLOUGH	141	28.0	110	7	Concrete	1984	89.9
40120	BAKER LAKE RD at W FORK GRANDY CK	62	28.0	694	12	Concrete	1968	90.2
40067	CAPE HORN RD at ALDER CREEK	41	28.0	187	5	Concrete	1972	90.3
40060	BURMASTER RD at COAL CREEK	26	24.0	229	5	Concrete	1958	91.4
40094A	ROCKPORT CASCADE at ILLABOT CREEK	93	28.0	197	7	Concrete	1970	91.4
40023	FRIDAY CREEK 6TH BRIDGE	61	24.0	144	9	Concrete	1963	91.5
40024	FRIDAY CREEK 7TH BRIDGE	61	24.0	144	9	Concrete	1964	91.5
40041	E PETER JOHNSON RD	54	24.0	63	14	Concrete	1981	92.4
40012	COOK RD at BRICKYARD CK	54	44.0	14215	10	Concrete	2000	92.7
40005	NOOKACHAMP HILLS CULVERT	30	0.0	250	4	Aluminum	2008	92.7
40009	COOK RD at DD14 DITCH	38	40.0	13903	9	Concrete	2000	93.7
40080	S SKAGIT HWY at PARKER CREEK	26	0.0	1584	11	Concrete	1996	93.7
40044	PIONEER HWY at BIG DITCH	81	37.0	8445	8	Concrete	1987	93.8
40045	PIONEER HWY at FISHER SL	114	37.2	8445	8	Concrete	1987	94.0
40112	NEFFS CROSSING	108	41.0	4384	11	Concrete	2006	94.3
40163	HELMICK RD at RED CREEK	150	36.0	759	7	Concrete	2007	94.8
40068	CAPE HORN RD at GRANDY CREEK	51	28.0	342	7	Concrete	1967	95.2
40014	GRIPP RD at SAMISH R	84	28.0	664	6	Concrete	1976	95.5
40117	ALGER CAIN LAKE RD at SILVER CREEK	102	34.2	5113	6	Concrete	1992	95.6
40011	GREEN RD at THOMAS CK	51	24.0	71	8	Concrete	1958	96.0
40030	THOMAS RD at SAMISH R	91	28.0	221	15	Concrete	1973	96.3
40013	F&S GRADE SAMISH RIVER	102	28.0	500	9	Concrete	1974	96.3
40051	BEAVER LAKE RD at NOOKACHAMPS	73	28.6	144	9	Concrete	1977	96.7
40159	MINKLER RD at COAL CREEK	29	36.0	933	11	Concrete	1984	96.8
40092	CONCRETE-SAUK VALLEY at MILLER CK	27	0.0	1036	13	Concrete	1999	97.0
40085	S SKAGIT HWY at DAVIS SLOUGH	63	34.9	594	9	Concrete	2014	97.5
40019	FRIDAY CREEK 2ND BRIDGE	74	28.0	165	8	Concrete	1979	97.6
40054	KNAPP RD at NOOKACHAMPS	73	28.0	382	10	Concrete	1977	97.7
40129	LYMAN HAMILTON HWY at MUDDY CK	65	30.0	198	4	Concrete	1997	98.0
40095	ROCKPORT CASCADE RD at JORDAN CK	56	28.0	297	10	Concrete	1969	98.2
40022	FRIDAY CREEK 5TH BRIDGE	69	28.0	144	9	Concrete	1977	98.3
40110	BURLINGTON NORTHERN OVERPASS	395	38.0	4674	12	Concrete	2018	98.6
40025	FRIDAY CREEK 8TH BRIDGE	59	28.0	144	9	Concrete	1977	98.6

BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT /REBUILT	SUFFICIENCY RATING
40094C	HOLLOW CEDAR at ILLABOT CREEK	106	27.4	197	7	Concrete	2018	98.7
40094B	RYAN CROSSING at ILLABOT CREEK	106	27.4	197	7	Concrete	2018	98.7
40048	LK CAVANAUGH RD CULVERT	21	30.0	609	15	Aluminum	1998	98.8
40069	CONRAD RD at SWIFT CREEK	38	24.0	91	2	Concrete	1981	99.0
40164	S LAVENTURE RD at MADDOX CREEK	80	50.0	6973	12	Concrete	2013	99.0
40035	BAY VIEW-EDISON at BIG INDIAN	71	34.1	1155	8	Concrete	1992	99.6
40162	BLANCHARD RD at MCELROY SLOUGH	28	26.0	40	1	Concrete	2007	100.0
LOCAL AGENCY BRIDGES								
BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT/ REBUILT	SUFFICIENCY RATING
CITY OF BURLINGTON								
BURLINN-2	NORTH BURLINGTON BLVD	26	34.0	5147	10	Concrete	1997	94.8
BURLINN-3	GOLDENROD BRIDGE	116	40.0	2346	10	Concrete	2005	99.3
TOWN OF CONCRETE								
CONCRETE1	BAKER RIVER	269	18.0	137	11	Concrete	1916	21.9
CITY OF MOUNT VERNON								
MV-2	HOAG STEWARD OVERPASS	60	65.0	24455	5	Concrete	2003	88.9
MV-1	RIVERSIDE BRIDGE	850	60.0	21640	10	Concrete	2004	90.7
MV-3	ELEANOR LANE A	32	30.0	440	7	Concrete	2006	90.9
MV-7	J OFF BEAVER POND DR S	32	24.0	50	1	Aluminum	2006	94.5
MV-5	LANDMARK DRIVE	51	28.0	500	5	Concrete	1994	99.0
MV-10	OLYMPIC LANE	67	22.0	50	5	Concrete	2004	99.0
MV-12	LAVENTURE RD CULVERT	29	44.0	8735	4	Concrete	2010	99.2
MV-4	SKAGIT HIGHLANDS PARKWAY	37	0.0	800	5	Concrete	2003	99.9
MV-6	EAGLEMONT DRIVE	20	0.0	800	5	Steel	1995	99.9
MV-11	BEAVER POND DR NORTH A	42	30.0	400	5	Concrete	2001	100.0
MV-9	BEAVER POND DR NORTH B	54	28.0	300	5	Concrete	2002	100.0
MV-8	BEAVER POND DR SOUTH	29	28.0	200	5	Concrete	2004	100.0
CITY OF SEDRO WOOLLEY								
SW-2	NORTH REED STREET BRIDGE	30	40.0	1031	5	Concrete	2002	97.9
SW-1	KLINGER STREET BRIDGE	34	36.0	1620	5	Concrete	2002	99.9

APPENDIX B

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSPECTION	INSPECTION TYPE
2021 INSPECTION SCHEDULE						
40018	FRIDAY CREEK 1ST BRIDGE	0.45 N JCT OLD HWY 99 N	5/8/2019	24	May-21	Routine
40019	FRIDAY CREEK 2ND BRIDGE	0.59 N JCT OLD 99	5/8/2019	24	May-21	Routine
40020	FRIDAY CREEK 3RD BRIDGE	0.3 N. of JCT w/ Old 99	5/15/2019	24	May-21	Routine
40021	FRIDAY CREEK 4TH BRIDGE	0.4 N JCT OLD 99	5/15/2019	24	May-21	Routine
40022	FRIDAY CREEK 5TH BRIDGE	1.55 N JCT Old 99	5/15/2019	24	May-21	Routine
40023	FRIDAY CREEK 6TH BRIDGE	0.6 N JCT OLD 99 N	5/15/2019	24	May-21	Routine
40024	FRIDAY CREEK 7TH BRIDGE	2.16 N JCT OLD 99 N	5/22/2019	24	May-21	Routine
40025	FRIDAY CREEK 8TH BRIDGE	2.24 N JCT OLD 99 N	5/22/2019	24	May-21	Routine
40106	LAKE SAMISH RD at BEAR CREEK	2.0 NW JCT I-5	5/22/2019	24	May-21	Routine
40109	LAKE SAMISH RD at FRIDAY CREEK	0.25 E JCT INTERSTATE 5	5/22/2019	24	May-21	Routine
40115	OLD HWY 99 at FRIDAY CREEK	4.3 N JCT COOK RD.	5/29/2019	24	May-21	Routine
40116	OLD HWY 99 at SILVER CREEK	0.4 SE JCT LAKE SAMISH RD	5/29/2019	24	May-21	Routine
