



# SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

## 2019 ANNUAL BRIDGE REPORT



*Samish River Bridge: Top - 1934 Deck Construction / Bottom - 2019 Deck Rehabilitation*

**SUBMITTED MARCH, 2020**



# SKAGIT COUNTY DEPARTMENT OF PUBLIC WORKS

## 2019 BRIDGE REPORT

**Submitted: March 2020**

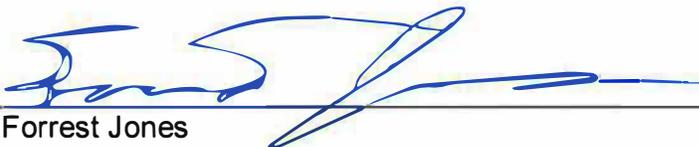
This bridge report is prepared annually by the Transportation Programs Section of Skagit County Public Works' Engineering Division to fulfill requirements of the Washington Administrative Code (WAC) 136-20-060. The WAC requires the County Engineer's report of bridge inspections as follows:

*"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."*

Prepared By:

  
Torey Nelson  
Bridge Co-Inspector

Reviewed by:

  
Forrest Jones  
Lead Bridge Inspector  
WSDOT Certification No. G1202

Approved by:

  
Paul A. Randall-Grutter, P.E.  
County Engineer  
WSDOT Certification No. G1708





## TABLE OF CONTENTS

ACRONYMS.....	4
EXECUTIVE SUMMARY.....	5
BRIDGE INVENTORY SUMMARY.....	7
TABLE 1: STRUCTURALLY DEFICIENT BRIDGES.....	7
TABLE 2: LOAD RESTRICTED BRIDGES.....	9
TABLE 3: VERTICAL CLEARANCE LIMITED BRIDGES.....	9
BRIDGE INSPECTION PROGRAM, FINDINGS AND RECOMMENDATIONS.....	11
REPLACEMENT & REHABILITATION.....	12
MAINTENANCE & REPAIR.....	13
BRIDGE TERMINOLOGY.....	14
ELEMENTS OF A BRIDGE.....	16
SKAGIT COUNTY BRIDGE LOCATION MAP.....	17
APPENDIX A – BRIDGE INVENTORY.....	18
APPENDIX B – ROUTINE & SPECIAL INSPECTION SCHEDULE.....	21
APPENDIX C – BRIDGE MAINTENANCE LIST.....	24

## 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 the town of Conway (Best Road)*

## EXECUTIVE SUMMARY

The 2019 Annual Bridge Report complies with WAC 136-20-060, which requires that each County Road 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.



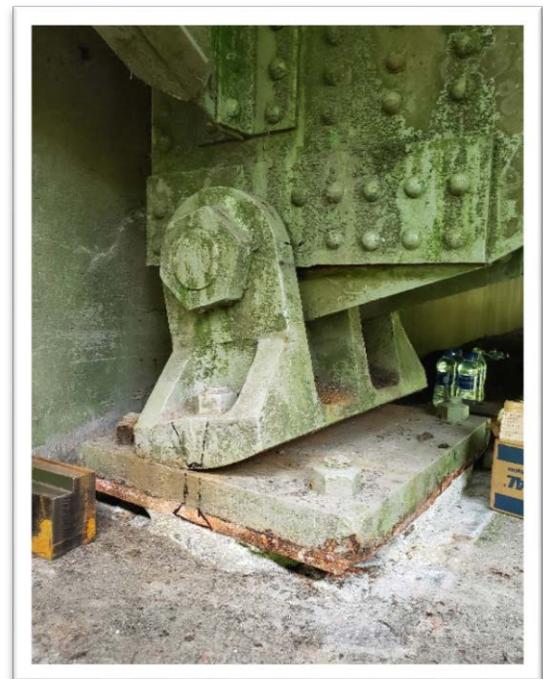
***Dalles Bridge near Concrete (Concrete-Sauk Valley Road)***

**HIGHLIGHTS** from this bridge inspection season include:

- 61 bridge inspections were performed in Skagit County.
  - 48 routine inspections performed on Skagit County bridges
  - 13 routine inspections performed for local agencies
  - 1 interim inspection performed on Anacortes Ferry Dock
- The Federal Highway Administration performed an audit of Skagit County's bridge files and bridge inspection accuracy. FHWA cited a few findings which have since been resolved. Additionally, measures have been put in place to assure these findings get corrected on the rest of the inventory.
- Skagit County has been awarded \$3,000,000 in Federal Local Bridge Program funds for the Upper Finney Creek Bridge. The proposed work includes a seismic retrofit, making the bridge more resistant to earthquake damage, while also increasing its overall strength and load capacity.
- Two bridges received deck rehabilitations, as well as other repairs, and were removed from the Structurally Deficient list. These projects were funded by Federal Local Bridge program.
  - **Samish River Bridge:** deck rehabilitated, rocker bearings reset, fatigue cracks repaired, and concrete railings patched.



***Friday Creek Bridge Deck Rehabilitation***



***Samish R. Bridge frozen rocker bearing***

- **Friday Creek Bridge:** deck rehabilitated, approach slabs rebuilt, and voided slab superstructure was drained of seepage in the voids.

# BRIDGE INVENTORY

## Skagit County Road Bridges:

As of December 31, 2019, Skagit County has 110 bridges in the National Bridge Inventory System (NBIS). The current inventory includes:

- 5 culverts (2 corrugated metal, 3 concrete)
- 2 predominately made of timber
- 11 predominately made of steel
- 92 predominately made of concrete
- 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 5 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 2020
40153	GUEMES FERRY DOCK	Apron/Gusset Plate	Fully funded, local funds Construction in 2020
40113	OLD HWY 99 at THOMAS CK	Deck/Substructure	Eligible for Replacement, application in 2021.
40070	SKAGIT RIVER MARBLEMOUNT	Superstructure	Eligible for Replacement, application in 2021.
40029	BAY VIEW-EDISON at JOE LEARY	Deck	Not eligible for grant funding

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 to perform these types of inspections. None were performed this year but there are 10 bridges scheduled for high cost inspections in 2020. See “Appendix B – Routine & Special Inspection Schedule” for details on inspection frequencies and schedules for all of our UBIT and special bridge inspections).

### Load Restricted Bridges:

The North Fork Bridge is a viable route for legal limit loads.

However, due to fracture critical status and deficiencies of the bridge, 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 superload that requires bridge loading analysis.*

In 2019, we approved 50 Oversized/Overweight Permit applications; 5 of which required review of the load weight over our bridges. New software was acquired in 2016 to help evaluate overweight loads 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.



