



## SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

# 2021 ANNUAL BRIDGE REPORT



*“Concrete-Sauk Valley Temporary Bridge”*

*Located on Concrete-Sauk Valley Road at North Osterman Creek (Milepost 13.3)*

**SUBMITTED MARCH, 2022**



SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

2021 BRIDGE REPORT

Submitted: March 2022

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
BAC	Bridge Advisory Committee
CFR	Code of Federal Regulations
EV#	Emergency Vehicle (# refers to number of axles)
FHWA	Federal Highway Administration
FLBP	Federal Local Bridge Program
NBIS	National Bridge Inventory System
PS/PT	Pre-stressed / Post-tensioned
RCW	Revised Code of Washington
SHV	Specialized Haul Vehicle
SU#	Single Unit (# refers to number of axles)
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

## EXECUTIVE SUMMARY

The 2021 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, traffic data, 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.

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:

- 63 bridge inspections were performed in Skagit County.
  - 48 routine inspections performed on Skagit County bridges
  - 1 Damage inspection of the Anacortes Ferry dock when a vessel came loose from its mooring during a winter storm and continually slammed into the side of the dock and transfer span.
  - 12 routine inspections performed for local agencies: City of Mount Vernon and City of Burlington)
  - 2 routine UBIT inspections performed by the Washington State Bridge Preservation Office for local agencies (Riverside Bridge, Baker River Bridge)
  
- Inventoried new temporary bridge structure on Concrete-Sauk Valley Road spanning North Osterman Creek, MP 13.3 (Cover Photo)
  
- The design of Upper Finney Creek Seismic Retrofit and Strengthening Project is near completion. The proposed work includes a seismic retrofit, making the bridge more resistant to earthquake damage, while also increasing its overall strength and load capacity. Construction scheduled to begin this summer. Skagit County was awarded \$3,000,000 in Federal Local Bridge Program funds for this project.

- The Anacortes Ferry Dock Girder Replacement project is underway involving the removal of 3 girders with significant section loss, caused from steel inside the girder getting rusty, expanding, and breaking/spalling the concrete around it. With the new girders installed, the sufficiency rating will greatly increase and remove the structure from the “Structurally Deficient” list (Table 1).



***Removal of deteriorating girders, Anacortes Ferry***



- 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. The County was able to avoid load restricting the bridge by making it a one-lane, two-way bridge.
  - Temporary signals were purchased and installed by County staff to help regulate traffic flow. Permanent signalization is in the design phase and we hope to have in place in 2022.
- Temporary shoring was installed on the Old Hwy 99 at Thomas Creek Bridge after discovering a deteriorating timber pile. The shoring prevents the need to load restrict the bridge.
  - Bridge Engineering consultant, TranTech, prepared the design; permits and construction accomplished by County staff.
  - Application submitted to Federal Local Bridge Program for replacement funds but did not receive award. However, we will continue to seek replacement funding for this bridge in the coming year.



*Old 99 at Thomas Cr, temp shoring*

- Skagit County was awarded \$487,400 by the Federal Local Bridge Program to rehabilitate the deck on the Bay View-Edison Joe Leary Bridge. Design is scheduled to begin in 2022 (see pg 14, Preventative Maintenance Projects).

- North Fork Bridge debris was cleared by Carlson Construction using a small tugboat. The raft of woody debris blocked entire span between piers #4 & #5, approximately 1/3 of the main channel. County has an on-call contract with Carlson Const for whenever debris begins to pile up on our lower Skagit River bridges.



*North Fork Bridge, debris removal*

# BRIDGE INVENTORY

## Skagit County Road Bridges:

As of December 31, 2021, Skagit County has 111 bridges in the National Bridge Inventory System (NBIS).

- The current inventory consists of:
  - 5 culverts (2 corrugated metal, 3 concrete)
  - 2 predominately timber bridges
  - 12 predominately steel bridges
  - 92 predominately concrete bridges
- 11 of the 111 bridges are “High-Cost Inspections” requiring special inspection needs
- Skagit County has 5 structurally deficient bridges (See Table 1).

TABLE 1

BRIDGE NUMBER	BRIDGE NAME	DEFICIENCY	FUNDING STATUS
40152	ANACORTES FERRY DOCK	Girder Condition	Fully funded, Currently under construction.
40113	OLD HWY 99 at THOMAS CK	Deck/Substructure	Eligible for Replacement 2022 Call
40070	SKAGIT RIVER MARBLEMOUNT	Superstructure	Eligible for Replacement or Rehab
40029	BAY VIEW-EDISON at JOE LEARY	Deck	Awarded \$487,400 for Deck Repair
40013	F&S GRADE SAMISH RIVER	Deck	Eligible for Deck Repair, 2022 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 11 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 2021, there was only two local agency bridges that needed inspection by BPO but for 2022, we have nine UBIT and four Underwater (1 local agency) scheduled for BPO.. See “Appendix B – Routine & Special Inspection Schedule” for details on inspection frequencies and schedules for all 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 2021, we approved 26 of 29

Oversized/Overweight Permit applications; 12 of which required review of the axle weights and configuration on 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 for additional information).



*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 have been prioritized and on schedule to be completed this year.

All 28 Category 1 bridges have been rerated for the SHV's with the following bridges being identified as not meeting the legal load limits of the new SHV design loads (See Table 2). Some of which requiring weight restriction postings.

TABLE 2

LOAD RESTRICTIONS											
Bridge #	Bridge Name	AASHTO TRUCKS - 1,2,3			SU4	SU5	SU6	SU7	EV2	EV3	POSTED Y/N
		25T	36T	40T	27T	31T	34.7T	38.7T	28.7T	43T	
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	Y
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	Y
40099	Government Bridge	24.0			22.6	23.8	23.9	24.8	24.1	23.2	Y
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.

#### 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 three short span structures inventoried, like Campbell Lake Outlet pictured to the right, with plans to add more crossings that meet the short span definition. Once inventoried, Skagit County can schedule routine inspections and operate these crossings the same as federally reported bridges in our inventory.



*Campbell Lake Outlet receiving new timber cap, 2013*



*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 workload, 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 workload 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](http://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, 2021, Skagit County has five bridges with the SD designation and eligible for Federal Local Bridge Program 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 Local 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 availability.

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

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 9.6, making it eligible for replacement funding. The bridge has a deteriorating pile that has been red tagged and normally would require a weight restriction or closure of the bridge. But County forces were able to quickly permit and construct temporary shoring to reduce pressure on the pile. We will be applying for replacement funds in the **2022 Local Bridge Program Call for Projects**.



*Thomas Creek Bridge – Old Hwy 99 N.*

#### **North Fork Bridge #40037**

The North Fork Bridge has served the County well for 63 years, but its narrow configuration and limited load capacity have rendered it obsolete. Currently, the bridge is in Fair condition with a sufficiency rating of 42.89 so it's not eligible for Federal Local Bridge Program replacement funds. However, given the importance of the route it serves (connecting Interstate-5 with State Route 20 and serving as an alternative trucking route to the Port of Skagit, the refineries, and Port of Anacortes) we are looking for infrastructure grants that could help replace the structure. A new structure will also provide benefits to the non-motorized community, as well as salmon recovery and flood water conveyance opportunities.

### 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 design phase is near completion and will move into construction this summer.**



*Upper Finney Creek Bridge*

### **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 is currently under construction.

### **Skagit River Marblemount Bridge #40070**

The sufficiency rating dropped from 39.93 to 32.38 after a new load rating was performed, considering some 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,



*Marblemount Bridge – Skagit River*

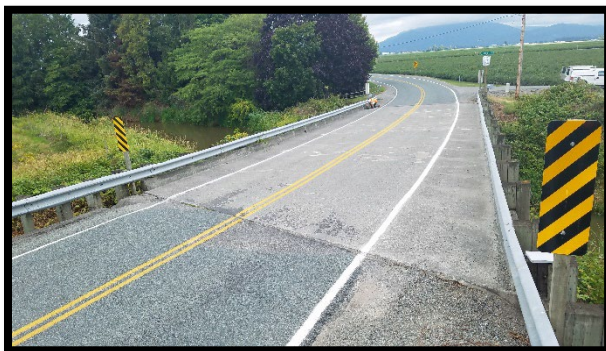
load restrictions were avoided by modifying the lane configurations and making it a one-lane two-way bridge. By making it one lane, this allows us to channelize heavy loads into the middle of the bridge, distributing the load more evenly.

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 for future grant funding opportunities.

## **PREVENTATIVE MAINTENANCE PROJECTS**

### **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 experiencing advanced deterioration and in need of repair, currently coded a 4 (Poor). This coding of 4 makes the bridge structurally deficient and has been awarded \$487,400 through the Federal Local Bridge Program to repair the deck, as well as the approach road fill retaining wall and existing drainage system.



*Bay View-Edison at Joe Leary Slough Bridge*



### **Other Deck Rehabilitation Projects:**

Like the Bay View-Edison at Joe Leary Bridge, we have several other bridges that are in very good condition but with deteriorating decks. Their decks may not yet be rated poor and eligible for funding, but we recommend adding them to the 6-year Transportation Improvement Program and be prepared for available funding. These bridges are:

- Cascade River Bridge #40071
- S Skagit Hwy at Presentin Creek #40088
- F & S Grade Rd at Samish River #40013

### **Paint/Protective Coating:**

#### **Government Bridge #40099**

Steel bridge paint is not only for aesthetic purposes but also provides a protective coating that prevents rust and corrosion of the steel. We have several steel bridges that could use a good cleaning (Rainbow Bridge and Dalles Bridge in particular) but Government Bridge is the only structure in our inventory that has enough failing paint to be eligible for grant funding.