40117	ALGER CAIN LAKE RD at SILVER CREEK	0.34 E JCT OLD HWY 99	5/29/2019	24	May-21	Routine
40065	CONRAD RD at SUTTER CREEK	0.59 E JCT SR20	6/12/2019	24	Jun-21	Routine
40071	CASCADE RIVER BRIDGE	0.04 S JCT CASCADE RD	6/12/2019	24	Jun-21	Routine
40085	S SKAGIT HWY at DAVIS SLOUGH	13.9 E JCT SR-9	6/12/2019	24	Jun-21	Routine
40026	FARM-TO-MARKET N DITCH	7.7 N JCT SR 20	6/25/2019	24	Jun-21	Routine
40030	THOMAS RD at SAMISH R	0.3 N JCT ALLEN WEST RD	6/25/2019	24	Jun-21	Routine
40033	FARM-TO-MARKET at NEUMAN	6.1 N JCT SR20	6/25/2019	24	Jun-21	Routine
40034	FARM-TO-MARKET SAMISH R	5.9 N JCT SR 20	6/25/2019	24	Jun-21	Routine
40036	FARM-TO-MARKET JOE LEARY	5.0 N JCT SR 20	6/25/2019	24	Jun-21	Routine
40161	FLINN ROAD at MCELROY SLOUGH	300 Ft E Blanchard Rd	6/26/2019	24	Jun-21	Routine
40162	BLANCHARD RD at MCELROY SLOUGH	0.05 N JCT LEGG ROAD	6/26/2019	24	Jun-21	Routine
40062	UTOPIA RD at BLACK SLOUGH	0.5 E JCT Hoehn Road	7/17/2019	24	Jul-21	Routine
40163	HELMICK RD at RED CREEK	1.1 N JCT SR 20	7/17/2019	24	Jul-21	Routine
40029	BAY VIEW-EDISON JOE LEARY	5.8 N JCT SR-20	7/24/2019	24	Jul-21	Routine
40031	PULVER ROAD at JOE LEARY	.6 S JCT SR 11	7/24/2019	24	Jul-21	Routine
40035	BAY VIEW-EDISON / BIG INDIAN	0.4 N JCT SR20	7/24/2019	24	Jul-21	Routine
40141	BAY VIEW STATE PARK	3.5 N JCT SR 20	7/24/2019	24	Jul-21	Routine
40110	BURLINGTON NORTHERN OVERPASS	0.25 N JCT COOK ROAD	7/31/2019	24	Jul-21	Routine
CONCRETE1	BAKER RIVER	0.1 N MAIN ST	8/8/2019	24	Aug-21	Routine - UBIT
MV-1	RIVERSIDE BRIDGE	0.7 N JCT SR 538	8/8/2019	24	Aug-21	Routine - UBIT
40113	OLD HWY 99 at THOMAS CREEK	1.4 N JCT COOK RD.	8/20/2020	12	Aug-21	Routine
40001	LAKE VIEW BLVD/NOOKACHAMPS	0.25 S JCT SR9	8/21/2019	24	Aug-21	Routine
40005	NOOKACHAMP HILLS CULVERT	0.75 E JCT SR 9	8/21/2019	24	Aug-21	Routine
40009	COOK RD at DD14 DITCH	0.5 E JCT INTERSTATE 5	8/21/2019	24	Aug-21	Routine
40012	COOK RD at BRICKYARD CK	MP 5.38 COOK RD	8/21/2019	24	Aug-21	Routine
40054	KNAPP RD at NOOKACHAMPS	0.1 E JCT SR 9	8/21/2019	24	Aug-21	Routine
40112	NEFFS CROSSING	1.0 N JCT COOK RD.	8/23/2019	24	Aug-21	Routine
40038	LACONNER WHITNEY at SL	3.83 S JCT SR 20	9/4/2019	24	Sep-21	Routine
40041	E PETER JOHNSON RD	1.0 E JCT CEDARDALE ROAD	9/4/2019	24	Sep-21	Routine
40126	MARCHS POINT PIPELINE	1.6 N JCT SR 20	9/4/2019	24	Sep-21	Routine
40142	CAMPBELL LAKE OUTLET	0.39 W JCT SR 20	9/6/2017	48	Sep-21	Short Span
40013	F&S GRADE SAMISH RIVER	0.14 S JCT PRAIRIE RD	9/20/2019	24	Sep-21	Routine
40014	GRIPP RD at SAMISH R	0.1 E JCT PRAIRIE ROAD	9/20/2019	24	Sep-21	Routine
40015	PRAIRIE RD S at SAMISH R	2.21 E JCT OLD HWY 99	9/20/2019	24	Sep-21	Routine
40016	PRAIRIE RD W at SAMISH R	3.8 E JCT OLD HWY 99	9/20/2019	24	Sep-21	Routine
40017	PRAIRIE RD FRIDAY CK	0.17 Mi E of OLD HWY 99	9/20/2019	24	Sep-21	Routine
40055	PRAIRIE RD E at SAMISH R	0.5 W JCT SR 9	9/20/2019	24	Sep-21	Routine
BURLINN-2	NORTH BURLINGTON BLVD	1.02 MI SO OF COOK RD	9/25/2019	24	Sep-21	Routine
BURLINN-3	GOLDENROD BRIDGE	.3 N. of W. MCCORQUEDALE	9/25/2019	24	Sep-21	Routine
40164	S LAVENTURE RD at MADDOX CREEK	0.5 E JCT I-5	10/9/2019	24	Oct-21	Routine

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSPECTION	INSPECTION TYPE
MV-3	ELEANOR LANE A	0.1 E JCT OLD HIGHWAY 99	10/9/2019	24	Oct-21	Routine
MV-4	SKAGIT HIGHLANDS PARKWAY	0.4 N JCT E DIVISION ST	10/9/2019	24	Oct-21	Routine
MV-6	EAGLEMONT DRIVE	0.1 S JCT BEAVER POND N	10/12/2017	48	Oct-21	Routine
MV-10	OLYMPIC LANE	0.02 JCT BEAVER POND DR N	10/16/2019	24	Oct-21	Routine
MV-11	BEAVER POND DR NORTH A	0.2 N JCT EAGLEMONT DR	10/16/2019	24	Oct-21	Routine
MV-5	LANDMARK DRIVE	EAST OF JCT S WAUGH RD	10/16/2019	24	Oct-21	Routine
MV-7	J OFF BEAVER POND DR S	0.07 SE JCT PARKVEIW LN	10/16/2019	24	Oct-21	Routine
MV-2	HOAG STEWARD OVERPASS	RIVERSIDE DR JCT HOAG ST	10/23/2019	24	Oct-21	Routine
MV-8	BEAVER POND DR SOUTH	0.5 N JCT EAGLEMONT DR	10/23/2019	24	Oct-21	Routine
MV-9	BEAVER POND DR NORTH B	AT JCT PARKVEIW LN	10/23/2019	24	Oct-21	Routine
2022 INSPECTION SCHEDULE						
40008	SOUTH FORK BRIDGE	1.0 W JCT INTERSTATE 5	3/2/2020	24	Mar-22	Routine - UBIT
40037	NORTH FORK BRIDGE	5.5 W JCT INTERSTATE 5	3/3/2020	24	Mar-22	Routine - UBIT
40037	NORTH FORK BRIDGE	5.5 W JCT INTERSTATE 5	3/3/2020	24	Mar-22	Fracture Critical
40070	SKAGIT RIVER MARBLEMOUNT	0.03 E JCT SR 20	3/4/2020	24	Mar-22	Routine - UBIT
40070	SKAGIT RIVER MARBLEMOUNT	0.03 E JCT SR 20	3/4/2020	24	Mar-22	Fracture Critical
40114	SAMISH RIVER BRIDGE	2.6 N JCT COOK RD.	3/9/2020	24	Mar-22	Routine - UBIT
40114	SAMISH RIVER BRIDGE	2.6 N JCT COOK RD.	3/9/2020	24	Mar-22	Fracture Critical
40090	DALLES BRIDGE	1.5 S JCT SR 20	3/10/2020	24	Mar-22	Routine - UBIT
40090	DALLES BRIDGE	1.5 S JCT SR 20	3/10/2020	24	Mar-22	Fracture Critical
40099	GOVERNMENT BRIDGE	0.14 NW JCT SR 530	3/11/2020	24	Mar-22	Routine - UBIT
40099	GOVERNMENT BRIDGE	0.14 NW JCT SR 530	3/11/2020	24	Mar-22	Fracture Critical
40073	CASCADE RIVER ROAD AT LOOKOUT	7.04 E JCT SR 20	3/18/2020	24	Mar-22	Routine
40093	UPPER FINNEY CREEK BRIDGE	4.6 W CONC SAUK VALLEY RD	4/17/2020	24	Apr-22	Routine