*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 rerating, 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. These will be prioritized by the load rating factor from lowest to highest and spread out over the next 3 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	Type 3 25T	SU4 27T	SU5 31T	SU6 34.7T	SU7 38.7T	EV2 28.7T	EV3 43T	Post?
40001	Lake View Blvd at Nookachamps							36.55	N
40008	South Fork Bridge						27.27	36.98	Y
40047	Lake Cavanaugh at Pilchuck				32.27	33.28	22.10	31.82	Y
40063	Lyman Hwy at Childs Ck				32.97	34.83		30.53	Y
40114	Samish River Bridge			29	32	34	26	27	Y
40115	Friday Ck Bridge				31.3	32.2	25	31	Y
40130	Lyman Hwy at Red Cabin Ck							32.68	N
40131	Lyman Hwy at Mannser Ck		25.11	26.97	27.41	28.25	27.55	27.09	Y
40132	Lyman Hwy at Jones Ck	24.50	22.14	23.87	24.29	25.54	24.11	24.08	Y
40152	Anacortes Ferry Dock							37.41	N
40153	Guemes Island Ferry Dock							37.41	N

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:

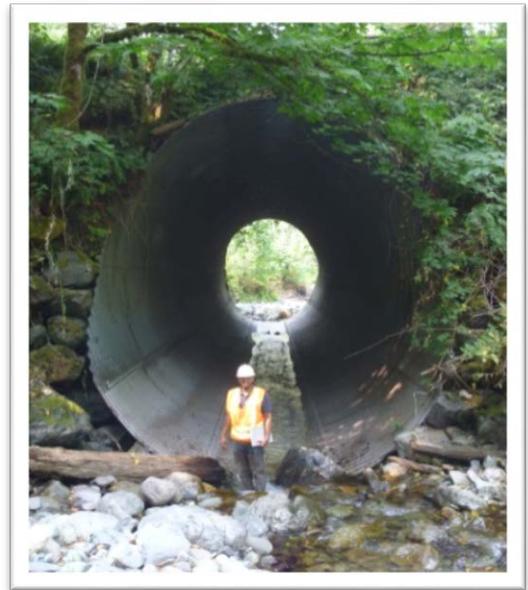
Skagit County Public Works provides inspection services to cities and towns on a reimbursable basis. The County works with the local agencies under agreement conditions set forth in RCW Chapter 39.34, the Interlocal Cooperation Act. The County's services are provided primarily to cities that lack resources and expertise to inspect and maintain their bridge inventory. Currently, the County provides routine inspection services on 15 local municipality bridges and will be adding 2 bridges in the City of Sedro Woolley in 2020.

#### 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](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, 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 or Functionally Obsolete per NBIS. We have received or are currently seeking funding for a number of bridges that are in need of replacement, rehabilitation and/or resurfacing, including, but not limited to:

### Replacement

- Old Hwy 99 at Thomas Creek Bridge #40113
  - Following this past season's routine inspection, the sufficiency rating dropped to 37.16, making it eligible for replacement funding.
  - The inspection frequency has been increased to ensure the bridges' capacity remains high along this heavily traveled corridor.
  - We will begin applying for replacement funds. The next call for Highway Bridge Replacement/Rehabilitation Program (HBRRP) funds is 2021.
  
- Skagit River Marblemount Bridge #40070
  - The sufficiency rating dropped to 39.93 after close review of the bridge files and revisions to coding being reported accurately.
  - The bridge is still in fair shape with fair to good ratings of the deck, superstructure, and substructure, so replacement funds are less than likely. However, the bridge is on our radar and we'll continue to monitor it closely for further deterioration.

### 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.
  - Project cost is estimated at \$3.5 Million. We will continue to look for additional grant funding opportunities, such as the Federal Lands Access Program (FLAP) to help cover the remaining costs.
  
- 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 County Road funds and will occur this summer, 2020.
  
- Guemes Island Ferry Dock #40153
  - Currently with a sufficiency rating of 24.1.
  - The Guemes dock has multiple items related to the transfer span, which raises and lowers onto the deck of the ferry, in need of replacing due to continued deterioration.
  - This work will be accomplished this summer, 2020.

## 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 headache, 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 is working on a plan to remove a large amount of the material and get Mill Creek back in its main channel.



#### **Debris**

Debris is an ongoing battle. Currently there are large rafts on the North Fork Bridge #40037, South Skagit Hwy at Day Creek #40081 (*left*), and a small collection is beginning on the South Fork Bridge #40008. We have already secured programmatic HPA's a couple years ago for clearing debris off certain bridges. County crews will begin clearing Day Creek as soon as possible, and we're working with the WSDOT maintenance crew to assist on the other two Skagit River bridges.