Staff will continue to look for funding opportunities and resources to help with cleaning and painting of our more popular bridges.

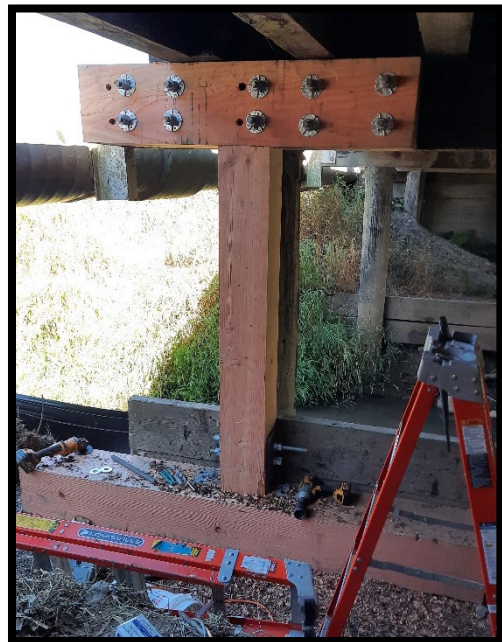
## **COUNTY CREW MAINTENANCE AND REPAIRS**

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

### **Bridge Maintenance Projects:**

#### **Old Highway 99 at Thomas Creek #40113**

With design help from our bridge engineering consultant, TranTech, county staff permitted and constructed temporary shoring around one of the structures' deteriorating piles. This shoring is fastened to the timber cap and helps distribute the load to the ground carried by the pile. The shoring allows us to avoid having to load restrict the bridge, or possibly a lane closure. This temporary shoring technique keeps the sufficiency rating low for grant opportunities but maintains the structure's load carrying capacity.



*Old 99 at Thomas Creek – temp shoring*

## Concrete-Sauk Valley Temporary Bridge #40091

The temporary bridge was installed to keep the road open while the North Osterman Creek culvert continued to fail due to massive head cutting from the unpredictable migration of the



*Concrete-Sauk Valley at North Osterman*

Sauk River. When 100% failure was imminent, County crews sprang into action to add two more 10' sections to the bridge, increasing the overall span length to 130'. With the extra span length to help account for additional head cutting and lateral scour of the creek, Special Operations crew were able to safely remove the remaining concrete culvert sections. The temporary structure will remain until the permanent crossing is designed and ready for construction.

## Debris

Debris is an ongoing issue for many of our bridges. To improve crew efficiency and response time, Environmental Services secured programmatic HPA's for clearing debris from problem bridges. Our crews were able to remove the debris from South Skagit Hwy at Finney Creek #40089 during the November '21 flood event (*right*).



*South Skagit Highway at Finney Creek*

## 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

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 20 feet or less, 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 formula considers the structural adequacy, functional obsolescence, level of service and essentiality for public use.

**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.

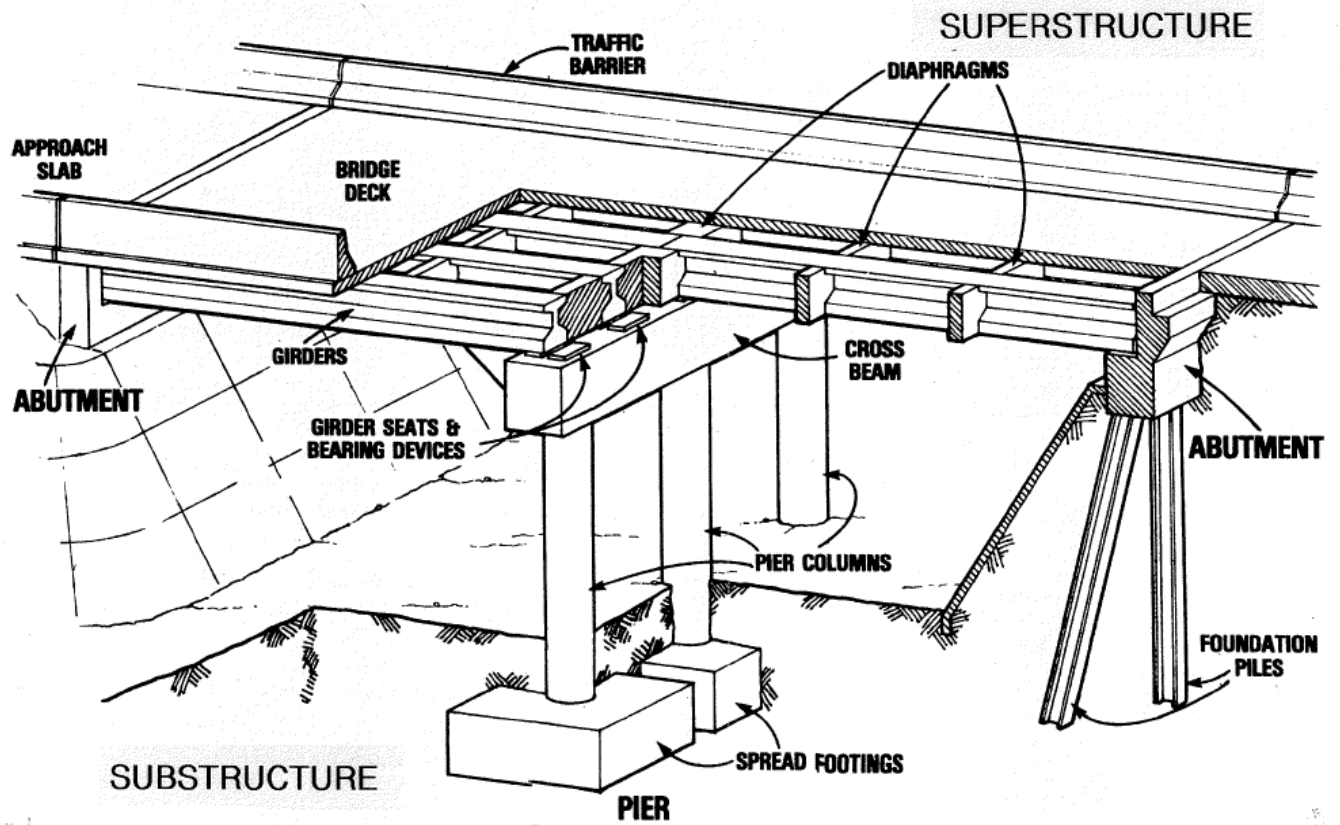
**Tension**—type of stress involving an action which pulls apart.

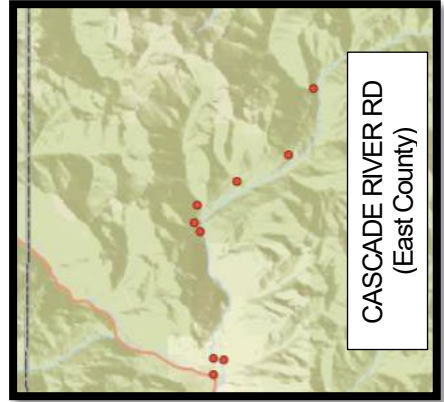
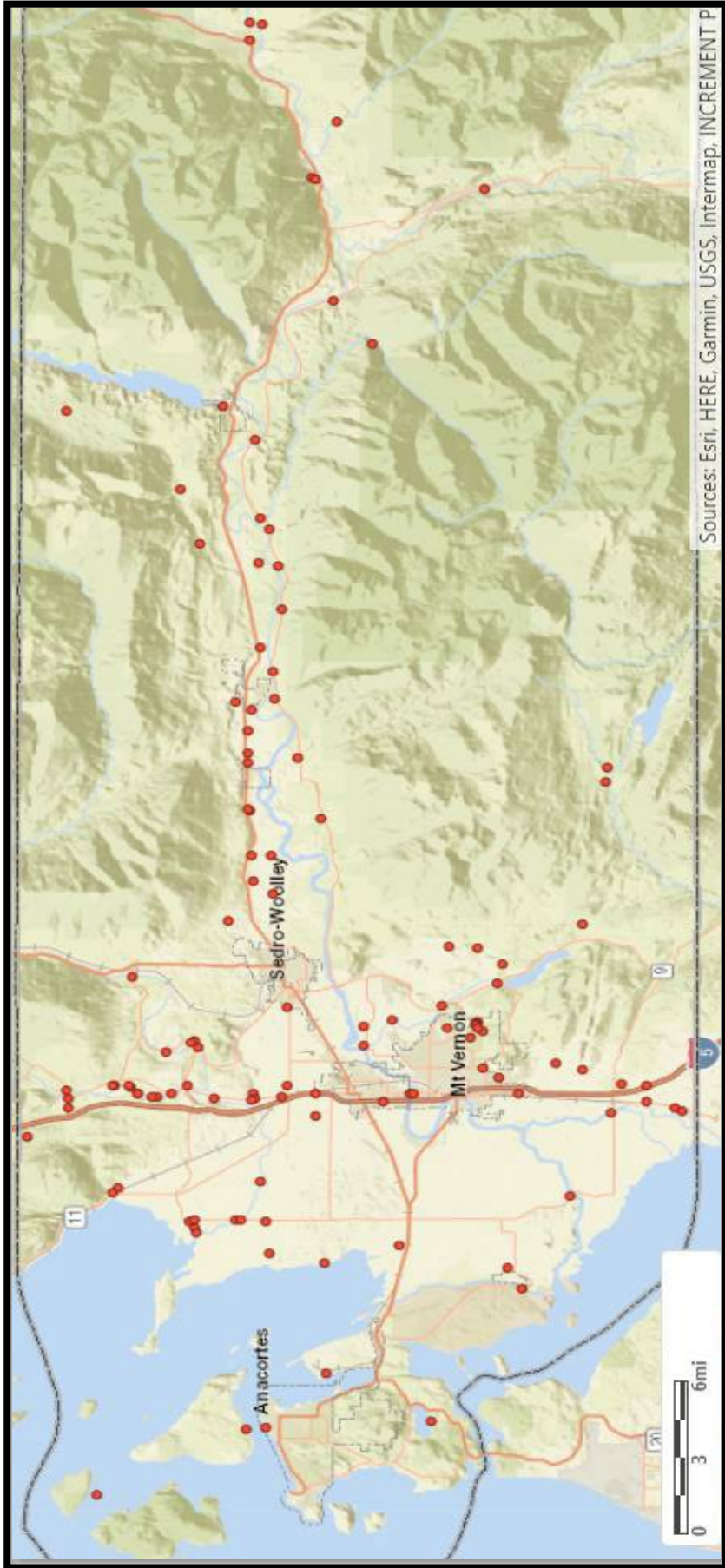
**Trestle**—a bridge structure consisting of beam spans supported upon bents. Trestles are usually made of timber and have numerous diagonal braces, both within each bent and from bent to bent.