40039	RAINBOW BRIDGE	0.95 JCT MORRIS ON MAPLE	7/21/2020	24	Apr-22	Routine - UBIT
40039	RAINBOW BRIDGE	0.95 JCT MORRIS ON MAPLE	7/21/2020	24	Apr-22	Fracture Critical
40060	BURMASTER RD at COAL CREEK	1.2 E JCT MINKLER	5/8/2020	24	May-22	Routine
40061	MINKLER RD at WISEMAN CREEK	0.5 W JCT SR 20	5/8/2020	24	May-22	Routine
40063	LYMAN HAMILTON HWY at CHILDS	0.8 E JCT SR 20	5/8/2020	24	May-22	Routine
40151	NICHOLSON at CHILDS CREEK	0.1 S JCT SR 20	5/8/2020	24	May-22	Routine
40159	MINKLER RD at COAL CREEK	0.1 E JCT SIMS ROAD	5/8/2020	24	May-22	Routine
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	5/15/2017	60	May-22	Underwater
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	5/16/2017	60	May-22	Underwater
40129	LYMAN HAMILTON HWY at MUDDY	0.3 M W HAMILTON	5/19/2020	24	May-22	Routine
40130	LYMAN HAMILTON HWY at RED CABIN	0.18 E JCT HEALY RD	5/19/2020	24	May-22	Routine
40131	LYMAN HAMILTON HWY at MANNSEER	0.17 W JCT HAMIL CEM RD	5/19/2020	24	May-22	Routine
40132	LYMAN HAMILTON HWY at JONES	0.28 E JCT PIPELINE ROAD	5/19/2020	24	May-22	Routine
40066	HAMILTON CEMETERY RD at MUDDY	0.5 W JCT SR 20	5/27/2020	24	May-22	Routine
40067	CAPE HORN RD at ALDER CREEK	0.75 E JCT SR 20	5/27/2020	24	May-22	Routine
40068	CAPE HORN RD at GRANDY CREEK	2.25 W JCT SR 20	5/27/2020	24	May-22	Routine
40069	CONRAD RD at SWIFT CREEK	0.2 E JCT SR 20	6/10/2020	24	Jun-22	Routine
40092	CONCRETE-SAUK VALLEY at MILLER	CONCRETE-SAUK VALLEY ROAD	6/10/2020	24	Jun-22	Routine
40095	ROCKPORT CASCADE RD at JORDAN	0.71 SW JCT N CASCADE HW	6/10/2020	24	Jun-22	Routine
40094A	ROCKPORT CASCADE at ILLABOT CREEK	4.2 E JCT SR 530	6/10/2020	24	Jun-22	Routine
40072	CASCADE RIVER RD at MONOGRAM	7.37 E JCT SR 20	6/23/2020	24	Jun-22	Routine
40074	CASCADE RIVER RD at MARBLE CREEK	8.3 E JCT SR 20	6/23/2020	24	Jun-22	Routine
40075	CASCADE RIVER RD at SIBLEY CREEK	10 E JCT SR 20	6/23/2020	24	Jun-22	Routine
40076	CASCADE RIVER RD at HARD CREEK	12.7 E JCT SR 20	6/23/2020	24	Jun-22	Routine
40077	CASCADE RIVER RD at MINERAL PARK	16.02 E JCT SR 20	6/23/2020	24	Jun-22	Routine
40027	BAY VIEW-EDISON at SAMISH SL	0.4 W JCT FARM TO MARKET	6/24/2020	24	Jun-22	Routine
40028	BAY VIEW-EDISON at SAMISH R	0.5 W JCT SR 537	6/24/2020	24	Jun-22	Routine
40046	LK CAVANAUGH RD at BEAR	8.0 E JCT SR 9	7/10/2020	24	Jul-22	Routine
40047	LK CAVANAUGH at PILCHUCK	8.7 E JCT SR 9	7/10/2020	24	Jul-22	Routine

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSPECTION	INSPECTION TYPE
40048	LK CAVANAUGH RD CULVERT	1.1 SE JCT SR 9	7/10/2020	24	Jul-22	Routine
40080	S SKAGIT HWY at PARKER CREEK	7.25 E JCT SR-9	7/15/2020	24	Jul-22	Routine
40081	S SKAGIT HWY at DAY CREEK	9.0 E JCT SR 9	7/15/2020	24	Jul-22	Routine
40082	S SKAGIT HWY at LORETTA CREEK	10.0 E JCT SR 9	7/15/2020	24	Jul-22	Routine
40083	S SKAGIT HWY at CUMBERLAND CREEK	11.5 E JCT SR 9	7/15/2020	24	Jul-22	Routine
40101	BAKER LAKE RD at BEAR CREEK	9.5 NE JCT SR 20	7/15/2020	24	Jul-22	Routine
40120	BAKER LAKE RD at W FORK GRANDY	2. NE JCT SR 20	7/15/2020	24	Jul-22	Routine
40140	BAKER LAKE RD at E GRANDY CREEK	4.0 NE JCT SR 20	7/15/2020	24	Jul-22	Routine
40039	RAINBOW BRIDGE	0.95 JCT MORRIS ON MAPLE	7/21/2020	24	Jul-22	Routine
40042	MILLTOWN at BIG DITCH	0.02 E JCT SR 530	7/22/2020	24	Jul-22	Routine
40043	CONWAY HILL @ CARPENTER	0.5 E JCT INTERSTATE 5	7/22/2020	24	Jul-22	Routine
40044	PIONEER HWY at BIG DITCH	0.23 E JCT MILLTOWN ROAD	7/22/2020	24	Jul-22	Routine
40045	PIONEER HWY at FISHER SL	1.5 SW JCT INTERSTATE 5	7/22/2020	24	Jul-22	Routine
40084	S SKAGIT HWY at O'TOOLE CREEK	15.0 E JCT SR 9	7/29/2020	24	Jul-22	Routine
40086	S SKAGIT HWY at MILL CREEK	17.0 E JCT SR9	7/29/2020	24	Jul-22	Routine
40088	S SKAGIT HWY at PRESENTIN CREEK	18.5 E JCT SR9	7/29/2020	24	Jul-22	Routine
40089	S SKAGIT HWY at FINNEY CREEK	19.0 E JCT SR 9	7/29/2020	24	Jul-22	Routine
40002	SWAN ROAD at NOOKACHAMPS	0.37W JCT BABCOCK/MUDLAKE	8/12/2020	24	Aug-22	Routine
40003	FRANCIS at NOOKACHAMPS	2.8 W JCT SR9	8/12/2020	24	Aug-22	Routine
40004	FRANCIS RD at SLOUGH	2.0 W JCT SR9	8/12/2020	24	Aug-22	Routine
40051	BEAVER LAKE RD at NOOKACHAMPS	3.0 SE JCT SR 9	8/20/2020	24	Aug-22	Routine
40052	TAYLOR RD at WALKER CK	4.3 E JCT SR 9	8/20/2020	24	Aug-22	Routine
40156	CEDARDALE RD at CARPENTER CREEK	0.75 S JCT SR 534	8/20/2020	24	Aug-22	Routine
40011	GREEN RD at THOMAS CK	0.01 S KELLEHER RD	9/9/2020	24	Sep-22	Routine
40157	BENSON RIDGE LN at CARPENTER	1.2 E I-5 JCT STACKPOLE	9/9/2020	24	Sep-22	Routine
MV-12	LAVENTURE RD CULVERT	NORTH OF BLACKBURN	9/9/2020	24	Sep-22	Routine
40094B	RYAN CROSSING at ILLABOT CREEK	4.2 E JCT SR 530	9/16/2020	24	Sep-22	Routine
40094C	HOLLOW CEDAR at ILLABOT CREEK	4.2 E JCT SR 530	9/16/2020	24	Sep-22	Routine
40037	NORTH FORK BRIDGE	5.5 W JCT INTERSTATE 5	9/25/2017	60	Sep-22	Underwater
MV-1	RIVERSIDE BRIDGE	0.7 N JCT SR 538	9/25/2017	60	Sep-22	Underwater
SW-1	KLINGER STREET BRIDGE	0.2 MI N of COOK ROAD	9/30/2020	24	Sep-22	Routine
SW-2	NORTH REED STREET BRIDGE	0.4 MI N of SR20	9/30/2020	24	Sep-22	Routine
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	10/21/2020	24	Oct-22	Routine - UBIT