### 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 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.

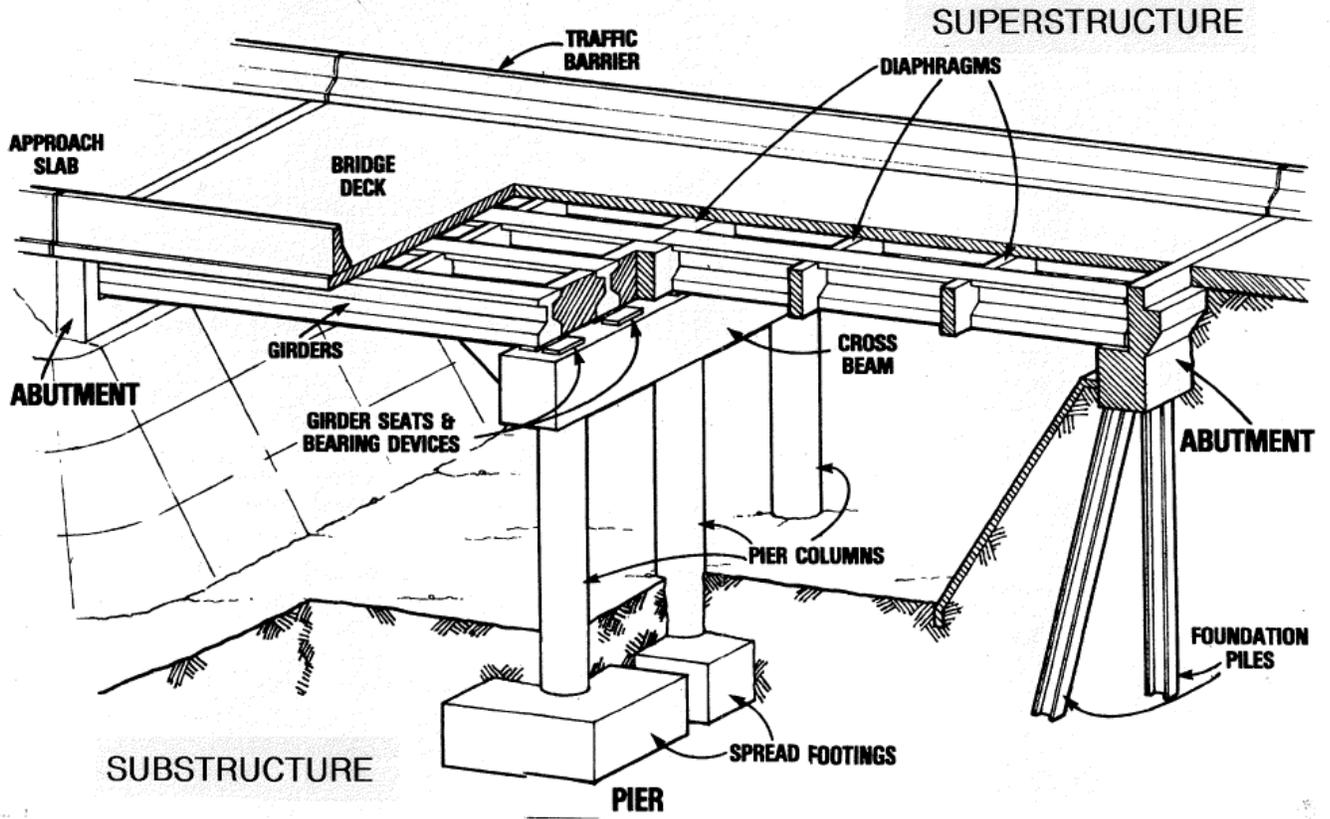
**Trestle**—a bridge structure consisting of beam spans supported upon bents. Trestles are usually made of timber and have numerous diagonal braces, both within each bent and from bent to bent.

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

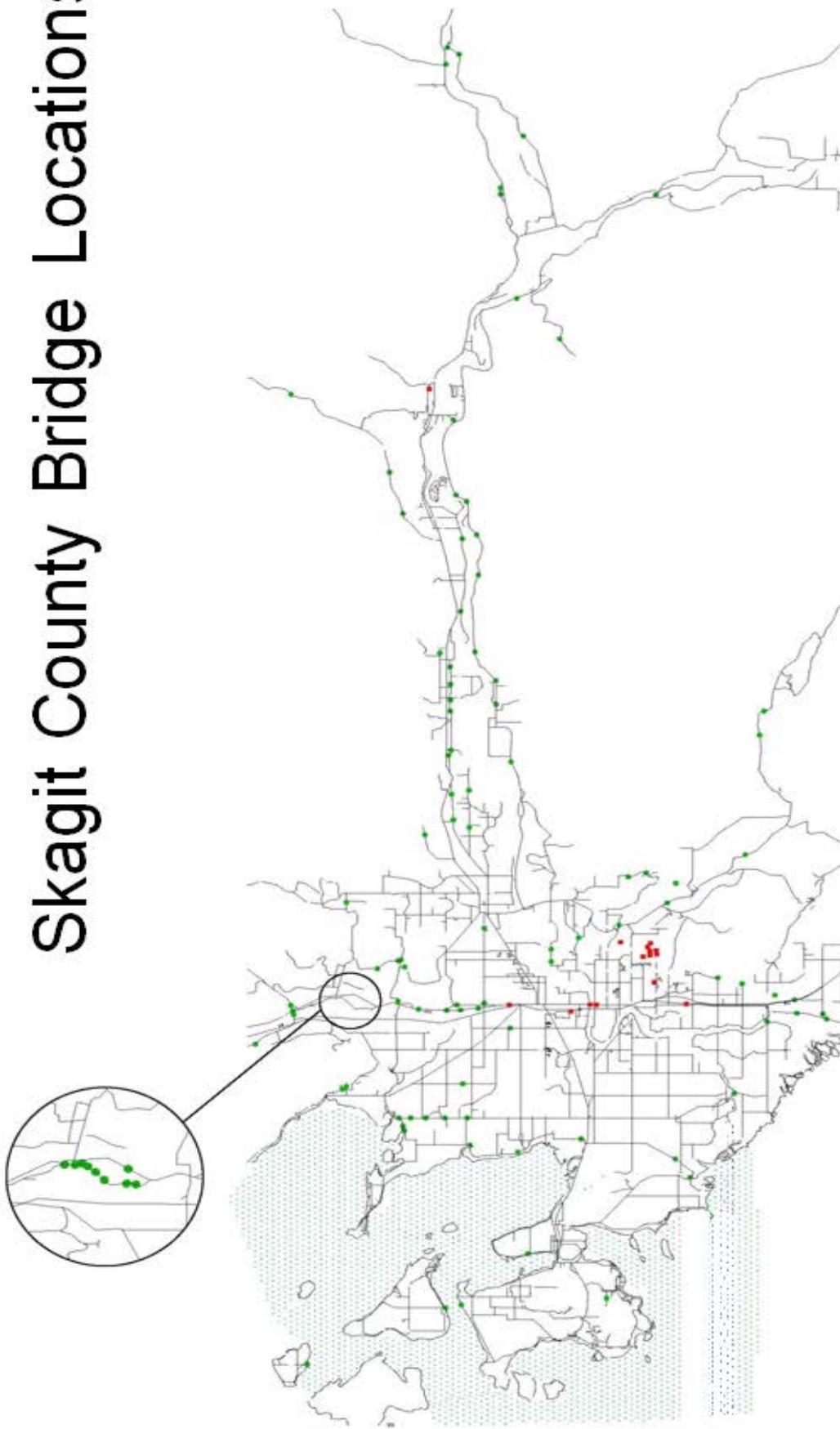
**Wingwall**—walls that slant outward from the corners of the overall bridge that support roadway fill of the approach.