**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 - INVENTORY

BRIDGE NUMBER	BRIDGE NAME	YEAR BUILT	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	SUFFICIENCY RATING
40113	OLD HWY 99 at THOMAS CR	1934	52	30.0	4,372	10	Timber	9.6 SD
40152	ANACORTES FERRY DOCK	1976	205	15.0	500	7	Steel	24.1 SD
40070	SKAGIT RIVER MARBLEMOUNT	1930	662	14.0	608	11	Steel	32.4 SD
40037	NORTH FORK BRIDGE	1959	726	24.0	4,276	7	Steel	42.9
40031	PULVER ROAD at JOE LEARY	1955	39	24.0	832	13	Concrete	42.9
40047	LK CAVANAUGH at PILCHUCK	1970	56	28.0	493	11	PS/PT Conc	42.9
40114	SAMISH RIVER BRIDGE	1934	385	24.0	3,700	13	Steel	45.5
40039	RAINBOW BRIDGE	1957	797	24.0	3,101	7	Steel	47.0
40099	GOVERNMENT BRIDGE	1930	304	14.0	158	11	Steel	48.0
40093	UPPER FINNEY CREEK BRIDGE	1952	217	14.9	41	10	Concrete	49.4
40153	GUEMES ISLAND FERRY DOCK	1981	165	15.0	500	7	Steel	50.2
40008	SOUTH FORK BRIDGE	1972	908	28.0	5,294	8	Steel	53.8
40090	DALLES BRIDGE	1952	506	26.0	2,562	6	Steel	57.5
40001	LAKE VIEW BLVD/NOOKACHAMPS	1954	77	25.5	821	8	Concrete	57.7
40091	CONCRETE-SAUK VALLEY TEMPORARY BR	2021	131	13.7	158	11	Steel	58.2
40156	CEDARDALE RD at CARPENTER CR	1934	83	36.0	584	13	Timber	60.8
40115	OLD HWY 99 at FRIDAY CR	1956	122	26.0	2,682	8	Concrete	60.9
40072	CASCADE RIVER RD at MONOGRAM	1979	22	26.0	280	11	Concrete	63.8
40063	LYMAN HAMILTON HWY at CHILDS CR	1948	32	24.0	726	7	PS/PT Conc	64.7
40131	LYMAN HAMILTON HWY at MANNSEY CR	1954	52	26.0	260	6	Concrete	68.2
40004	FRANCIS RD at SLOUGH	1958	50	24.0	4,395	5	Concrete	68.4
40076	CASCADE RIVER RD at HARD CR	2016	46	17.7	460	8	Concrete	70.5
40075	CASCADE RIVER RD at SIBLEY CR	1997	23	28.0	280	11	Concrete	71.4
40132	LYMAN HAMILTON HWY at JONES CR	1955	52	26.0	250	9	Concrete	72.3
40101	BAKER LAKE RD at BEAR CR	1966	85	26.0	430	13	PS/PT Conc	73.5
40082	S SKAGIT HWY at LORETTA CR	1961	85	24.0	631	5	PS/PT Conc	74.5
40109	LAKE SAMISH RD at FRIDAY CR	1965	53	26.0	5,124	6	PS/PT Conc	74.5
40043	CONWAY HILL @ CARPENTER	1980	58	14.0	77	9	PS/PT Conc	76.0
40141	BAY VIEW STATE PARK	1969	62	26.0	751	10	PS/PT Conc	76.1
40077	CASCADE RIVER RD at MINERAL PARK	1986	71	18.0	280	11	PS/PT Conc	76.6
40003	FRANCIS at NOOKACHAMPS	1979	130	28.0	4,395	5	Concrete	76.8
40038	LACONNER WHITNEY at SL	1962	68	26.0	4,982	6	PS/PT Conc	77.1
40017	PRAIRIE RD FRIDAY CK	1975	78	28.0	2,757	9	PS/PT Conc	77.7
40116	OLD HWY 99 at SILVER CR	1934	38	25.0	1,687	9	Concrete	78.1
40089	S SKAGIT HWY at FINNEY CR	1954	120	26.0	631	5	Steel	78.1
40036	FARM-TO-MARKET JOE LEARY	1950	72	26.0	1,905	7	Concrete	79.3
40142	CAMPBELL LAKE OUTLET	1962	19	20.0	57	4	Concrete	79.4
40028	BAY VIEW-EDISON at SAMISH R	1965	223	26.0	784	6	Concrete	79.6
40083	S SKAGIT HWY at CUMBERLAND CR	1961	50	24.0	631	5	PS/PT Conc	79.7
40020	FRIDAY CREEK 3RD BRIDGE	1961	61	20.0	165	8	PS/PT Conc	79.9
40021	FRIDAY CREEK 4TH BRIDGE	1961	61	20.0	144	9	PS/PT Conc	80.0
40018	FRIDAY CREEK 1ST BRIDGE	1962	61	20.0	165	8	PS/PT Conc	80.4
40055	PRAIRIE RD E at SAMISH R	1956	75	24.4	894	10	Concrete	80.7
40088	S SKAGIT HWY at PRESENTIN CR	1966	85	27.0	631	5	PS/PT Conc	80.7
40081	S SKAGIT HWY at DAY CR	1961	160	24.0	631	5	PS/PT Conc	80.8
40086	S SKAGIT HWY at MILL CR	1969	41	28.0	631	9	PS/PT Conc	80.8
40106	LAKE SAMISH RD at BEAR CR	1959	50	24.0	491	6	Concrete	81.3
40052	TAYLOR RD at WALKER CK	1985	42	16.0	52	13	PS/PT Conc	81.9
40151	NICHOLSON at CHILDS CR	1979	29	15.0	40	5	Concrete	82.0
40140	BAKER LAKE RD at E GRANDY CR	1968	41	28.0	694	12	PS/PT Conc	82.0