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	10/21/2020	24	Oct-22	Fracture Critical
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	10/21/2020	24	Oct-22	Special
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	10/21/2020	24	Oct-22	Routine - UBIT
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	10/21/2020	24	Oct-22	Fracture Critical
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	10/21/2020	24	Oct-22	Special
OTHER NOTABLE FUTURE INSPECTIONS						
40032	FARM-TO-MARKET S DITCH	7.5 N JCT SR 20	6/26/2019	48	Jun-23	Short Span
40028	BAY VIEW-EDISON at SAMISH R	0.5 W JCT SR 537	9/24/2018	60	Sep-23	Underwater
40008	SOUTH FORK BRIDGE	1.0 W JCT INTERSTATE 5	9/25/2018	60	Sep-23	Underwater
40073	CASCADE RIVER ROAD AT LOOKOUT	7.04 E JCT SR 20	3/18/2020	48	Mar-24	Routine - UBIT

APPENDIX C

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40001	LAKE VIEW BLVD at NOOKACHAMPS	2	Bank protection: armor missing upstream end on the right bank.	15-Oct-19
		2	Sidewalk: Repair sidewalk approach where rebar is exposed (north).	
		2	Tighten nuts on pier cap repair braces	
		3	Upgrade rails to meet current standards.	
		3	Clear debris from submerged columns	
40002	SWAN ROAD at NOOKACHAMPS	1	Numerous blockouts are split or rotten along southern bridge rail near midspan.	
		1	Raise approach rail to minimum height.	
		2	Approach Rail - Post #8 NE quadrant needs replaced, suffering from termites	
		3	Paint steel diaphragm / cross bracing.	
		3	Missing nut on bridge rail post, NW corner.	
40003	FRANCIS at NOOKACHAMPS	1	Level approaches at both ends of bridge.	
		3	Remove BST overspray	
		3	Remove sand and rat droppings from abutments and pier caps	
40004	FRANCIS RD at SLOUGH	2	Shoulder/pavement edge drops off between edge of road and guardrail, needs to be brought up to grade, currently full of earthen material.	
		3	Paint rail posts	
		3	Rotten spacer block - 13th post from bridge, NW quadrant. Replace 1st post at NW Quad - Updated 2020	
40008	SOUTH FORK BRIDGE	1	Bridge needs posting for EV2 = 27T and EV3 = 37T loads in advance of bridge at west approach, heading eastbound. Similar to signage at east approach (follow MUTCD guidelines for signs). (3/2/2020 - Repair rewritten. TKK/WAW)	02-Mar-20
		1	Remove timber debris from Pier 3 (and Pier 2 if any is visible at time of repair).	
		2	Clean bird guano from lateral gusset plates and girder bottom flanges in steel Spans 1, 2 and 3.	
		2	Remove loose concrete from girder ends, clean exposed reinforcement/strands and coat with a rust inhibitor and epoxy sealant at the following locations: Girder 4B and 4C at Pier 4 (3/2/2020 - Updated photos in 2020. No defect for Girder 8A noted at Pier 8. TKK/WAW)	
		2	Update Load Rating tab codes to reflect values from the most recent Load Rating Report.	
		M	Ramp/feather patch east approach roadway with ACP to provide a smooth transition on and off the bridge. (3/3/2020 - Changed to an "M". Per Skagit County, will schedule repair when settlement is greater than 1". TKK/WAW)	
		M	Monitor movement of prestressed concrete girders at diaphragms over Piers 5 - 8. Diaphragms are breaking up in a number of places along girder to diaphragm interfaces, exposing girder ends of bottom flanges. Girders 5B and 5C at Pier 6 have up to 1/4" gap between bottom flange and diaphragm due to spalling (no rebar or strands are visible within gap). See plan sheets 9 through 11 under "Records/Plans" tab for girder details (File 7 - 13 Superstructure, etc.).	
40009	COOK RD at DD14 DITCH	1	Crack seal transverse cracks at both ends of bridge	
		3	SE guardrail is not fastened to 7th and 8th posts	
		3	Patch open crack in NE corner of concrete rail	
		3	Patch spall with grout in G2 near east abutment	
40011	GREEN RD at THOMAS CK	1	Guardrail: Post 1, downstream end missing bolt and nut. Currently hanging on one bolt.	
40012	COOK RD at BRICKYARD CK	1	Crack seal pavement over each bridge joint.	21-Aug-19
		2	Sweep sidewalk and clean out joints.	
		3	Clear vegetation from abutment ends	
40013	F&S GRADE SAMISH RIVER	2	Patch exposed rebar in deck, approx 6 square feet	
		3	A/C level roadway / shoulder approaches	
40014	GRIPP RD at SAMISH R	2	A/C level east approach	
		3	Repair: patch spall in the wingwall.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		M	MONITOR: Bridge is bypassable, right upstream channel protection is starting to slough off into river and needs to be monitored after high water events.	
40015	PRAIRIE RD S at SAMISH R	1	Missing armor on south abutment which experiences higher velocities.	
		2	Tighten cable on NW ET guardrail.	
		3	Add additional fill and armoring to north bank, piles exposed.	
40016	PRAIRIE RD W at SAMISH R	1	Impact damage to NW section of guardrail.	
		2	NW section of guardrail damaged and post leaning.	20-Sep-19
		M	Scour protection damaged during high water event - Monitor stability	
40017	PRAIRIE RD FRIDAY CK	2	Spalls on upstream curb.	
		2	Seal and cover diagonal cracking occurring in upper flanges	
		M	Continue to monitor channel migration to the east.	