# ELEMENTS OF A BRIDGE

## BASIC BRIDGE PARTS



# Skagit County Bridge Locations



# APPENDIX A - BRIDGE INVENTORY

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 (SD)
40153	GUEMES ISLAND FERRY DOCK	165	15.0	502	10	Steel	1981	24.1 (SD)
40113	OLD HWY 99 at THOMAS CK	52	30.0	4,372	10	Timber	1934	37.16 (SD)
40070	SKAGIT RIVER MARBLEMOUNT	662	20.0	556	6	Steel	1930	39.93 (SD)
40037	NORTH FORK BRIDGE	726	24.0	4,276	7	Steel	1959	42.89 (FO)
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	42.93
40114	SAMISH RIVER BRIDGE	385	24.0	3,700	13	Steel	1934	45.52 (FO)
40093	UPPER FINNEY CK BRIDGE	217	14.9	38	10	Concrete	1952	49.49 (FO)
40075	CASCADE RIVER RD at SIBLEY CK	23	24.0	280	11	Concrete	1997	52.33
40008	SOUTH FORK BRIDGE	908	28.0	5,294	8	Steel	1972	53.78
40039	RAINBOW BRIDGE	797	24.0	4,967	3	Steel	1957	56.76 (FO)
40001	LAKE VIEW BLVD/NOOKACHAMPS	77	25.5	821	8	Concrete	1954	57.67
40156	CEDARDALE RD at CARPENTER CK	83	36.0	584	13	Timber	1934	60.81
40072	CASCADE RIVER RD at MONOGRAM	22	26.0	280	11	Concrete	1979	63.78
40115	OLD HWY 99 at FRIDAY CK	122	26.0	1,974	9	Concrete	1956	63.82
40063	LYMAN HWY at CHILDS CK	32	24.0	726	7	Concrete	1948	64.69
40090	DALLES BRIDGE	506	26.0	2,633	6	Steel	1952	64.69 (FO)
40131	LYMAN HWY at MANNSEY CK	52	26.0	254	5	Concrete	1954	68.21
40004	FRANCIS RD at SLOUGH	50	24.0	4,395	5	Concrete	1958	68.38 (FO)
40099	GOVERNMENT BRIDGE	304	14.0	140	5	Steel	1930	69.35 (FO)
40077	CASCADE RIVER RD at MINERAL CK	71	18.0	280	11	Concrete	1986	71.35 (FO)
40132	LYMAN HWY at JONES CK	52	26.0	250	9	Concrete	1955	72.32
40076	CASCADE RIVER RD at HARD CK	46	17.7	280	11	Concrete	2016	72.64 (FO)
40101	BAKER LAKE RD at BEAR CK	85	26.0	430	13	Concrete	1966	73.5
40082	S SKAGIT HWY at LORETTA CK	85	24.0	631	5	Concrete	1961	74.46
40109	LAKE SAMISH RD at FRIDAY CK	53	26.0	5,132	7	Concrete	1965	74.5 (FO)
40116	OLD HWY 99 at SILVER CK	38	25.0	1,974	9	Concrete	1934	75.71
40043	CONWAY HILL at CARPENTER	58	14.0	77	9	Concrete	1980	75.97
40003	FRANCIS at NOOKACHAMPS	130	28.0	4,395	5	Concrete	1979	76.75
40038	LACONNER WHITNEY at SL	68	26.0	4,982	6	Concrete	1962	77.09 (FO)
40089	S SKAGIT HWY at FINNEY CK	120	26.0	631	5	Steel	1954	78.09
40036	FARM-TO-MARKET JOE LEARY	72	26.0	1,905	7	Concrete	1950	79.29
40028	BAY VIEW-EDISON at SAMISH R	223	26.0	784	6	Concrete	1965	79.6
40020	FRIDAY CREEK 3RD BRIDGE	61	20.0	165	8	Concrete	1961	79.94
40021	FRIDAY CREEK 4TH BRIDGE	61	20.0	144	9	Concrete	1961	79.95
40018	FRIDAY CREEK 1ST BRIDGE	61	20.0	165	8	Concrete	1962	80.44
40088	S SKAGIT HWY at PRESENTIN CK	85	27.0	631	5	Concrete	1966	80.74
40055	PRAIRIE RD E at SAMISH R	75	24.4	823	8	Concrete	2012	80.75
40081	S SKAGIT HWY at DAY CK	160	24.0	631	5	Concrete	1961	80.76
40083	S SKAGIT HWY at CUMBERLAND CK	50	24.0	631	5	Concrete	1961	80.76
40026	FARM-TO-MARKET N DITCH	32	26.0	1,554	8	Concrete	1951	80.96
40141	BAY VIEW STATE PARK	62	26.0	686	7	Concrete	1969	81.61 (FO)
40052	TAYLOR RD at WALKER CK	42	16.0	52	13	Concrete	1985	81.94 (FO)
40140	BAKER LAKE RD at E GRANDY CK	41	28.0	694	12	Concrete	1968	82.02
40130	LYMAN HWY at RED CABIN CK	22	26.0	250	9	Concrete	1954	82.09
40034	FARM-TO-MARKET SAMISH R	158	26.0	1,187	8	Concrete	1963	82.16

BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT/ REBUILT	SUFFICIENCY RATING
40106	LAKE SAMISH RD at BEAR CK	50	24.0	306	6	Concrete	1959	82.49
40151	NICHOLSON at CHILDS CK	29	15.0	40	5	Concrete	1979	82.99
40066	HAMILTON CEMETERY RD at MUDDY CK	50	26.0	258	9	Concrete	1965	84.25
40002	SWAN ROAD BRIDGE	126	28.0	1,011	9	Concrete	1976	84.32
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	84.78
40029	BAY VIEW-EDISON JOE LEARY	101	30.0	496	8	Concrete	1955	84.9
40084	S SKAGIT HWY at O'TOOLE CK	66	24.0	631	9	Concrete	1959	84.92
40071	CASCADE RIVER BRIDGE	180	26.0	336	7	Concrete	1967	85.2
40142	CAMPBELL LAKE OUTLET	19	20.0	78	4	Concrete	1962	85.22
40015	PRAIRIE RD S at SAMISH R	83	28.0	1,559	9	Concrete	1974	85.42
40017	PRAIRIE RD FRIDAY CK	78	28.0	2,406	9	Concrete	1975	85.65
40032	FARM-TO-MARKET S DITCH	21	26.0	1,331	6	Concrete	1950	86.16
40033	FARM-TO-MARKET at NEUMAN	60	26.0	1,187	8	Concrete	1950	86.22
40065	CONRAD RD at SUTTER CK	73	15.7	91	3	Concrete	2011	86.23
40157	BENSON RIDGE LN at CARPENTER CK	52	30.0	46	4	Timber	1983	86.3
40027	BAY VIEW-EDISON at SAMISH SL	38	26.8	784	6	Concrete	1965	86.47
40074	CASCADE RIVER RD at MARBLE CK	120	26.0	280	11	Concrete	1982	86.71
40086	S SKAGIT HWY at MILL CK	41	28.0	631	9	Concrete	1969	86.99 (FO)
40061	MINKLER RD at WISEMAN CK	40	28.0	891	7	Concrete	1967	87.35 (FO)
40126	MARCHS POINT PIPELINE	44	28.0	1,134	15	Concrete	1960	87.49
40161	FLINN ROAD at MCELROY SLOUGH	48	19.5	20	0	Concrete	2006	87.8
40073	LOOKOUT CRK BRIDGE	191	28.0	125	5	Steel	1981	87.9
40016	PRAIRIE RD W at SAMISH R	104	28.0	1,559	9	Concrete	1975	89.04
40062	UTOPIA RD at BLACK SLOUGH	141	28.0	110	7	Concrete	1984	89.92 (FO)
40120	BAKER LAKE RD at W FORK GRANDY CK	61	28.0	694	12	Concrete	1968	90.23
40067	CAPE HORN RD at ALDER CK	41	28.0	187	5	Concrete	1972	90.26
40011	GREEN RD at THOMAS CK	51	24.0	124	4	Concrete	1958	90.48
40060	BURMASTER RD at COAL CK	26	24.0	229	5	Concrete	1958	91.43
40094A	ROCKPORT CASCADE at ILLABOT CK	93	28.0	197	7	Concrete	1970	91.44
40023	FRIDAY CREEK 6TH BRIDGE	61	24.0	144	9	Concrete	1963	91.46
40024	FRIDAY CREEK 7TH BRIDGE	61	24.0	144	9	Concrete	1964	91.46
40041	E PETER JOHNSON RD	54	24.0	63	14	Concrete	1981	92.41
40005	NOOKACHAMP HILLS CULVERT	30	33.0	250	4	Steel	2008	92.67
40012	COOK RD at BRICKYARD CK	54	44.0	14,215	10	Concrete	2000	92.67
40009	COOK RD at DD14 DITCH	38	40.0	13,903	9	Concrete	2000	93.72
40080	S SKAGIT HWY at PARKER CK	26	0.0	1,584	11	Concrete	1996	93.74
40044	PIONEER HWY at BIG DITCH	81	37.0	8,445	8	Concrete	1987	93.76
40045	PIONEER HWY at FISHER SL	114	37.2	8,445	8	Concrete	1987	93.95
40112	NEFFS CROSSING	108	41.0	4,384	11	Concrete	2006	94.34
40163	HELMICK RD at RED CK	150	36.0	759	7	Concrete	2007	94.77
40068	CAPE HORN RD at GRANDY CK	51	28.0	342	7	Concrete	1967	95.22
40014	GRIPP RD at SAMISH R	84	28.0	664	6	Concrete	1976	95.52
40117	ALGER CAIN LAKE RD at SILVER CK	102	34.2	5,113	6	Concrete	1992	95.55
40159	MINKLER RD at COAL CK	29	36.0	933	11	Concrete	1984	95.78
40030	THOMAS RD at SAMISH R	91	28.0	221	15	Concrete	1973	96.29
40013	F&S GRADE SAMISH RIVER	102	28.0	500	9	Concrete	1974	96.31

BRIDGE NUMBER	BRIDGE NAME	LENGTH (Feet)	WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT/ REBUILT	SUFFICIENCY RATING
40092	CONCRETE-SAUK VALLEY at MILLER CK	25	0.0	1,036	13	Concrete	1999	96.98
40085	S SKAGIT HWY at DAVIS SLOUGH	63	34.9	594	9	Concrete	2014	97.45
40019	FRIDAY CREEK 2ND BRIDGE	74	28.0	165	8	Concrete	1979	97.61
40054	KNAPP RD at NOOKACHAMPS	73	28.0	382	10	Concrete	1977	97.72
40051	BEAVER LAKE RD at NOOKACHAMPS	73	28.6	144	9	Concrete	1977	97.73
40129	LYMAN HWY at MUDDY CK	65	30.0	194	9	Concrete	1997	97.97
40095	ROCKPORT CASCADE RD at JORDAN CK	56	28.0	297	10	Concrete	1969	98.21
40022	FRIDAY CREEK 5TH BRIDGE	69	28.0	144	9	Concrete	1977	98.27
40110	BURLINGTON NORTHERN OVERPASS	395	38.0	4,674	12	Concrete	2018	98.56
40025	FRIDAY CREEK 8TH BRIDGE	59	28.0	144	9	Concrete	1977	98.62
40048	LK CAVANAUGH RD CULVERT	21	30.0	609	15	Steel	1998	98.84
40069	CONRAD RD at SWIFT CK	38	24.0	91	2	Concrete	1981	98.96
40164	S LAVENTURE RD at MADDOX CK	80	50.0	6,973	12	Concrete	2013	99.02
40035	BAY VIEW-EDISON at BIG INDIAN	71	34.1	1,155	8	Concrete	1992	99.57
40094B	RYAN CROSSING at ILLABOT CK	106	28.0	197	7	Concrete	2018	99.68
40094C	HOLLOW CEDAR at ILLABOT CK	106	28.0	197	7	Concrete	2018	99.68
40162	BLANCHARD RD at MCELROY SLOUGH	28	26.0	40	1	Concrete	2007	99.99
LOCAL AGENCY BRIDGES								
BRIDGE NUMBER	BRIDGE NAME	BRIDGE LENGTH (Feet)	BRIDGE WIDTH (Feet)	AVG DAILY TRAFFIC	TRUCK %	MAIN MATERIAL	YEAR BUILT/ REBUILT	SUFFICIENCY RATING
CITY OF BURLINGTON								
BURLINN-2	NORTH BURLINGTON BLVD	26	34.0	5,147	10	Concrete	1997	94.76
BURLINN-3	GOLDENROD BRIDGE	116	40.0	2,346	10	Concrete	2005	99.34
TOWN OF CONCRETE								
CONCRETE1	BAKER RIVER	269	18.0	137	11	Concrete	1916	21.91 (FO)
CITY OF MOUNT VERNON								
MV-1	RIVERSIDE BRIDGE	850	60.0	21,640	10	Concrete	2004	90.74
MV-2	HOAG STEWARD OVERPASS	60	65.0	24,455	8	Concrete	2003	88.91 (FO)
MV-3	ELEANOR LANE A	32	30.0	440	7	Concrete	2006	84.15
MV-4	SKAGIT HIGHLANDS PARKWAY	37	0.0	800	5	Concrete	2003	99.89
MV-5	LANDMARK DRIVE	51	28.0	500	5	Concrete	1994	98.95
MV-6	EAGLEMONT DRIVE	20	0.0	800	5	Steel	1995	99.93
MV-7	J OFF BEAVER POND DR S	32	24.0	50	1	Aluminum	2006	94.53
MV-8	BEAVER POND DR SOUTH	29	28.0	200	5	Concrete	2004	99.98
MV-9	BEAVER POND DR NORTH B	54	28.0	300	5	Concrete	2002	99.97
MV-10	OLYMPIC LANE	67	22.0	50	5	Concrete	2004	99
MV-11	BEAVER POND DR NORTH A	42	30.0	400	5	Concrete	2001	99.96
MV-12	LAVENTURE RD CULVERT	30	44.0	7,327	5	Concrete	2010	99.31