BRIDGE NUMBER	BRIDGE NAME	YEAR BUILT	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	SUFFICIENCY RATING
40130	LYMAN HAMILTON HWY at RED CABIN CR	1954	22	26.0	250	9	Concrete	82.1
40034	FARM-TO-MARKET SAMISH R	1963	158	26.0	1,187	8	Concrete	82.2
40002	SWAN ROAD at NOOKACHAMPS	1976	126	28.0	1,100	8	Concrete	84.2
40066	HAMILTON CEMETERY RD at MUDDY CR	1965	50	26.0	258	9	Concrete	84.3
40046	LK CAVANAUGH RD at BEAR	1967	51	28.5	493	11	PS/PT Conc	84.6
40026	FARM-TO-MARKET N DITCH	1951	32	26.0	1,554	8	Concrete	84.8
40042	MILLTOWN at BIG DITCH	1957	50	24.2	408	9	Concrete	84.8
40029	BAY VIEW-EDISON JOE LEARY	1955	101	30.0	588	8	Concrete	84.9 SD
40084	S SKAGIT HWY at O'TOOLE CR	1959	66	24.0	631	9	PS/PT Conc	84.9
40157	BENSON RIDGE LN at CARPENTER CR	1983	52	30.0	46	4	Timber	85.0
40071	CASCADE RIVER BRIDGE	1967	180	26.0	336	7	Concrete	85.2
40015	PRAIRIE RD S at SAMISH R	1974	83	28.0	1,583	9	PS/PT Conc	85.4
40032	FARM-TO-MARKET S DITCH	1950	21	26.0	1,331	6	Concrete	86.2
40033	FARM-TO-MARKET at NEUMAN	1950	60	26.0	1,187	8	Concrete	86.2
40065	CONRAD RD at SUTTER CR	2011	73	15.7	91	3	PS/PT Conc	86.2
40027	BAY VIEW-EDISON at SAMISH SL	1965	38	26.8	784	6	PS/PT Conc	86.5
40074	CASCADE RIVER RD at MARBLE CR	1982	120	26.0	280	11	PS/PT Conc	86.7
40061	MINKLER RD at WISEMAN CR	1967	40	28.0	1,024	7	Concrete	87.3
40126	MARCHS POINT PIPELINE	1960	44	28.0	996	25	Concrete	87.5
40073	CASCADE RIVER ROAD AT LOOKOUT CR	1981	191	28.0	125	5	Steel	87.9
40062	UTOPIA RD at BLACK SLOUGH	1984	141	26.0	110	7	Concrete	88.9
40016	PRAIRIE RD W at SAMISH R	1975	104	28.0	1,539	11	PS/PT Conc	89.1
40120	BAKER LAKE RD at W FORK GRANDY CR	1968	62	28.0	694	12	PS/PT Conc	90.2
40067	CAPE HORN RD at ALDER CR	1972	41	28.0	187	5	PS/PT Conc	90.3
40060	BURMASTER RD at COAL CR	1958	26	24.0	229	5	Concrete	91.4
40094A	ROCKPORT CASCADE at ILLABOT CR	1970	93	28.0	197	7	PS/PT Conc	91.4
40023	FRIDAY CREEK 6TH BRIDGE	1963	61	24.0	144	9	PS/PT Conc	91.5
40024	FRIDAY CREEK 7TH BRIDGE	1964	61	24.0	144	9	PS/PT Conc	91.5
40041	E PETER JOHNSON RD	1981	54	24.0	63	14	PS/PT Conc	92.4
40005	NOOKACHAMP HILLS CULVERT	2008	30	0.0	250	4	Aluminum	92.7
40012	COOK RD at BRICKYARD CK	2000	54	44.0	14,215	10	PS/PT Conc	92.7
40161	FLINN ROAD at MCELROY SLOUGH	2006	48	19.5	20	0	PS/PT Conc	92.8
40009	COOK RD at DD14 DITCH	2000	38	40.0	13,903	9	PS/PT Conc	93.7
40080	S SKAGIT HWY at PARKER CR	1996	26	0.0	1,584	11	Concrete	93.7
40044	PIONEER HWY at BIG DITCH	1987	81	37.0	8,445	8	PS/PT Conc	93.8
40045	PIONEER HWY at FISHER SL	1987	114	37.2	8,445	8	PS/PT Conc	94.0
40013	F&S GRADE SAMISH RIVER	1974	102	28.0	630	10	PS/PT Conc	94.2 SD
40112	NEFFS CROSSING	2006	108	41.0	4,372	10	PS/PT Conc	94.4
40068	CAPE HORN RD at GRANDY CR	1967	51	28.0	342	7	PS/PT Conc	95.2
40014	GRIPP RD at SAMISH R	1976	84	28.0	679	12	PS/PT Conc	95.5
40011	GREEN RD at THOMAS CK	1958	51	24.0	71	8	Concrete	96.0
40030	THOMAS RD at SAMISH R	1973	91	28.0	216	23	PS/PT Conc	96.3
40051	BEAVER LAKE RD at NOOKACHAMPS	1977	73	28.6	144	9	PS/PT Conc	96.7
40159	MINKLER RD at COAL CR	1984	29	36.0	933	11	Concrete	96.8
40117	ALGER CAIN LAKE RD at SILVER CR	1992	102	34.2	4,286	5	PS/PT Conc	97.0
40092	CONCRETE-SAUK VALLEY at MILLER CR	1999	27	0.0	1,036	13	Concrete	97.0
40085	S SKAGIT HWY at DAVIS SLOUGH	2014	63	34.9	594	9	PS/PT Conc	97.5
40019	FRIDAY CREEK 2ND BRIDGE	1979	74	28.0	165	8	PS/PT Conc	97.6
40025	FRIDAY CREEK 8TH BRIDGE	1977	59	28.0	144	9	PS/PT Conc	97.6
40054	KNAPP RD at NOOKACHAMPS	1977	73	28.0	382	10	PS/PT Conc	97.7



BRIDGE NUMBER	BRIDGE NAME	YEAR BUILT	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	SUFFICIENCY RATING
40129	LYMAN HAMILTON HWY at MUDDY CR	1997	65	30.0	198	4	PS/PT Conc	98.0
40095	ROCKPORT CASCADE RD at JORDAN CR	1969	56	28.0	297	10	Concrete	98.2
40022	FRIDAY CREEK 5TH BRIDGE	1977	69	28.0	144	9	PS/PT Conc	98.3
40110	BURLINGTON NORTHERN OVERPASS	2018	395	38.0	4,674	12	PS/PT Conc	98.6
40094B	RYAN CROSSING at ILLABOT CR	2018	106	27.4	197	7	PS/PT Conc	98.7
40094C	HOLLOW CEDAR at ILLABOT CR	2018	106	27.4	197	7	PS/PT Conc	98.7
40048	LK CAVANAUGH RD CULVERT	1998	21	30.0	609	15	Aluminum	98.8
40164	S LAVENTURE RD at MADDOX CR	2013	80	50.0	8,284	5	PS/PT Conc	98.8
40069	CONRAD RD at SWIFT CR	1981	38	24.0	91	2	PS/PT Conc	99.0
40035	BAY VIEW-EDISON / BIG INDIAN	1992	71	34.1	1,176	8	PS/PT Conc	99.6
40162	BLANCHARD RD at MCELROY SLOUGH	2007	28	26.0	40	1	Concrete	99.9
40163	HELMICK RD at RED CR	2007	150	36.0	642	8	PS/PT Conc	99.9
<b>LOCAL AGENCY BRIDGES</b>								
BRIDGE NUMBER	BRIDGE NAME	YEAR BUILT	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	SUFFICIENCY RATING
<b>CITY OF BURLINGTON</b>								
BURLINN-2	NORTH BURLINGTON BLVD	1997	26	34.0	4,635	12	PS/PT Conc	95.9
BURLINN-3	GOLDENROD BRIDGE	2005	116	40.0	2,679	9	PS/PT Conc	99.3
<b>TOWN OF CONCRETE</b>								
CONCRETE1	BAKER RIVER	1916	269	18.0	137	11	Concrete	21.9
<b>CITY OF MOUNT VERNON</b>								
MV-1	RIVERSIDE BRIDGE	2004	850	60.0	21,640	10	PS/PT Conc	90.7
MV-2	HOAG STEWARD OVERPASS	2003	60	65.0	24,455	5	PS/PT Conc	88.9
MV-3	ELEANOR LANE A	2006	32	30.0	440	7	Concrete	90.9
MV-4	SKAGIT HIGHLANDS PARKWAY	2003	37	0.0	800	5	Concrete	99.9
MV-5	LANDMARK DRIVE	1994	52	28.0	500	5	PS/PT Conc	99.0
MV-6	EAGLEMONT DRIVE	1995	20	0.0	800	5	Aluminum	99.9
MV-7	J OFF BEAVER POND DR S	2006	26	19.0	50	1	Aluminum	92.5
MV-8	BEAVER POND DR SOUTH	2004	29	28.0	200	5	PS/PT Conc	100.0
MV-9	BEAVER POND DR NORTH B	2002	54	28.0	300	5	PS/PT Conc	100.0
MV-10	OLYMPIC LANE	2004	67	22.0	50	5	Concrete	99.0
MV-11	BEAVER POND DR NORTH A	2001	42	28.0	400	5	PS/PT Conc	100.0
MV-12	LAVENTURE RD CULVERT	2010	29	44.0	8,735	4	Concrete	99.2
<b>CITY OF SEDRO WOOLLEY</b>								
SW-1	KLINGER STREET BRIDGE	2002	34	36.0	1,620	5	PS/PT Conc	99.9
SW-2	NORTH REED STREET BRIDGE	2002	30	40.0	1,031	5	PS/PT Conc	97.9