40018	FRIDAY CREEK 1ST BRIDGE	1	Patch sink hole in south approach at Centerline.	
		1	East drain pipe too long causing it to clog. Cut off approximately 8"	08-May-19
		2	Patch exposed rebar in girders #1 #2 #3 & #4 and Soffits.	
		2	Replace scoured armoring on abutment #2 (south)	
		3	Pressure wash concrete curbing and rail posts - repaint.	
		3	Upgrade bridge rails to current standards.	
		3	Remove BST overspary	08-May-19
40019	FRIDAY CREEK 2ND BRIDGE	1	NW section of guardrail, 1st post needs replacing.	
		2	NW Type 3 Obj. marker has a broken post and is leaning. Sign is reusable.	08-May-19
40020	FRIDAY CREEK 3RD BRIDGE	2	Drain: repair drain downspout on upstream side - it has broken off.	
		2	Pressure wash moss off curbing and girders	
		2	Brush and paint guardrail posts	
		3	Upgrade guardrail to current standards	
		M	Monitor failed armoring and scour hole under Abut#1	
40021	FRIDAY CREEK 4TH BRIDGE	2	Exposed rebar: wire brush and patch exposed rusty rebar on girders 1, 2, and 4	
		2	Upgrade guardrail to standard.	
		3	Remove overspary (chipseal) on deck.	
		3	SE drain pipe needs repairs	
		3	Patch and level approach	15-May-19
		M	bank erosion 30' upstream	
40022	FRIDAY CREEK 5TH BRIDGE	2	Abutments: backfill material and repair armoring along abutment #1	
		2	G4 - remove spalled concrete, wire brush 8' of exposed rusty rebar, cover with grout or epoxy.	
		3	Diaphragms rusty - need steel brushing and paint	15-May-19
40023	FRIDAY CREEK 6TH BRIDGE	1	Patch south approach - sink hole	
		3	Remove ivy from abutment wall.	
		3	Bridge curbing, girders and soffits need pressure washed.	
		3	Replace missing down spout on drain	
40024	FRIDAY CREEK 7TH BRIDGE	2	Wire brush and patch areas of rusty exposed rebar in girders	
		3	Pressure wash curbs and girders	
40025	FRIDAY CREEK 8TH BRIDGE	3	Wire brush and grout exposed rusty rebar in girders.	
40026	FARM-TO-MARKET NORTH DITCH	3	Patch spall on outside of rail at connection (8th post from North)	
		M	Monitor settlement on the road approaches.	25-Jun-19
40027	BAY VIEW-EDISON at SAMISH SL	2	Brush and patch spalls with exposed rebar in the girders.	
		2	Sweep shoulders between bridge rail and BST	24-Jun-20
		3	Remove vegetation around bridge	24-Jun-20
40028	BAY VIEW-EDISON at SAMISH R	3	Paint guardrail posts	
		M	Monitor undermining of gabion baskets at Pier 1.	
40029	BAY VIEW-EDISON JOE LEARY	1	Backfill material loss under slumping SW gabion	
		1	Deck needs rehab - suggest a modified polymer overlay	
		1	Repair drainage structure in southwest corner.	24-Jul-19
		2	Guardrail - 1st post on NE quadrant and SE quadrant rotten and needs replaced.	
		2	A/C level both approaches at the joint.	24-Jul-19
		3	Recently repaired drainage in SW corner could use additional patching/material.	
		3	Guardrail - block out missing in southwest leg.	
40030	THOMAS RD at SAMISH R	2	Bridge rails need to be upgraded.	
		3	Remove barb wire fence from under bridge. Restricting access.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT	
		3	Repair lost armoring at abutment #2		
40031	PULVER RD at JOE LEARY	1	Seal deck with a membrane, to prevent further spalling and corrosion of the rebar.	24-Jul-19	
		1	Paint bridge rails and posts. See photo.		
		3	Repair Bridge Rail on southeast corner of bridge, it appears to have been struck.		
		3	Sweep deck		
		M	Monitor the south abutment soil migration, there is a gap between the abutment cap and the ground. Piles are showing.		
40032	FARM-TO-MARKET S DITCH	2	Previous asphalt patch at joint in the northbound lane has failed. May require epoxy.	26-Jun-19	
40033	FARM-TO-MARKET at NEUMAN	3	Patch unraveling chipseal.		
40034	FARM-TO-MARKET at SAMISH	1	Some woody debris still needs removed at bent# 5		
		2	Rails: Upgrade transition rails to meet current stds.		
		2	Guardrail has come detached from post - NE transition		
		3	Repair object marker post - NE corner.		
40035	BAY VIEW-EDISON / BIG INDIAN	2	SE guardrail missing 4 nuts and 1 bolt.	24-Jul-19	
		3	Sweep deck		
40036	FARM-TO-MARKET JOE LEARY	2	Sweep deck/unplug drains.	25-Jun-19	
		2	Vegetation needs to be cut around the ends of the bridge.		
		3	Brush and patch spalls in slab		
40037	NORTH FORK BRIDGE	1	Repair channel markers to restore them to a functional state.		
		1	Remove heavy timber debris from Piers 4 and 5.		
		1	Extend Pier 8 bearing base plates with steel plate extensions. Approximately 40% of the bearing area has been lost. Measurements not related to Pier 8 have been removed from the inspection report. See element 311 in the 2016 inspection report historical measurements. Initial measurements were taken in 2010 at 60°F. Pier 8 South bearing top plate has shifted 3-3/8" west relative to base plate. 2020: 3-3/8" to the west at 50°F. 2018: 3-5/8" to the west at 50°F. North bearing top plate has shifted 3-7/16" west relative to base plate. 2020: 3-7/16" to the west at 50°F. 2018: 3-1/2" to the west at 50°F. No significant changes have been noted over the monitoring period.		
		2	Repair or replace both east and west abutment slope drains to prevent further erosion. (3/3/2020 - Added west abutment drain to repair. TKK/WAW)		
		2	Repair damaged north thrie beam in Span 2.		03-Mar-20
		2	Update Load Rating tab to reflect values from most recent Load Rating Report.		03-Mar-20
		M	Monitor the movement of the piers at the east end of the structure (Pier 7, 8 and 9) including the tipping of Pier 8 to the east. The current means of measurement with a plumb bob used over a 50-60 ft. height cannot be accurately reproduced which resulted in variation of measurements over the monitoring period. Pier 8 2020: 5" 2018: 5" 2016: 4-7/16" 2014: 4-3/4" 2012: 3-1/2" 2010: 4-1/2" 2008: 4-1/2" 2006: 4-1/4" 2004: 4" 2000: 5" 1998: 4-1/8" Consideration should be given to installing a level or another accurately reproducible means to confirm if Pier 8 is currently moving. Measurements indicate that the pier has stabilized.		

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		M	Monitor flame cuts in the pin hanger plates at the following two locations: Girder 3B at East Hinge has a 1/8" flame cut notch in the edge of the south hanger plate near the upper end of the top pin. Flame cut runs 3/4" along the edge of the plate (hanger plate is 1-1/4" thick). Girder 3C at East Hinge has a 1/8" flame cut notch in the edge of the north hanger plate near the upper end of the top pin. Flame cut runs 1-1/4" along the edge of the plate (hanger plate is 1-1/4" thick, therefore full thickness).	
40038	LACONNER WHITNEY at SL	1	Remove vegetation from the bridge ends.	04-Sep-19
		1	Deck needs sweeping	
		2	Paint the bridge rail posts, are peeling and rusty.	
		2	Scuppers need cleaning out.	
40039	RAINBOW BRIDGE	1	Remove loose and delaminated concrete from spalled areas in the deck. Clean and paint exposed reinforcement, and patch with an epoxy based compound or other approved material. Do not use asphalt. Spalled areas are located in: Span 4, Panel 2 southbound lane. Span 4, Panel 3 southbound lane.	
		1	At the top rib of the east arch, between U6 and U7, locate the end of the crack that is extending into the rib with dye penetrant. Stop drill a 13/16" diameter hole centered at the end of the crack. Provide a 3/4" A325 bolt.	
		1	At the following locations, drill out the broken or missing rivets and replace with a an A325 bolt: West arch south face of the Panel Point 3 strut connection. (Two rivets) West arch U10 to U11 west face splice. (Three rivets) (Quantity correction, 4/4/18, FPP/TJN)	
		1	Remove loose and delaminated concrete from deteriorating patching and spalled areas in the open concrete joints. Clean and paint exposed reinforcement, and patch with an epoxy based compound or other approved material. Do not use asphalt. Spalled areas are located in: Span 4 over Panel Point 11 centerline. Span 4 over Panel Point 16 southbound lane.	
		1	Clear trees/shrubs away from bridge at Pier 4 to make room for UBIT access. (Minor trimming was completed in 2020 - JAC/MA)	
		1	Remove debris from around the bearings at Piers 4 and 5 and at Span 4, Panel Points 4 and 17. Clean and remove laminar and pack rust down to solid steel and paint with a rust inhibitor.	