# APPENDIX B - ROUTINE & SPECIAL INSPECTION SCHEDULE

BRIDGE NAME	BRIDGE No.	LOCATION	LAST INSP	INSP FREQ (months)	NEXT INSP	INSP TYPE
SOUTH FORK BRIDGE	40008	1.0 W JCT INTERSTATE 5	3/19/18	24	Mar-20	Routine - UBIT
			3/19/18	24	Mar-20	Fracture Critical
NORTH FORK BRIDGE	40037	5.5 W JCT INTERSTATE 5	3/19/18	24	Mar-20	Routine - UBIT
			3/19/18	24	Mar-20	Fracture Critical
SKAGIT RIVER MARBLEMOUNT	40070	0.03 E JCT SR 20	3/26/18	24	Mar-20	Routine - UBIT
			3/26/18	24	Mar-20	Fracture Critical
LOOKOUT CRK BRIDGE	40073	7.04 E JCT SR 20	3/26/18	24	Mar-20	Routine - UBIT
DALLES BRIDGE	40090	1.5 S JCT SR 20	3/28/18	24	Mar-20	Routine - UBIT
			3/28/18	24	Mar-20	Fracture Critical
GOVERNMENT BRIDGE	40099	0.14 NW JCT SR 530	3/21/18	24	Mar-20	Routine - UBIT
			3/21/18	24	Mar-20	Fracture Critical
SAMISH RIVER BRIDGE	40114	2.6 N JCT COOK RD.	3/20/18	24	Mar-20	Routine - UBIT
			3/20/18	24	Mar-20	Fracture Critical
RAINBOW BRIDGE	40039	0.95 JCT MORRIS ON MAPLE	4/4/18	24	Apr-20	Routine - UBIT
			4/4/18	24	Apr-20	Fracture Critical
UPPER FINNEY CK BRIDGE	40093	4.6 W CONC SAUK VALLEY RD	4/2/18	24	4/15/20	Routine
BURMASTER RD at COAL CK	40060	1.2 E JCT MINKLER	5/2/18	24	5/6/20	Routine
MINKLER RD at WISEMAN CK	40061	0.5 W JCT SR 20	5/2/18	24	5/6/20	Routine
MINKLER RD at COAL CK	40159	0.1 E JCT SIMS ROAD	5/2/18	24	5/6/20	Routine
LYMAN HWY at CHILDS CK	40063	0.8 E JCT SR 20	5/16/18	24	5/6/20	Routine
LYMAN HWY at RED CABIN CK	40130	0.18 E JCT HEALY RD	5/16/18	24	5/13/20	Routine
LYMAN HWY at MANNSEY CK	40131	0.17 W JCT HAMIL CEM RD	5/16/18	24	5/13/20	Routine
LYMAN HWY at JONES CK	40132	0.28 E JCT PIPELINE ROAD	5/16/18	24	5/13/20	Routine
NICHOLSON at CHILDS CK	40151	0.1 S JCT SR 20	5/16/18	24	5/13/20	Routine
HAMILTON CEMEMTERY RD at MUDDY	40066	0.5 W JCT SR 20	5/23/18	24	5/20/20	Routine
CAPE HORN RD at ALDER CK	40067	0.75 E JCT SR 20	5/23/18	24	5/20/20	Routine
CAPE HORN RD at GRANDY CK	40068	2.25 W JCT SR 20	5/23/18	24	5/20/20	Routine
LYMAN HWY at MUDDY CK	40129	0.3 M W HAMILTON	5/23/18	24	5/20/20	Routine
BAY VIEW-EDISON at SAMISH SL	40027	0.4 W JCT SR 537	6/13/18	24	6/10/20	Routine
BAY VIEW-EDISON at SAMISH R	40028	0.5 W JCT SR 537	6/13/18	24	6/10/20	Routine
CONCRETE-SAUK VALLEY at MILLER CK	40092	CSV ROAD	6/14/18	24	6/17/20	Routine
ROCKPORT CASCADE at ILLABOT CK	40094A	4.2 E JCT SR 530	6/14/18	24	6/17/20	Routine
ROCKPORT CASCADE RD at JORDAN CK	40095	0.71 SW JCT N CASCADE HW	6/14/18	24	6/17/20	Routine
CONRAD RD at SWIFT CK	40069	0.2 E JCT SR 20	6/20/18	24	6/17/20	Routine
CASCADE RIVER RD at MONOGRAM	40072	7.37 E JCT SR 20	6/20/18	24	6/24/20	Routine
CASCADE RIVER RD at MARBLE CK	40074	8.3 E JCT SR 20	6/20/18	24	6/24/20	Routine
CASCADE RIVER RD at SIBLEY CK	40075	10 E JCT SR 20	6/20/18	24	6/24/20	Routine
CASCADE RIVER RD at HARD CK	40076	12.7 E JCT SR 20	6/20/18	24	6/24/20	Routine
CASCADE RIVER RD at MINERAL CK	40077	16.02 E JCT SR 20	6/20/18	24	6/24/20	Routine
S SKAGIT HWY at PARKER CK	40080	7.25 E JCT SR-9	7/13/18	24	7/1/20	Routine
S SKAGIT HWY at DAY CK	40081	9.0 E JCT SR 9	7/13/18	24	7/1/20	Routine
S SKAGIT HWY at LORETTA CK	40082	10.0 E JCT SR 9	7/13/18	24	7/1/20	Routine
S SKAGIT HWY at CUMBERLAND CK	40083	11.5 E JCT SR 9	7/13/18	24	7/1/20	Routine
S SKAGIT HWY at O'TOOLE CK	40084	15.0 E JCT SR 9	7/13/18	24	7/8/20	Routine
S SKAGIT HWY at MILL CK	40086	17.0 E JCT SR9	7/13/18	24	7/8/20	Routine
S SKAGIT HWY at PRESSENTIN CK	40088	18.5 E JCT SR9	7/13/18	24	7/8/20	Routine
S SKAGIT HWY at FINNEY CK	40089	19.0 E JCT SR 9	7/13/18	24	7/8/20	Routine
BAKER LAKE RD at BEAR CK	40101	9.5 NE JCT SR 20	7/24/18	24	7/15/20	Routine
BAKER LAKE RD at W FORK GRANDY CK	40120	2. NE JCT SR 20	7/24/18	24	7/15/20	Routine
BAKER LAKE RD at E GRANDY CK	40140	4.0 NE JCT SR 20	7/24/18	24	7/15/20	Routine
LK CAVANAUGH RD at BEAR	40046	8.0 E JCT SR 9	7/26/18	24	7/22/20	Routine
LK CAVANAUGH at PILCHUCK	40047	8.7 E JCT SR 9	7/26/18	24	7/22/20	Routine
LK CAVANAUGH RD CULVERT	40048	1.1 SE JCT SR 9	7/26/18	24	7/22/20	Routine
MILLTOWN at BIG DITCH	40042	0.02 E JCT SR 530	7/30/18	24	7/29/20	Routine
CONWAY HILL @ CARPENTER	40043	0.5 E JCT INTERSTATE 5	7/30/18	24	7/29/20	Routine
PIONEER HWY at BIG DITCH	40044	0.23 E JCT MILLTOWN ROAD	7/30/18	24	7/29/20	Routine
PIONEER HWY at FISHER SL	40045	1.5 SW JCT INTERSTATE 5	7/30/18	24	7/29/20	Routine
FRANCIS at NOOKACHAMPS	40003	2.8 W JCT SR9	8/8/18	24	8/5/20	Routine
SWAN ROAD BRIDGE	40002	0.37W JCT BABCOCK/MUDLAKE	8/29/18	24	8/5/20	Routine
FRANCIS RD at SLOUGH	40004	2.0 W JCT SR9	8/29/18	24	8/5/20	Routine
BEAVER LAKE RD at NOOKACHAMPS	40051	3.0 SE JCT SR 9	8/15/18	24	8/12/20	Routine