## APPENDIX B - INSPECTION SCHEDULE

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSP.	INSP. HRS	INSP. TYPE
<b>2022 INSPECTIONS</b>					↓		
40008	SOUTH FORK BRIDGE	1.0 W JCT INTERSTATE 5	3/2/20	24	Mar-22	3.5	RTN
40037	NORTH FORK BRIDGE	5.5 W JCT INTERSTATE 5	3/3/20	24	Mar-22	4	FC
40070	SKAGIT RIVER MARBLEMOUNT	0.03 E JCT SR 20	3/4/20	24	Mar-22	10	FC
40114	SAMISH RIVER BRIDGE	2.6 N JCT COOK RD.	3/9/20	24	Mar-22	3	FC
40090	DALLES BRIDGE	1.5 S JCT SR 20	3/10/20	24	Mar-22	6	FC
40099	GOVERNMENT BRIDGE	0.14 NW JCT SR 530	3/11/20	24	Mar-22	5	FC
40113	OLD HWY 99 at THOMAS CR	1.4 N JCT COOK RD.	9/15/21	6	Mar-22	0.5	INTR
40073	CASCADE RIVER RD AT LOOKOUT CR	7.04 E JCT SR 20	3/18/20	24	Mar-22	1	RTN
40039	RAINBOW BRIDGE	0.95 JCT MORRIS ON MAPLE	7/21/20	24	Apr-22	6.5	FC
40093	UPPER FINNEY CREEK BRIDGE	4.6 W CONC SAUK VALLEY RD	4/17/20	24	Apr-22	1.5	RTN
40060	BURMASTER RD at COAL CR	1.2 E JCT MINKLER	5/8/20	24	May-22	1	RTN
40061	MINKLER RD at WISEMAN CR	0.5 W JCT SR 20	5/8/20	24	May-22	1	RTN
40063	LYMAN HAMILTON HWY at CHILDS CR	0.8 E JCT SR 20	5/8/20	24	May-22	1	RTN
40151	NICHOLSON at CHILDS CR	0.1 S JCT SR 20	5/8/20	24	May-22	0.5	RTN
40159	MINKLER RD at COAL CR	0.1 E JCT SIMS RD	5/8/20	24	May-22	1	RTN
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	5/15/17	60	May-22	2	UW
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	5/16/17	60	May-22	4	UW
40129	LYMAN HAMILTON HWY at MUDDY CR	0.3 M W HAMILTON	5/19/20	24	May-22	1	RTN
40130	LYMAN HAMILTON HWY at RED CABIN CR	0.18 E JCT HEALY RD	5/19/20	24	May-22	1	RTN
40131	LYMAN HAMILTON HWY at MANNSEY CR	0.17 W JCT HAMIL CEM RD	5/19/20	24	May-22	1	RTN
40132	LYMAN HAMILTON HWY at JONES CR	0.28 E JCT PIPELINE RD	5/19/20	24	May-22	1	RTN
40066	HAMILTON CEMETERY RD at MUDDY CR	0.5 W JCT SR 20	5/27/20	24	May-22	1	RTN
40067	CAPE HORN RD at ALDER CR	0.75 E JCT SR 20	5/27/20	24	May-22	1	RTN
40068	CAPE HORN RD at GRANDY CR	2.25 W JCT SR 20	5/27/20	24	May-22	1	RTN
40069	CONRAD RD at SWIFT CR	0.2 E JCT SR 20	6/10/20	24	Jun-22	1	RTN
40092	CONCRETE-SAUK VALLEY at MILLER CR	CONCRETE-SAUK VALLEY RD	6/10/20	24	Jun-22	1	RTN
40094A	ROCKPORT CASCADE at ILLABOT CR	4.2 E JCT SR 530	6/10/20	24	Jun-22	1	RTN
40095	ROCKPORT CASCADE RD at JORDAN CR	0.71 SW JCT N CASCADE HW	6/10/20	24	Jun-22	1	RTN
40072	CASCADE RIVER RD at MONOGRAM	7.37 E JCT SR 20	6/23/20	24	Jun-22	0.5	SHRT
40074	CASCADE RIVER RD at MARBLE CR	8.3 E JCT SR 20	6/23/20	24	Jun-22	1	RTN
40075	CASCADE RIVER RD at SIBLEY CR	10 E JCT SR 20	6/23/20	24	Jun-22	1	RTN
40076	CASCADE RIVER RD at HARD CR	12.7 E JCT SR 20	6/23/20	24	Jun-22	1	RTN
40077	CASCADE RIVER RD at MINERAL PARK	16.02 E JCT SR 20	6/23/20	24	Jun-22	1	RTN
40027	BAY VIEW-EDISON at SAMISH SL	0.4 W JCT FARM TO MARKET	6/24/20	24	Jun-22	1	RTN
40028	BAY VIEW-EDISON at SAMISH R	0.5 W JCT SR 537	6/24/20	24	Jun-22	2	RTN
40046	LK CAVANAUGH RD at BEAR	8.0 E JCT SR 9	7/10/20	24	Jul-22	1	RTN
40047	LK CAVANAUGH at PILCHUCK	8.7 E JCT SR 9	7/10/20	24	Jul-22	1	RTN
40048	LK CAVANAUGH RD CULVERT	1.1 SE JCT SR 9	7/10/20	24	Jul-22	1	RTN
40080	S SKAGIT HWY at PARKER CR	7.25 E JCT SR-9	7/15/20	24	Jul-22	1	RTN
40081	S SKAGIT HWY at DAY CR	9.0 E JCT SR 9	7/15/20	24	Jul-22	1	RTN
40082	S SKAGIT HWY at LORETTA CR	10.0 E JCT SR 9	7/15/20	24	Jul-22	1	RTN
40083	S SKAGIT HWY at CUMBERLAND CR	11.5 E JCT SR 9	7/15/20	24	Jul-22	1	RTN
40101	BAKER LAKE RD at BEAR CR	9.5 NE JCT SR 20	7/15/20	24	Jul-22	1	RTN
40120	BAKER LAKE RD at W FORK GRANDY CR	2. NE JCT SR 20	7/15/20	24	Jul-22	1	RTN
40140	BAKER LAKE RD at E GRANDY CR	4.0 NE JCT SR 20	7/15/20	24	Jul-22	1	RTN
40042	MILLTOWN at BIG DITCH	0.02 E JCT SR 530	7/22/20	24	Jul-22	0.5	RTN
40043	CONWAY HILL @ CARPENTER	0.5 E JCT INTERSTATE 5	7/22/20	24	Jul-22	0.5	RTN
40044	PIONEER HWY at BIG DITCH	0.23 E JCT MILLTOWN RD	7/22/20	24	Jul-22	1	RTN
40045	PIONEER HWY at FISHER SL	1.5 SW JCT INTERSTATE 5	7/22/20	24	Jul-22	1	RTN
40084	S SKAGIT HWY at O'TOOLE CR	15.0 E JCT SR 9	7/29/20	24	Jul-22	1	RTN
40086	S SKAGIT HWY at MILL CR	17.0 E JCT SR9	7/29/20	24	Jul-22	1	RTN
40088	S SKAGIT HWY at PRESENTIN CR	18.5 E JCT SR9	7/29/20	24	Jul-22	1	RTN
40089	S SKAGIT HWY at FINNEY CR	19.0 E JCT SR 9	7/29/20	24	Jul-22	1	RTN

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSP.	INSP. HRS	INSP. TYPE
40003	FRANCIS at NOOKACHAMPS	2.8 W JCT SR9	8/12/20	24	Aug-22	1	RTN
40004	FRANCIS RD at SLOUGH	2.0 W JCT SR9	8/12/20	24	Aug-22	1	RTN
40002	SWAN RD at NOOKACHAMPS	0.37W JCT BABCOCK/MUDLAKE	8/12/20	24	Aug-22	1	RTN
40051	BEAVER LAKE RD at NOOKACHAMPS	3.0 SE JCT SR 9	8/20/20	24	Aug-22	1	RTN
40052	TAYLOR RD at WALKER CR	4.3 E JCT SR 9	8/20/20	24	Aug-22	1	RTN
40113	OLD HWY 99 at THOMAS CR	1.4 N JCT COOK RD.	8/20/20	24	Aug-22	1	RTN
40156	CEDARDALE RD at CARPENTER CR	0.75 S JCT SR 534	8/20/20	24	Aug-22	1	RTN
40011	GREEN RD at THOMAS CR	0.01 S KELLEHER RD	9/9/20	24	Sep-22	1	RTN
40157	BENSON RIDGE LN at CARPENTER CR	1.2 E I-5 JCT STACKPOLE	9/9/20	24	Sep-22	1	RTN
MV-12	LAVENTURE RD CULVERT	NORTH OF BLACKBURN	9/9/20	24	Sep-22	1	RTN
40113	OLD HWY 99 at THOMAS CR	1.4 N JCT COOK RD.	3/1/22	6	Sep-22	0.5	INTR
40094B	RYAN CROSSING at ILLABOT CR	4.2 E JCT SR 530	9/16/20	24	Sep-22	1	RTN
40094C	HOLLOW CEDAR at ILLABOT CR	4.2 E JCT SR 530	9/16/20	24	Sep-22	1	RTN
40037	NORTH FORK BRIDGE	5.5 W JCT INTERSTATE 5	9/25/17	60	Sep-22	1.5	UW
MV-1	RIVERSIDE BRIDGE	0.7 N JCT SR 538	9/25/17	60	Sep-22	1.5	UW
SW-1	KLINGER STREET BRIDGE	0.2 MI N of COOK RD	9/30/20	24	Sep-22	1	RTN
SW-2	NORTH REED STREET BRIDGE	0.4 MI N of SR20	9/30/20	24	Sep-22	1	RTN
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	10/21/20	24	Oct-22	2	FC
40153	GUEMES ISLAND FERRY DOCK	GUEMES ISLAND	10/21/20	24	Oct-22	2	FC
<b>2023 INSPECTIONS</b>							
40018	FRIDAY CREEK 1ST BRIDGE	0.45 N JCT OLD HWY 99 N	5/5/21	24	May-23	1	RTN
40019	FRIDAY CREEK 2ND BRIDGE	0.59 N JCT OLD 99	5/5/21	24	May-23	1	RTN
40020	FRIDAY CREEK 3RD BRIDGE	0.3 N. of JCT w/ Old 99	5/5/21	24	May-23	1	RTN
40021	FRIDAY CREEK 4TH BRIDGE	0.4 N JCT OLD 99	5/5/21	24	May-23	1	RTN
40022	FRIDAY CREEK 5TH BRIDGE	1.55 N JCT Old 99	5/24/21	24	May-23	1	RTN
40023	FRIDAY CREEK 6TH BRIDGE	0.6 N JCT OLD 99 N	5/24/21	24	May-23	1	RTN
40024	FRIDAY CREEK 7TH BRIDGE	2.16 N JCT OLD 99 N	5/24/21	24	May-23	1	RTN
40025	FRIDAY CREEK 8TH BRIDGE	2.24 N JCT OLD 99 N	5/24/21	24	May-23	1	RTN
40115	OLD HWY 99 at FRIDAY CR	4.3 N JCT COOK RD.	5/24/21	24	May-23	1	RTN
40116	OLD HWY 99 at SILVER CR	0.4 SE JCT LAKE SAMISH RD	5/24/21	24	May-23	1	RTN
40106	LAKE SAMISH RD at BEAR CR	2.0 NW JCT I-5	5/26/21	24	May-23	1	RTN
40109	LAKE SAMISH RD at FRIDAY CR	0.25 E JCT INTERSTATE 5	5/26/21	24	May-23	1	RTN
40117	ALGER CAIN LAKE RD at SILVER CR	0.34 E JCT OLD HWY 99	5/26/21	24	May-23	1	RTN
40091	CONCRETE-SAUK VALLEY TEMPORARY BR	13.2 MI SE OF SR 20	6/2/21	24	Jun-23	2.5	RTN
40026	FARM-TO-MARKET N DITCH	7.7 N JCT SR 20	6/16/21	24	Jun-23	1	RTN
40161	FLINN RD at MCELROY SLOUGH	300 Ft E Blanchard Rd	6/16/21	24	Jun-23	1	RTN
40162	BLANCHARD RD at MCELROY SLOUGH	0.05 N JCT LEGG RD	6/16/21	24	Jun-23	1	RTN
40036	FARM-TO-MARKET JOE LEARY	5.0 N JCT SR 20	6/23/21	24	Jun-23	1	RTN
40032	FARM-TO-MARKET S DITCH	7.5 N JCT SR 20	6/26/19	48	Jun-23	1	SHRT
40030	THOMAS RD at SAMISH R	0.3 N JCT ALLEN WEST RD	6/30/21	24	Jun-23	1	RTN
40033	FARM-TO-MARKET at NEUMAN	6.1 N JCT SR20	6/30/21	24	Jun-23	1	RTN
40034	FARM-TO-MARKET SAMISH R	5.9 N JCT SR 20	6/30/21	24	Jun-23	1	RTN
40065	CONRAD RD at SUTTER CR	0.59 E JCT SR20	6/30/21	24	Jun-23	1	RTN
40071	CASCADE RIVER BRIDGE	0.04 S JCT CASCADE RD	6/30/21	24	Jun-23	2	RTN
40085	S SKAGIT HWY at DAVIS SLOUGH	13.9 E JCT SR-9	6/30/21	24	Jun-23	1	RTN
40029	BAY VIEW-EDISON JOE LEARY	5.8 N JCT SR-20	7/15/21	24	Jul-23	2	RTN
40031	PULVER RD at JOE LEARY	.6 S JCT SR 11	7/15/21	24	Jul-23	1	RTN
40035	BAY VIEW-EDISON / BIG INDIAN	0.4 N JCT SR20	7/15/21	24	Jul-23	1	RTN
40141	BAY VIEW STATE PARK	3.5 N JCT SR 20	7/15/21	24	Jul-23	1	RTN
40062	UTOPIA RD at BLACK SLOUGH	0.5 E JCT Hoehn RD	7/22/21	24	Jul-23	1.5	RTN
40163	HELMICK RD at RED CR	1.1 N JCT SR 20	7/22/21	24	Jul-23	1.5	RTN
40110	BURLINGTON NORTHERN OVERPASS	0.25 N JCT COOK RD	7/29/21	24	Jul-23	10	RTN
40005	NOOKACHAMP HILLS CULVERT	0.75 E JCT SR 9	8/18/21	24	Aug-23	1	RTN
40001	LAKE VIEW BLVD/NOOKACHAMPS	0.25 S JCT SR9	8/18/21	24	Aug-23	1	RTN