		1	Clean all the open panel joints over the floor beams and re-seal them with poured rubber or other flexible joint compound. (Repair re-written, 4/21/14, GAS/PFK)	
		1	Reposition the bronze bearing plates at Bearing 4-17C and Stringer Bearing 5A that extend beyond the bearing base plates. Add a keeper bar to the bearing plates to prevent the bronze plate from "walking out" after repositioning.	
		2	Remove material accumulated on bridge. Where corrosion is found, clean to bare steel and paint. See following locations: Box beam at PP 17, Arch bracing near Pier 5, Pier 4 and 5 footings. (Re-written in 2016, ABK)	
		2	Replace the missing bird screens at the following locations: All hangers EXCEPT: U7W, U10W, U12W, and U14E. Verify locations prior to completing repair. (Updated 7/21/2020 - JAC/MA)	
		M	Monitor cracking of welds for connection of the lateral cross-bracing to the bottom flanges of the stringers in Panel 5. If cracks propagate into base metal, take corrective action to stop further propagation. (Only Panel 5 connection welds were cracked, 4/4/18, FPP/TJN) (7/21/2020 - No changes noted - JAC/MA)	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		M	Monitor cracking around welded access holes in top rib of arch. At the east arch between U6 and U7, the cracking has spread into the arch. West Arch: U6-U7, U7-U8, U8-U9, U9-U10, U10-U11, U14-U15. East Arch: U3-U4, U6-U7, U7-U8, U10-U11, U14-U15. (No changes as of 4/4/18, FPP/TJN) (No changes as of 7/21/2020, JAC/MA)	
40041	E PETER JOHNSON RD	2	Clean out deposited sediment on top of pier cap.	
		3	Steel diaphragms need paint treatment.	
40042	MILLTOWN at BIG DITCH	3	Clean girders and pier caps of bird guano	
40043	CONWAY HILL at CARPENTER	1	Crack seal longitudinal cracking in east approach road.	
		3	Guardrail posts need replaced - 2nd from east bank, downstream side. 4th post from west bank, upstream side.	
		M	Minor settling in west approach roadway.	
40044	PIONEER HWY at BIG DITCH	2	Replace rotten guardrail posts, seen Elem 1686 note	
		3	Crack seal transverse cracks at each approach and at midspan - Updated 2020	
40045	PIONEER HWY at FISHER SL	2	Seal transverse cracks in deck.	
		3	Guardrail - Post 1 in SE and SW quads needs replaced.	
		3	Fill and compact material around catch basin in northeast corner of bridge.	
		M	Scour hole from road runoff between Abut #2 and tidegate structure	
40046	LK CAVANAUGH RD at BEAR	1	Add gabion baskets to both abutments to prevent loss of approach road fill.	
		1	Patch both bridge/road joints, >1" of settlement.	
		3	Brush and patch rust exposed rebar in girders.	
		3	Upgrade bridge rails	
		3	Sweep deck	10-Jun-20
40047	LK CAVANAUGH at PILCHUCK	1	Post for SU6, SU7 and EV2, EV3	15-May-19
		2	Install gabion baskets at both bridge abutments to retain road approach fill material.	
		3	Remove trees at NE and NW corners. Hindering inspections.	
		3	Upgrade Bridge Rails	
40048	LK CAVANAUGH RD CULVERT	2	Clear log jam at downstream end. Debris beginning to build up into culvert.	
		2	Remove vegetation to create a path for inspection.	
40051	BEAVER LAKE RD at NOOKACHAMPS	3	Brush and paint rusting "connection braces" at the girder/abutment joint.	
		M	Losing material behind Abut #2	
		M	Channel migrating to the east upstream of bridge.	
40054	KNAPP RD at NOOKACHAMPS	1	Brush and patch failing patches over pick points	
		2	Remove vegetation from SE corner of bridge deck. Grass is limiting drainage.	21-Aug-19
		3	Remove moss and overgrowth on abutment ends.	21-Aug-19
		M	Erosion in the NW corner under abutment.	
40055	PRAIRIE RD E at SAMISH R	1	Clear debris from intermediate piers	
		M	Monitor east abutment during high flows.	
40060	BURMASTER RD at COAL CREEK	2	Sweep deck. Lots of loose gravel and debris.	08-May-20
		3	Cover exposed rebar of damaged curbing at abutment #1.	
		3	Repair spalls in concrete railing, approx. 2'.	
		3	Paint rail posts	
		M	Void in armoring along Abut #2, 3' deep - MONITOR	
		M	Left bank erosion downstream of bridge.	08-May-20
40061	MINKLER RD at WISEMAN CREEK	1	Remove woody debris under the bridge.	
		2	Clean and patch spall in Girder #5.	
		2	Remove Fence from downstream headwalls	
		3	Patch the damaged areas on the curb.	
		3	NW End Treatment has minor damage but appears to be still functioning properly	
		M	2 failed gabion baskets along Abut#2, quarry spalls dumped out.	
40062	UTOPIA RD at BLACK SLOUGH	2	Patch spalling occurring at the outside girder joints over middle pier	
		3	Replace rotten blockout along guardrail in NW quadrant	
40063	LYMAN HAMILTON HWY at CHILDS CREEK	1	Post for SU6 and SU7 and possibly EV3	08-Aug-19
		2	Brush rebar and patch spall at NW abutment/girder joint.	
		3	Pressure wash balluster rails and sides.	
		3	Guardrail post rotten: 3rd post from southwest end.	
		3	Missing nut on guardrail post: 2nd post from the west end, downstream side.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		M	Channel migrating west in the NW corner of bridge - MONITOR	
		M	Spacer blocks on bridge rail retrofit are showing signs of rot.	
		M	Scour hole on backside of guardrail at southwest end	08-May-20
40066	HAMILTON CEMETERY RD at MUDDY CREEK	1	A/C level west approach - 2" of settlement.	
		3	Pressure wash curbs.	
		3	Vegetation management needed around bridge abutments.	27-May-20
40067	CAPE HORN RD at ALDER CREEK	1	Patch potholes in asphalt deck.	
		1	Patch potholes located at bridge joint.	27-May-20
		2	Repair or replace damaged gabion basket	
		2	Brush and patch exposed rebar in girders (60 linear feet)	
		3	Pressure wash moss off of bridge	
		3	Upgrade guardrail to current standards.	
		M	Upstream channel migration to the west. Stream approaching bridge at angle now with higher velocities at Abutment #2	
40068	CAPE HORN RD at GRANDY CREEK	3	Upgrade guardrail to current standards	
		M	Monitor the bank protection, check after high water.	
40069	CONRAD RD at SWIFT CREEK	1	Replace lost grout in deck at girder pick points.	
		2	Sweep Deck	10-Jun-20
		M	Monitor the channel protection.	
		M	Appears to be bridge movement causing abutments to rotate.	
40070	SKAGIT RIVER MARBLEMOUNT	0	Replace split spacer block at northeast corner.	
		1	Install signage for Load Restrictions	
		1	Remove loose ACP and patch pothole at east abument joint in the eastbound lane.	
		1	Repair or replace the 20 ft. length of damaged guardrail at the northwest corner.	
		1	Remove loose or spalled concrete from the spalled deck surface over Span 1. Clean and paint any exposed rebar and patch with an approved material.	
		1	Remove debris from upstream face of Pier 4. (This is a recurrent problem, consider the installation of a shark or debris deflector).	
		1	Bottom chords of both north and south trusses have a few areas of debris that inhibits inspection (areas are primarily over land at ends of truss spans). Clean debris from bottom chords prior to next scheduled UBIT inspection in 3/2022 (majority of debris can be seen and maybe accessed from deck).	
		2	Replace missing nut at Truss span Bearing 2A at the southwest corner for the masonry plate and tighten loose nut at the southeast corner.	
		2	Remove rust, apply rust inhibitor and touch-up paint the stringers at the following: Stringer 10G top flange (at Floorbeam 9). Stringer 11G top flange (at Floorbeam 10). Stringer 13G bottom flange (at Floorbeam 13) at erection angle seat. Stringer 24G bottom flange (near Floorbeam 23).	