BRIDGE NAME	BRIDGE No.	LOCATION	LAST INSP	INSP FREQ (months)	NEXT INSP	INSP TYPE
TAYLOR RD at WALKER CK	40052	4.3 E JCT SR 9	8/15/18	24	8/12/20	Routine
CEDARDALE RD at CARPENTER CK	40156	0.75 S JCT SR 534	8/15/18	24	8/12/20	Routine
GREEN RD at THOMAS CK	40011	0.01 S KELLEHER RD	9/19/18	24	9/2/20	Routine
BENSON RIDGE LN at CARPENTER CK	40157	1.2 E I-5 JCT STACKPOLE	9/19/18	24	9/2/20	Routine
LAVENTURE RD CULVERT	MV-12	NORTH OF BLACKBURN	9/26/18	24	9/2/20	Routine
RYAN CROSSING at ILLABOT CK	40094B	4.2 E JCT SR 530	9/27/18	24	9/9/20	Routine
HOLLOW CEDAR at ILLABOT CK	40094C	4.2 E JCT SR 530	9/27/18	24	9/9/20	Routine
ANACORTES FERRY DOCK	40152	0.41 N JCT SR 20	10/9/18	24	10/5/20	Routine
			10/9/18	24	10/5/20	Fracture Critical
GUEMES ISLAND FERRY DOCK	40153	GUEMES ISLAND	10/9/18	24	10/5/20	Routine
			10/9/18	24	10/5/20	Fracture Critical
FRIDAY CREEK 1ST BRIDGE	40018	0.45 N JCT OLD HWY 99 N	5/8/19	24	May-21	Routine
FRIDAY CREEK 2ND BRIDGE	40019	0.59 N JCT OLD 99	5/8/19	24	May-21	Routine
FRIDAY CREEK 3RD BRIDGE	40020	0.3 N. of JCT w/ Old 99	5/15/19	24	May-21	Routine
FRIDAY CREEK 4TH BRIDGE	40021	0.4 N JCT OLD 99	5/15/19	24	May-21	Routine
FRIDAY CREEK 5TH BRIDGE	40022	1.55 N JCT Old 99	5/15/19	24	May-21	Routine
FRIDAY CREEK 6TH BRIDGE	40023	0.6 N JCT OLD 99 N	5/15/19	24	May-21	Routine
FRIDAY CREEK 7TH BRIDGE	40024	2.16 N JCT OLD 99 N	5/22/19	24	May-21	Routine
FRIDAY CREEK 8TH BRIDGE	40025	2.24 N JCT OLD 99 N	5/22/19	24	May-21	Routine
LAKE SAMISH RD at BEAR CK	40106	2.0 NW JCT I-5	5/22/19	24	May-21	Routine
LAKE SAMISH RD at FRIDAY CK	40109	0.25 E JCT INTERSTATE 5	5/22/19	24	May-21	Routine
OLD HWY 99 at FRIDAY CK	40115	4.3 N JCT COOK RD.	5/29/19	24	May-21	Routine
OLD HWY 99 at SILVER CK	40116	0.4 SE JCT LAKE SAMISH RD	5/29/19	24	May-21	Routine
ALGER CAIN LAKE RD at SILVER CK	40117	0.34 E JCT OLD HWY 99	5/29/19	24	May-21	Routine
CONRAD RD at SUTTER CK	40065	0.59 E JCT SR20	6/12/19	24	Jun-21	Routine
CASCADE RIVER BRIDGE	40071	0.04 S JCT CASCADE RD	6/12/19	24	Jun-21	Routine
S SKAGIT HWY at DAVIS SLOUGH	40085	13.9 E JCT SR-9	6/12/19	24	Jun-21	Routine
FARM-TO-MARKET N DITCH	40026	7.7 N JCT SR 20	6/25/19	24	Jun-21	Routine
THOMAS RD at SAMISH R	40030	0.3 N JCT ALLEN WEST RD	6/25/19	24	Jun-21	Routine
FARM-TO-MARKET at NEUMAN	40033	6.1 N JCT SR20	6/25/19	24	Jun-21	Routine
FARM-TO-MARKET SAMISH R	40034	5.9 N JCT SR 20	6/25/19	24	Jun-21	Routine
FARM-TO-MARKET JOE LEARY	40036	5.0 N JCT SR 20	6/25/19	24	Jun-21	Routine
FARM-TO-MARKET S DITCH	40032	7.5 N JCT SR 20	6/26/19	48	Jun-21	Routine
FLINN ROAD at MCELROY SLOUGH	40161	300 Ft E Blanchard Rd	6/26/19	24	Jun-21	Routine
BLANCHARD RD at MCELROY SLOUGH	40162	0.05 N JCT LEGG ROAD	6/26/19	24	Jun-21	Routine
UTOPIA RD at BLACK SLOUGH	40062	0.5 E JCT Hoehn Road	7/17/19	24	Jul-21	Routine
HELMICK RD at RED CK	40163	1.1 N JCT SR 20	7/17/19	24	Jul-21	Routine
BAY VIEW-EDISON JOE LEARY	40029	5.8 N JCT SR-20	7/24/19	24	Jul-21	Routine
PULVER ROAD at JOE LEARY	40031	.6 S JCT SR 11	7/24/19	24	Jul-21	Routine
BAY VIEW-EDISON / BIG INDIAN	40035	0.4 N JCT SR20	7/24/19	24	Jul-21	Routine
BAY VIEW STATE PARK	40141	3.5 N JCT SR 20	7/24/19	24	Jul-21	Routine
BURLINGTON NORTHERN OVERPASS	40110	0.25 N JCT COOK ROAD	7/31/19	24	Jul-21	Routine
BAKER RIVER	CONCRETE1	0.1 N MAIN ST	8/8/19	24	Aug-21	Routine - UBIT
RIVERSIDE BRIDGE	MV-1	0.7 N JCT SR 538	8/8/19	24	Aug-21	Routine - UBIT
LAKE VIEW BLVD/NOOKACHAMPS	40001	0.25 S JCT SR9	8/21/19	24	Aug-21	Routine
NOOKACHAMP HILLS CULVERT	40005	0.75 E JCT SR 9	8/21/19	24	Aug-21	Routine
COOK RD at DD14 DITCH	40009	0.5 E JCT INTERSTATE 5	8/21/19	24	Aug-21	Routine
COOK RD at BRICKYARD CK	40012	MP 5.38 COOK RD	8/21/19	24	Aug-21	Routine
KNAPP RD at NOOKACHAMPS	40054	0.1 E JCT SR 9	8/21/19	24	Aug-21	Routine
NEFFS CROSSING	40112	1.0 N JCT COOK RD.	8/23/19	24	Aug-21	Routine
OLD HWY 99 at THOMAS CK	40113	1.4 N JCT COOK RD.	8/23/19	12	Aug-21	Routine
LACONNER WHITNEY at SL	40038	3.83 S JCT SR 20	9/4/19	24	Sep-21	Routine
E PETER JOHNSON RD	40041	1.0 E JCT CEDARDALE ROAD	9/4/19	24	Sep-21	Routine
MARCHS POINT PIPELINE	40126	1.6 N JCT SR 20	9/4/19	24	Sep-21	Routine
CAMPBELL LAKE OUTLET	40142	0.39 W JCT SR 20	9/6/17	48	Sep-21	Short Span
F&S GRADE SAMISH RIVER	40013	0.14 S JCT PRAIRIE RD	9/20/19	24	Sep-21	Routine
GRIPP RD at SAMISH R	40014	0.1 E JCT PRAIRIE ROAD	9/20/19	24	Sep-21	Routine
PRAIRIE RD S at SAMISH R	40015	2.21 E JCT OLD HWY 99	9/20/19	24	Sep-21	Routine
PRAIRIE RD W at SAMISH R	40016	3.8 E JCT OLD HWY 99	9/20/19	24	Sep-21	Routine
PRAIRIE RD FRIDAY CK	40017	0.17 Mi E of OLD HWY 99	9/20/19	24	Sep-21	Routine