BRIDGE NUMBER	BRIDGE NAME	LOCATION	LAST INSPECTION	INSP. FREQ.	NEXT INSP.	INSP. HRS	INSP. TYPE
40054	KNAPP RD at NOOKACHAMPS	0.1 E JCT SR 9	8/18/21	24	Aug-23	1	RTN
40009	COOK RD at DD14 DITCH	0.5 E JCT INTERSTATE 5	8/25/21	24	Aug-23	1	RTN
40012	COOK RD at BRICRYARD CR	MP 5.38 COOK RD	8/25/21	24	Aug-23	1	RTN
40112	NEFFS CROSSING	1.0 N JCT COOK RD.	8/25/21	24	Aug-23	1	RTN
CONCRETE1	BAKER RIVER	0.1 N MAIN ST	8/30/21	24	Aug-23	1.5	RTN
MV-1	RIVERSIDE BRIDGE	0.7 N JCT SR 538	8/31/21	24	Aug-23	1.5	RTN
40041	E PETER JOHNSON RD	1.0 E JCT CEDARDALE RD	9/15/21	24	Sep-23	1	RTN
BURLINN-2	NORTH BURLINGTON BLVD	1.02 MI SO OF COOK RD	9/15/21	24	Sep-23	1	RTN
BURLINN-3	GOLDENROD BRIDGE	.3 N. of W. MCCORQUEDALE	9/15/21	24	Sep-23	1	RTN
40038	LACONNER WHITNEY at SL	3.83 S JCT SR 20	9/22/21	24	Sep-23	1	RTN
40126	MARCHS POINT PIPELINE	1.6 N JCT SR 20	9/22/21	24	Sep-23	1	RTN
40028	<del>BAY VIEW EDISON at SAMISH R</del>	<del>0.5 W JCT SR 537</del>	<del>9/24/18</del>	<del>60</del>	<del>Sep-23</del>	<del>1.5</del>	<del>UW</del>
40013	F&S GRADE SAMISH RIVER	0.14 S JCT PRAIRIE RD	9/24/21	24	Sep-23	1	RTN
40014	GRIPP RD at SAMISH R	0.1 E JCT PRAIRIE RD	9/24/21	24	Sep-23	1	RTN
40017	PRAIRIE RD FRIDAY CR	0.17 Mi E of OLD HWY 99	9/24/21	24	Sep-23	1	RTN
40055	PRAIRIE RD E at SAMISH R	0.5 W JCT SR 9	9/24/21	24	Sep-23	1	RTN
40008	SOUTH FORK BRIDGE	1.0 W JCT INTERSTATE 5	9/25/18	60	Sep-23	2.5	UW
40015	PRAIRIE RD S at SAMISH R	2.21 E JCT OLD HWY 99	9/29/21	24	Sep-23	1	RTN
40016	PRAIRIE RD W at SAMISH R	3.8 E JCT OLD HWY 99	9/29/21	24	Sep-23	1	RTN
40152	ANACORTES FERRY DOCK	0.41 N JCT SR 20	10/7/21	24	Oct-23	1	INTR
MV-2	HOAG STEWARD OVERPASS	RIVERSIDE DR JCT HOAG ST	10/27/21	24	Oct-23	1.5	RTN
MV-3	ELEANOR LANE A	0.1 E JCT OLD HIGHWAY 99	10/27/21	24	Oct-23	1	RTN
MV-4	SKAGIT HIGHLANDS PARKWAY	0.4 N JCT E DIVISION ST	10/27/21	24	Oct-23	0.5	RTN
MV-5	LANDMARK DRIVE	EAST OF JCT S WAUGH RD	10/20/21	24	Oct-23	1	RTN
MV-7	J OFF BEAVER POND DR S	0.07 SE JCT PARKVEIW LN	10/20/21	24	Oct-23	0.5	RTN
MV-8	BEAVER POND DR SOUTH	0.5 N JCT EAGLEMONT DR	10/20/21	24	Oct-23	1	RTN
MV-9	BEAVER POND DR NORTH B	AT JCT PARKVEIW LN	10/20/21	24	Oct-23	1	RTN
MV-10	OLYMPIC LANE	0.02 JCT BEAVER POND DR N	10/20/21	24	Oct-23	1	RTN
MV-11	BEAVER POND DR NORTH A	0.2 N JCT EAGLEMONT DR	10/20/21	24	Oct-23	1	RTN
40164	S LAVENTURE RD at MADDOX CR	0.5 E JCT I-5	10/27/21	24	Oct-23	1.5	RTN
<b>OTHER NOTABLE FUTURE INSPECTIONS</b>							
40073	CASCADE RIVER RD AT LOOKOUT CR	7.04 E JCT SR 20	3/18/20	48	Mar-24	3	EQU
40093	UPPER FINNEY CREEK BRIDGE	4.6 W CONC SAUK VALLEY RD	4/2/18	72	Mar-24	1.5	EQU
40142	CAMPBELL LAKE OUTLET	0.39 W JCT SR 20	9/22/21	48	Sep-25	1	SHRT
MV-6	EAGLEMONT DRIVE	0.1 S JCT BEAVER POND N	10/20/21	48	Oct-25	0.5	SHRT