40071	CASCADE RIVER BRIDGE	1	Repair thrie beam transition at nw corner. Damaged from fallen tree.	
		2	Sweep deck and shoulders	
		2	Clean drains - plugged with debris	
		2	Patch exposed rebar in deck.	12-Jun-19
		M	River mainstem appears to be shifting South, upstream of bridge - MONITOR	
40072	CASCADE RIVER RD at MONOGRAM	2	Concrete repair: patch left and right wingwalls; and abutment #2.	
		3	Patch approach roadway at bridge joint.	
		3	Debris removal: remove boulders form under bridge.	
		M	Waterway: monitor bridge at high water, stream overtops the bridge and bypasses on the left end.	
40073	CASCADE RIVER RD at LOOKOUT CREEK	1	Remove unstable boulder at the NW corner before it rolls down slope and impacts Pier 2.	
		M	Drain flow path has eroded bank and become very steep. Currently stable. MONITOR SMT/TRM 2020- No significant changes.	
40074	CASCADE RIVER RD at MARBLE CREEK	2	SE Wrap around end treatment is damaged	
		2	NE End treatment isn't up to standard	
		2	Repair: fourth rail post from right D corner is bent from impact, base plate is still in place.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		3	Improve drainage at SE corner, routing water away from wingwall.	
40075	CASCADE RIVER RD at SIBLEY CREEK	2	Pressure wash deck and remove material between panels	
		2	Panel 16 has loose bolt - 1 1/8" socket	
40076	CASCADE RIVER RD at HARD CREEK	M	Scour hole located under shotcrete Abut#2 side. MONITOR	
		M	Monitor Southwest retaining wall - slightly out of plum	
40077	CASCADE RIVER RD at MINERAL PARK	1	Fill potholes in bridge approach.	
		2	Mitigate loss of approach road fill with gabion baskets and back filling.	
		2	Sweep deck, lots of gravel tracked onto it.	
40080	S SKAGIT HWY at PARKER CREEK	M	Small scour hole forming - MONITOR	
40081	S SKAGIT HWY at DAY CREEK	3	Settlement reoccurring in both approaches. Last repaired in 2014	
		3	Wire brush and patch exposed rusty rebar in the girders	
		M	Monitor for debris and localized scour.	
40082	S SKAGIT HWY at LORETTA CREEK	1	Guardrail - replace 1st transition post in SE Quad	
		2	Patch deck areas with exposed rebar, 20' from west end.	
		2	Wire brush and patch or paint rusty rebar on girders.	
		3	Paint rail posts	
		3	Guardrail - 2nd transition post in NE Quad is beginning to rot.	
40083	S SKAGIT HWY at CUMBERLAND CREEK	2	Paint rail posts	
		M	Channel has been rerouted downstream of bridge - MONITOR	
40084	S SKAGIT HWY at O'TOOLE CREEK	2	Rails need painting and replace damaged (tree) section of bridge rail - Updated 2020	
		M	Loss of armoring is causing sloughing behind Abut #2. May be causing material loss and dips at the approaches. Updated 2020	
		M	Monitor right bank repair upstream of bridge. Large rootwad cabled to riprap was installed in 9/2003.	
40086	S SKAGIT HWY at MILL CREEK	1	Replace damaged wood guardrail posts on upstream side.	
		2	Patch exposed rebar in the girders.	
40088	S SKAGIT HWY at PRESENTIN CREEK	1	Resurface / rehabilitate bridge deck	
		3	Replace missing creek name sign.	
		3	Paint steel rail posts.	
		M	Upstream channel migrated into east channel, west is filling with sediment - MONITOR	
		M	LWD in channel causing localized scour	
40089	S SKAGIT HWY at FINNEY CREEK	1	Clear debris from Span 3 and collecting on Pier 2	
40090	DALLES BRIDGE	1	Truss members at both ends of the bridge have heavy moss growth that is blocking drainage, including the transverse member / restrainer block over Piers 3 and 4, (L3 and L15). Clean affected members and open drilled holes for drainage to prolong paint life.	
		2	Update Load Rating Information based on most recent Load Rating Data.	
		2	Replace poured joints over floorbeams with a Dow Corning pourable joint or equivalent.	10-Mar-20
40093	UPPER FINNEY CREEK BRIDGE	2	Remove fallen boulders from behind Pier 3	
		3	Patch spall in North rail.	
		3	Clear moss from concrete rails	
		M	Monitor cracks in pier 4 column near top end around weak point.	
40094A	ROCKPORT CASCADE at ILLABOT CREEK	2	AC level eastern approach	10-Jun-20
		3	Replace rubber joints	
		3	Pothole on west end of bridge WB lane	10-Jun-20
40095	ROCKPORT CASCADE RD at JORDAN CREEK	1	Patch potholes in west approach.	
		3	Previous scour repair on east bank could use some additional rip-rap.	
40099	GOVERNMENT BRIDGE	1	Replace steel sleeper channel in Span 3 (21st sleeper channel from the west end). Defect monitoring history: 2020: Horizontal web tears measure 12" and 7-3/4". No changes. 2018: Horizontal web tears measure 12" and 7-3/4". No changes. 2016: Horizontal web tears measure 12" and 7-3/4". Length increased by 3-3/4". 2014: 12" and 4" tears. No changes.	
		1	Secure or remove section of broken steel grid deck in Span 2, Panel 3. Revised 2018 (SRD/TRM).	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		2	Repair or replace the blocking and support for the north side metal bridge railing, in Span 2 between Panel Points L1 and L2.	03-Jul-19
		2	Update Load Rating tab to reflect values from the most recent Load Rating Report.	
		M	Monitor the steel deck and sleeper channels in areas of cracked welds and laminar tears. Noted defects are in Span 1, Span 2 curb and grate to channel connections primarily within Panels 1 and 9, Span 3 sleeper channels.	
40101	BAKER LAKE RD at BEAR CREEK	1	Additional potholes and failing patches in deck and at road/bridge joints	15-Jul-20
		1	Sweep shoulders and clear scuppers	
		2	Repair and patch driving surface.	
		3	Brush and patch exposed rusty rebar in girders and abutment.	
		M	Losing approach road fill material behind abutments.	
40106	LAKE SAMISH RD at BEAR CREEK	3	Seal the deck with polymer overlay	
		3	Paint bridge rail posts	
		3	Add material to shoulders at deck joint, 2" to 6" on both sides.	
40109	LAKE SAMISH RD at FRIDAY CREEK	2	Repair: Posts need painting	22-May-19
		2	Repair loose Type III sign southwest corner.	
		2	Replace damaged transition rail on SW section.	
		M	Armoring sloughing along Abut #1 - Monitor	
40110	BURLINGTON NORTHERN OVERPASS	2	Seal cracks on deck over pier caps with epoxy resin	
40112	NEFFS CROSSING	3	Sweep deck	23-Aug-19
40113	OLD HWY 99 at THOMAS CREEK	1	Install temporary shoring around red tagged pile.	15-Oct-19
		1	Patch and crack seal transverse cracking occurring in A/C overlay.	
		2	Replace or reinforce rotted timber abutment planks along bottom of both abutments.	15-Oct-19
		2	Replace rotten guardrail posts at the SW and NW corners of bridge	
		3	Replace rotten timber girders on each end of span 3	
40114	SAMISH RIVER BRIDGE	1	Clean sand and debris from bottom chord. North half of bridge can probably be reached from below with a ladder. 2018 - Sand and debris is accumulating in the bottom chord, but did not impact inspection. (SRD/TRM)	05-Sep-19
		1	Restore riprap around Pier 3.	
		1	Remove joints at Pier 3 and Pier 4 and re-engineer and install new joint systems.	05-Sep-19
		1	At the south abutment joint, remove all loose/deteriorated ACP and concrete, clean any coat any exposed reinforcement with a rust inhibitor and patch with an approved material. Revised 2018 (SRD/TRM)	05-Sep-19
		1	Current vertical clearance posting signs are misleading. Revise vertical clearance posting signs to read 14' 1" at the west curbline and 14' 4" at the east curbline. The minimum vertical clearance points are under the gusset plates at the portal/bracing connections over the curbline. WSDOT standards recommend posting for a 3" margin of safety. Verify dimensions and post accordingly.	05-Sep-19
		1	Reset or replace rocker bearings at Pier 3. Joint is closed and header is breaking up.	05-Sep-19
		2	Update Load Rating tab to reflect values from the most recent Load Rating Report.	23-Jul-19
		2	At Pier 3 joint, remove loose/deteriorated concrete to sound concrete, clean and coat any exposed reinforcement with a rust inhibitor and patch with an approved material.	05-Sep-19
		2	Repair cope cracks at the following locations: Stringer 2A at FB 2: 1/2" crack. Stringer 7A at FB 6: 1/4" crack. Lengths were measured in 2010 and have not increased as of 2018. See "Cope Crack Repair Detail" in the Files tab for repair procedure and other details. Revised 2018 (SRD/TRM)	05-Sep-19

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		2	At Pier 3 joint, repair the east sections of loose and missing steel header. 2018 - Repair revised to separate into two repairs. Concrete repairs moved to new REPAIR #14664. (SRD/TRM)	05-Sep-19
		3	Replace broken northwest baluster on concrete bridge rail. Attach supplemental rebar to the top and bottom connection. Drill 5/8" diameter hole 6" deep for #4 rebar and secure with epoxy resin. Lap splice #4 bars full height. (Rail designed with one #4 bar per post). Revised 2018 (SRD/TRM).	05-Sep-19
40115	OLD HWY 99 at FRIDAY CREEK	1	Post 4, SE rail, needs replaced	
		2	Replace Post 1, NW rail - rotten	
		2	Scrub and patch exposed rebar in deck.	29-May-19
		2	Replace failing patch in northbound lane near midspan.	29-May-19
		3	Replace multiple rotten spacer blocks (2 east rail, 6 west rail)	
40116	OLD HWY 99 at SILVER CREEK	2	Mill and fill failing asphalt over utility cut north of bridge.	29-May-19
		M	scour under abutment #2, downstream end.	
40117	ALGER CAIN LAKE RD at SILVER CREEK	2	Patch pothole on west end of bridge, westbound lane.	29-May-19
40120	BAKER LAKE RD at W FORK GRANDY CREEK	1	Replace failed armoring below west abutment.	
		2	Repair scoured shoulder and improve drainage.	
		3	Remove debris and vegetation along curbs.	
40126	MARCHS POINT PIPELINE	3	Patch or replace curb - cracked and spalling at north/west corner.	
40129	LYMAN HAMILTON HWY at MUDDY CREEK	1	Muddy Creek requires channel maintenance.	19-May-20
		3	Clear vegetation growing in sandbar along bridge.	19-May-20
		M	Rutting in pre-level along centerline and sections of BST unraveiling.	
40130	LYMAN HAMILTON HWY at RED CABIN CREEK	2	Repair: left bridge seat approach road has a D spall in pavement 1' x 9".	27-May-20
		3	Backfill sloughing shoulder, NW corner.	
		3	Westbound guardrail end treatment damaged (NE quadrant)	
		M	Scour hole at downstream end of Abut #2 - Monitor (2020 Update - filled back in)	
40131	LYMAN HAMILTON HWY at MANNSEER CREEK	1	Post for SU and EV ratings	08-Aug-19
		2	Upgrade Guardrails	
40132	LYMAN HAMILTON HWY at JONES CREEK	1	Post for all under legal loads	08-Aug-19
		3	Pressure wash concrete bridge rails	
		M	Woody debris hung up on pier 3 causing local scour.	
		M	Scour along Abutment 2, install new armoring and backfill.	19-May-20
40140	BAKER LAKE RD at E GRANDY CREEK	1	Replace upstream top rail - section loss and corrosion.	
		1	Wire brush and patch exposed rusty rebar and failed patches.	
		2	Remove debris and vegetation along bridge curbs	
		3	The SW rail and end treatment need to be raised. Currently top of rail is at 17"	
		M	Slight settlement in east approach from loss of road approach material behind abutments.	
40141	BAY VIEW STATE PARK	2	Paint bridge rails and posts.	
		3	Rails: upgrade to meet current standards.	
40151	NICHOLSON at CHILDS CREEK	2	Patch potholes at southern approach at the joint.	
		2	Clear vegetation and debris from expansion joints.	
		3	Rotten block out posts #'s 1 2 & 5 on downstream side, 6 & 7 on upstream side.	
40152	ANACORTES FERRY DOCK	1	Girders 1H, 1I and 1J have cracks and delaminations and spalls in the bottom chord on most of the shore side half. Two options: Continue with the bulb T replacement of the three easternmost girders. Possible pre-coating the strands and reinforcement, or using a low permeability concrete for corrosion protection. Or, on the girders - Arrest the corrosion in the prestressing strands in the bottom flanges of the "bulb Tee" concrete girders. Remove delaminated concrete, clean rust off strands, paint with an epoxy base paint, patch concrete, carbon fiber wrap bottom flange.	
		1	Repair the crack in the bridge seat joint header, right wheel line when looking offshore. Crack in steel plate is approximately 2 ft. long and may be repaired by cleaning and welding.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		2	Transfer span framing has scattered rust blooms in the girders, floorbeams, stringer clip angles, and bottom diagonals. Steel headframe has bolt heads and nuts with rust blooms. Clean to bright steel, prime, and spot paint.	
		2	Repair the crack in the connection of the grid deck to Stringer 4D at Floorbeam 3, near the centerline of the deck.	
40153	GUEMES ISLAND FERRY DOCK	1	Restore the design edge distance of the gusset hole for the apron lift beam.	10/21/2020
		1	Clean and spot paint all steel areas which have corrosion.	
		1	Replace the lower clevis bolt attachment to the hoisting block on the right girder. This bolt is yielding.	10/21/2020
		1	Apron piano hinge type at end of transfer span has 1/2" of slop due to fretting . Per contract plans, double extra pipe inner diameter is 1.771", rod is 1.625", this should have only a 1/8" gap. These need to be greased on a regular basis to reduce section loss.	10/21/2020
		2	Replace upper clevis pin on right hoist platform. This pin has insufficient grip length causing threads in bearing.	
		3	Lift motor gear box leaks oil. Repair leaks.	10/21/2020
40156	CEDARDALE RD at CARPENTER CREEK	1	Brush and patch exposed rebar in deck (7 LF)	
		1	Repair cable rail, sw quadrant.	
		2	Replace all block outs with 6" blocks on rails. Updated 2020	
		2	Upgrade bridge rails / transition / guardrail / end treatments	
40157	BENSON RIDGE LN at CARPENTER CREEK	2	Tighten cleats. Last performed in 2010	
		3	Section loss in deck. Replace 2' of failed board.	
40159	MINKLER RD at COAL CK	1	Replace all rail posts that are damaged (6 upstream side, 2 downstream side)	
		1	Coal Creek in need of sediment management project and remove debris from underneath bridge. Updated 2020	
		2	Repair spalls upstream side of bridge (12)	
		3	Digout and rebuild west approach, westbound lane. Updated 2020	
40161	FLINN ROAD at MCELROY SLOUGH	3	Sweep deck	
		3	Patch spall in deck at joint of Abut #2	
40162	BLANCHARD RD at MCELROY SLOUGH	2	Replace broken guardrail post on the NE end treatment.	
		3	Replace grout in wingwall joints and around culverts.	
40163	HELMICK RD at RED CREEK	3	Sweep and patch low spot in shoulder along southbound lane	
		M	Creek eroding both banks and nearing abutment piles.	
		M	Water flowing from abutment #2, below G5	17-Jul-19
40164	S LAVENTURE RD at MADDOX CREEK	M	Maddox Creek migrating towards west abutment wall - Monitor	