## APPENDIX C - REPAIRS

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40001	LAKE VIEW BLVD/NOOKACHAMPS	1	Brush exposed rebar and patch spalls in the soffit and girders.	
		2	Sidewalk: Repair sidewalk approach where rebar is exposed (north end).	
		3	Upgrade rails to meet current standards.	
		M	Bank protection: armor missing upstream end on the right bank.	
40002	SWAN ROAD at NOOKACHAMPS	1	Raise approach rail to minimum height.	
		1	Numerous blockouts are split or rotten along southern bridge rail near midspan.	
		2	Approach Rail - Post #8 NE quadrant needs replaced, suffering from termites	
		3	Sweep deck - vegetation growing along concrete curb.	12-Aug-20
		3	Missing nut on bridge rail post, NW corner.	
		3	Paint steel diaphragm / cross bracing.	
		M	Two large trees fallen upstream of bridge. MONITOR	12-Aug-20
40003	FRANCIS at NOOKACHAMPS	1	Level approaches at both ends of bridge.	
		3	Remove sand and rat droppings from abutments and pier caps	
		3	Remove BST overspray	
40004	FRANCIS RD at SLOUGH	1	Remove grass and sod from between edge of pavement and rail. Backfill with HMA.	12-Aug-20
		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. TTK/WAW)	
		1	Remove timber debris from Pier 3 (and Pier 2 if any is visible at time of repair).	
		2	Update Load Rating tab codes to reflect values from the most recent Load Rating Report.	02-Mar-20
		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. TTK/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.).	
		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". TTK/WAW)	
40009	COOK RD at DD14 DITCH	1	Crack seal transverse cracks at both ends of bridge	
		3	Patch spall with grout in G2 near east abutment	
		3	Grout open crack in NE corner of concrete rail	
		3	SE guardrail is not fastened to 7th and 8th posts	
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 transverse cracking over each bridge joint. and longitudinal cracking in pavement (updated 2021)	
40013	F&S GRADE SAMISH RIVER	1	Patch exposed rebar in deck, apprx 4 linear feet	
		2	A/C level roadway / shoulder approaches	
		3	Rehabilitate bridge deck - seek grant funding.	
40014	GRIPP RD at SAMISH R	2	A/C level east approach	
		3	Repair: patch spall in the wingwall.	
		M	MONITOR: Bridge is bypassable, right upstream channel protection is starting to slump into river and needs to be monitored after high water events.	
		M	Timber rail posts show many checks.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40015	PRAIRIE RD S at SAMISH R	1	Missing armoring 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.	
		3	Brush and patch exposed rebars in top flange of girders.	
40016	PRAIRIE RD W at SAMISH R	1	Impact damage to NW section of guardrail.	02-Aug-21
		2	Impact damage to NW section of guardrail.	
		M	Scour protection damaged during high water event - Monitor stability	29-Sep-21
40017	PRAIRIE RD FRIDAY CK	2	Spalls on upstream curb.	
		M	Continue to monitor channel migration to the east.	
40018	FRIDAY CREEK 1ST BRIDGE	1	Patch sink hole in south approach at Centerline.	07-May-21
		2	Patch exposed rebar in girders #1 #2 #3 & #4 and soffits.	
		2	Replace scoured armoring on abutment #2 (south)	
		3	Remove flaking protective coating on rail posts and reapply or upgrade bridge rails to current standards.	
40019	FRIDAY CREEK 2ND BRIDGE	1	NW section of guardrail, 1st post needs replacing.	05-May-21
		3	Patch spalls in girders with exposed rebar	
40020	FRIDAY CREEK 3RD BRIDGE	2	Drain: repair drain downspout on upstream side - it has broken off.	
		3	Brush and paint guardrail posts or upgrade to standard	
		3	Pressure wash moss off curbing and girders	
		M	Monitor armor loss 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	
		3	Upgrade guardrail to standard.	
		3	SE drain pipe needs repairs	
		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.	
40023	FRIDAY CREEK 6TH BRIDGE	1	Patch south approach - sink hole	24-May-21
		2	Brush and patch rusty exposed rebar in the girders.	
		3	Remove ivy from abutment wall.	24-May-21
		3	Bridge curbing, girders and soffits need pressure washed.	
		3	Replace missing down spout on drain	
M	Monitor deformation in bearing pads.			
40024	FRIDAY CREEK 7TH BRIDGE	2	Wire brush and patch areas of rusty exposed rebar in girders	
		3	Remove failed protective coating on rail posts and reapply.	
		3	Pressure wash curbs and girders	
		M	Armor sloughing under abutment	
40025	FRIDAY CREEK 8TH BRIDGE	3	Wire brush and grout exposed rusty rebar in girders.	
		M	Monitor exposed abutment #2 cap.	
40026	FARM-TO-MARKET N DITCH	3	Patch spall on outside of rail at connection (8th post from North)	
40027	BAY VIEW-EDISON at SAMISH SL	2	Sweep shoulders between bridge rail and BST	24-Jun-20
		2	Brush and patch spalls with exposed rebar in the girders.	
		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	Deck needs rehab - suggest a modified polymer overlay	30-Jun-21
		1	Backfill material loss under slumping SW gabion	
		1	Recently repaired drainage in SW corner could use additional patching/material (much worse 2021)	
		1	Patch newly exposed rebar in the deck	
		2	Guardrail - 1st post on NE quadrant and SE quadrant are broken and rotten and need replaced.	
		3	Guardrail - block out missing in southwest leg.	
M	Sink hole found along southern bank, just upstream of Pier 2			
40030	THOMAS RD at SAMISH R	2	Replace missing bolts and nuts (3) on bridge rails. Updated 2021	
		2	Brush and patch spalls in the girders	
		3	Remove barb wire fence from under bridge. Restricting access.	30-Jun-21
40031	PULVER ROAD at JOE LEARY	1	Seal deck with a membrane, to prevent further spalling and corrosion of the rebar.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		1	Paint bridge rails and posts. See photo.	
		2	Brush and patch spalls in the girders.	
		3	Repair Bridge Rail on southeast corner of bridge, it appears to have been struck.	
		M	Monitor the south abutment soil migration, there is a gap between the abutment cap and the ground. Piles are showing.	
40033	FARM-TO-MARKET at NEUMAN	3	Patch unraveling chipseal.	30-Jun-21
		M	Settlement in North approach.	
40034	FARM-TO-MARKET SAMISH R	1	Some woody debris still needs removed at bent# 5	30-Jun-21
		2	Guardrail has come detached from post - NE transition	30-Jun-21
		2	Rails: Upgrade transition rails to meet current stds.	
		3	Repair object marker post - NE corner.	30-Jun-21
40035	BAY VIEW-EDISON / BIG INDIAN	2	SE guardrail missing 4 nuts and 1 bolt.	
		3	Brush and patch exposed rebar in girders.	
40036	FARM-TO-MARKET JOE LEARY	2	Sweep deck/unplug drains.	
		3	Brush and patch spalls in slab	
		M	Repetitive issue of approach settlement. Long term repair may require dig out and install of a backwall support (gabion baskets), and backfill with suitable material.	
40037	NORTH FORK BRIDGE	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.	
		1	Repair channel markers to restore them to a functional state.	
		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
		2	Repair or replace both east and west abutment slope drains to prevent further erosion. (3/3/2020 - Added west abutment drain to repair. TTK/WAW)	
		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).	
		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.	
40038	LACONNER WHITNEY at SL	1	Remove vegetation from the bridge ends.	22-Sep-21
		2	Scuppers need cleaning out.	22-Sep-21
		2	Paint the bridge rail posts, are peeling and rusty.	
40039	RAINBOW BRIDGE	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.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		1	Clear trees/shrubs away from bridge at Pier 4 to make room for UBIT access. (Minor trimming was completed in 2020 - JAC/MA)	30-Jun-21
		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	Post bridge for weight restrictions	
		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	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.	
		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	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	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.	
		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)	
		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)	
		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)	
		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)	
40041	E PETER JOHNSON RD	2	Clean out deposited sediment on top of pier cap.	
		3	Steel diaphragms need paint treatment.	
40043	CONWAY HILL @ CARPENTER	1	Crack seal longitudinal cracking in east approach road.	22-Jul-20
		3	Clear vegetation from deck curb and joints.	
		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	1	Deck needs vegetation removal and sweep.	22-Jul-20
		2	Replace rotten guardrail posts, seen Elem 1686 note	
		3	Crack seal transverse cracks at each approach and at midspan - Updated 2020	



BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40045	PIONEER HWY at FISHER SL	2	Seal transverse cracks in deck.	
		3	Fill and compact material around catch basin in northeast corner of bridge.	
		3	Guardrail - Post 1 in SE and SW quads needs replaced.	
		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	Sweep deck	10-Jun-20
		3	Brush and patch rust exposed rebar in girders.	
		3	Upgrade bridge rails	
40047	LK CAVANAUGH at PILCHUCK	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	Remove vegetation to create a path for inspection.	
		2	Clear log jam at downstream end. Debris beginning to build up into culvert.	
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.	
40052	TAYLOR RD at WALKER CK	M	Monitor bridge after high water event.	20-Aug-20
40054	KNAPP RD at NOOKACHAMPS	1	Brush and patch failing patches over pick points	
		2	Repair west approach 2" settlement, and east approach, 1" settlement.	
		M	Erosion in the NW corner under abutment.	
40055	PRAIRIE RD E at SAMISH R	1	Clear debris from intermediate piers	29-Sep-21
		M	Monitor eastern channel migration upstream of bridge during high flows.	
40060	BURMASTER RD at COAL CREEK	2	Sweep deck. Lots of loose gravel and debris.	08-May-20
		3	Repair spalls in concrete railing, approx. 2'.	
		3	Cover exposed rebar of damaged curbing at abutment #1.	
		3	Paint rail posts	
		M	Left bank erosion downstream of bridge.	08-May-20
		M	Void in armoring along Abut #2, 3' deep - MONITOR	
40061	MINKLER RD at WISEMAN CREEK	1	Remove woody debris under the bridge.	
		2	Remove Fence from downstream headwalls	
		2	Clean and patch spall in Girder #5.	
		3	NW End Treatment has minor damage but appears to be still functioning properly	
		3	Patch the damaged areas on the curb.	
		M	2 failed gabion baskets along Abut#2, quarry spalls dumped out.	
40062	UTOPIA RD at BLACK SLOUGH	2	Clear vegetation growing through guardrail out into roadway.	
		2	Patch spalling occurring at the outside girder joints over middle pier	
		3	Remove barb wired fencing from bridge.	
		3	Replace rotten blockout along guardrail in NW quadrant	
40063	LYMAN HAMILTON HWY at CHILDS CREEK	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.	
		M	Scour hole on backside of guardrail at southwest end	08-May-20
		M	Channel migrating west in the NW corner of bridge - MONITOR	
		M	Spacer blocks on bridge rail retrofit are showing signs of rot.	
40066	HAMILTON CEMETERY RD at MUDDY CREEK	1	A/C level west approach - 2" of settlement.	
		3	Vegetation management needed around bridge abutments.	27-May-20
		3	Pressure wash curbs.	
40067	CAPE HORN RD at ALDER CREEK	1	Patch potholes located at bridge joint.	27-May-20
		1	Patch potholes in asphalt deck.	
		2	Repair or replace damaged gabion basket	
		2	Brush and patch exposed rebar in girders (60 linear feet)	
		3	Upgrade guardrail to current standards.	
		3	Pressure wash moss off of bridge	
		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.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40069	CONRAD RD at SWIFT CREEK	1	Replace lost grout in deck at girder pick points.	10-Jun-20
		2	Sweep Deck	
		M	Appears to be bridge movement causing abutments to rotate.	
		M	Monitor the channel protection.	
40070	SKAGIT RIVER MARBLEMOUNT	0	Replace split spacer block at northeast corner.	13-Oct-20
		1	Repair or replace the 20 ft. length of damaged guardrail at the northwest corner.	
		1	Remove debris from upstream face of Pier 4. (This is a recurrent problem, consider the installation of a shark or debris deflector).	
		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	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).	
		1	Remove loose ACP and patch pothole at east abument joint in the eastbound lane.	
		1	Install signage for Load Restrictions	
		2	Remove rust, apply rust inhibitor and touch-up paint the stringers at the following locations: 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). Replace missing nut at Truss span Bearing 2A at the southwest corner for the masonry plate and tighten loose nut at the southeast corner.	
40071	CASCADE RIVER BRIDGE	1	Repair thrie beam transition at nw corner. Damaged from fallen tree.	
		1	Patch spalls in deck (8 SF)	
		2	Clean drains - plugged with debris	
		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 ROAD AT LOOKOUT CREEK	1	Remove unstable boulder at the NW corner before it rolls down the 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.	
		3	Improve drainage at SE corner, routing water away from wingwall.	
40075	CASCADE RIVER RD at SIBLEY CREEK	2	Panel 16 has loose bolt - 1 1/8" socket	
		2	Pressure wash deck and remove material between panels	
40076	CASCADE RIVER RD at HARD CREEK	M	Monitor Southwest retaining wall - slightly out of plum	
		M	Scour hole located under shotcrete Abut#2 side. MONITOR	
40077	CASCADE RIVER RD at MINERAL PARK	1	Fill potholes in bridge approach.	
		2	Sweep deck, lots of gravel tracked onto it.	
		2	Mitigate loss of approach road fill with gabion baskets and back filling.	
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 approach roadways. Last repaired in 2014	17-Jul-20
		3	Wire brush and patch exposed rusty rebar in the girders	
		M	Some debris under span 3 - Monitor	
		M	Monitor for debris and localized scour.	
40082	S SKAGIT HWY at LORETTA CREEK	1	Guardrail - replace 1st transition post in SE Quad	
		2	Wire brush and patch or paint rusty rebar on girders.	
		2	Patch deck areas with exposed rebar, 20' from west end.	
		3	Paint rail posts	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		3	Guardrail - 2nd transition post in NE Quad is beginning to rot.	
40083	S SKAGIT HWY at CUMBERLAND CREEK	2	Level approach with A/C leveling and removal of BST Overspray	17-Jul-20
		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	Replace damaged guardrail - End Treatment, Southeast quadrant	29-Jul-20
		2	Patch exposed rebar in the girders.	
40088	S SKAGIT HWY at PRESSENTIN CREEK	1	Resurface / rehabilitate bridge deck	
		2	Cut back vegetation at abut #1	29-Jul-20
		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	Post bridge for weight restrictions	01-Jul-21
		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	Replace poured joints over floorbeams with a Dow Corning pourable joint or equivalent.	10-Mar-20
		2	Update Load Rating Information based on most recent Load Rating Data.	30-Mar-21
40091	CONCRETE-SAUK VALLEY TEMP BR	M	Monitor North bank and migration towards abutment. Armoring may be necessary. Updated 12/7/21	
40093	UPPER FINNEY CREEK BRIDGE	2	Remove fallen boulders from behind Pier 3	
		3	Clear moss from concrete rails	
		3	Patch spall in North rail.	
		M	Monitor cracking occurring on bottom of Pier 4/Girder joints	25-Jun-20
		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	Pothole on west end of bridge WB lane	10-Jun-20
		3	Replace rubber joints	
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	Post bridge for weight restrictions	30-Jun-21
		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).	
		2	Repair or replace the blocking and support for the north side metal bridge railing, in Span 2 between Panel Points L1 and L2.	
		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	
		1	Sweep shoulders and clear scuppers	
		2	Repair and patch driving surface.	15-Jul-20

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		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	2	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	Brush and patch exposed rebar in girders.	
		2	Repair: Bridge rail posts need painting	
		2	Repair loose Type III sign southwest corner.	
		M	Armoring sloughing along Abut #1 - Monitor	
40110	BURLINGTON NORTHERN OVERPASS	2	Seal cracks on deck over pier caps with epoxy resin	
		3	Clear debris from expansion joints on deck joint.	
		3	Tighten screws on multiple electrical panels located on concrete rails.	
		M	Monitor cracking occurring on bottom flange of girders, marked and dated.	
40113	OLD HWY 99 at THOMAS CREEK	1	Install temporary shoring around red tagged pile.	24-Sep-21
		2	Replace or reinforce rotted timber abutment planks along bottom of both abutments.	
		3	Replace rotten timber girders on each end of span 3	
40114	SAMISH RIVER BRIDGE	1	Remove joints at Pier 3 and Pier 4 and re-engineer and install new joint systems. Clean sand and debris from bottom chord. North half of bridge can probably be reached from below with a ladder.	
		1	2018 - Sand and debris is accumulating in the bottom chord, but did not impact inspection. (SRD/TRM)	
		1	Restore riprap around Pier 3.	
40115	OLD HWY 99 at FRIDAY CREEK	1	Vector out clogged drains (2)	
		1	Replace damaged rail (~40') SE quad - Revised 2021	
		2	Replace Post 1, NW rail - rotten	
		3	Replace multiple rotten spacer blocks (2 east rail, 6 west rail)	
40116	OLD HWY 99 at SILVER CREEK	M	scour under abutment #2, downstream end.	26-May-21
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	2	Wire brush and patch spalls in underside of span 2 & 3 slab.	
		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 unraveleing.	
40130	LYMAN HAMILTON HWY at RED CABIN	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 MANNSEY CR	2	Upgrade Guardrails	
40132	LYMAN HAMILTON HWY at JONES CREEK	3	Pressure wash concrete bridge rails	
		M	Scour along Abutment 2, install new armoring and backfill.	19-May-20
		M	Woody debris hung up on pier 3 causing local scour.	
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.	
		3	Clean out debris along joints.	
40142	CAMPBELL LAKE OUTLET	2	Wire brush and patch spalled out pick points.	
		M	S.S. screen upstream of bridge	22-Sep-21
		M	Watch for insect damage to piles and caps.	
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.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
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.	
		1	Touch-up protective coating on Girder 3A	
		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.	
		1	Patch section loss with exposed rebar in Girder 2A along top flange and underneath steel header located at Pier 3.	
		2	Seal vertical crack located at Pier 2 diaphragm.	
		2	Repair or replace breakwater connection plate at 8th pile	
		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.	
		3	Lift motor gear box leaks oil.	21-Oct-20
		3	Repair leaks.	
		3	Reset dislodged spacer blocks	
40153	GUEMES ISLAND FERRY DOCK	1	Replace the lower clevis bolt attachment to the hoisting block on the right girder. This bolt is yielding.	21-Oct-20
		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.	21-Oct-20
		1	Restore the design edge distance of the gusset hole for the apron lift beam.	21-Oct-20
		1	Clean and spot paint all steel areas which have corrosion. 2020: Safety railing on headframe has been repainted.	
		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.	21-Oct-20
		3	Repair leaks.	
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	1	Settlement at both approaches - A/C level	09-Sep-20
		2	Tighten cleats. Last performed in 2010	
		3	Section loss in deck. Replace 2' of failed board.	
40159	MINKLER RD at COAL CREEK	1	Coal Creek in need of sediment management project and remove debris from underneath bridge. Updated 2020	
		1	Replace all rail posts that are damaged (6 upstream side, 2 downstream side)	
		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	Clear weeds and patch spalls in deck at joint of Abut #2	
40162	BLANCHARD RD at MCELROY SLOUGH	2	Re-weld fence post to base plate located on SE wingwall.	
		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.	
40164	S LAVENTURE RD at MADDOX CREEK	1	Replace damaged guardrail in NW quad (2 sections)	
		M	Maddox Creek migrating towards west abutment wall - Monitor	