BRIDGE NAME	BRIDGE No.	LOCATION	LAST INSP	INSP FREQ (months)	NEXT INSP	INSP TYPE
PRAIRIE RD E at SAMISH R	40055	0.5 W JCT SR 9	9/20/19	24	Sep-21	Routine
NORTH BURLINGTON BLVD	BURLINN-2	1.02 MI SO OF COOK RD	9/25/19	24	Sep-21	Routine
GOLDENROD BRIDGE	BURLINN-3	.3 N. of W. MCCORQUEDALE	9/25/19	24	Sep-21	Routine
S LAVENTURE RD at MADDOX CK	40164	0.5 E JCT I-5	10/9/19	24	Oct-21	Routine
HOAG STEWARD OVERPASS	MV-2	RIVERSIDE DR JCT HOAG ST	10/23/19	24	Oct-21	Routine
ELEANOR LANE A	MV-3	0.1 E JCT OLD HIGHWAY 99	10/9/19	24	Oct-21	Routine
SKAGIT HIGHLANDS PARKWAY	MV-4	0.4 N JCT E DIVISION ST	10/9/19	24	Oct-21	Routine
LANDMARK DRIVE	MV-5	EAST OF JCT S WAUGH RD	10/16/19	24	Oct-21	Routine
EAGLEMONT DRIVE	MV-6	0.1 S JCT BEAVER POND N	10/12/17	48	Oct-21	Short Span
J OFF BEAVER POND DR S	MV-7	0.07 SE JCT PARKVEIW LN	10/16/19	24	Oct-21	Routine
BEAVER POND DR SOUTH	MV-8	0.5 N JCT EAGLEMONT DR	10/23/19	24	Oct-21	Routine
BEAVER POND DR NORTH B	MV-9	AT JCT PARKVEIW LN	10/23/19	24	Oct-21	Routine
OLYMPIC LANE	MV-10	0.02 JCT BEAVER POND DR N	10/16/19	24	Oct-21	Routine
BEAVER POND DR NORTH A	MV-11	0.2 N JCT EAGLEMONT DR	10/16/19	24	Oct-21	Routine
GUEMES ISLAND FERRY DOCK	40153	GUEMES ISLAND	5/15/17	60	May-22	Underwater
ANACORTES FERRY DOCK	40152	0.41 N JCT SR 20	5/16/17	60	May-22	Underwater
NORTH FORK BRIDGE	40037	5.5 W JCT INTERSTATE 5	9/25/17	60	Sep-22	Underwater
RIVERSIDE BRIDGE	MV-1	0.7 N JCT SR 538	9/25/17	60	Sep-22	Underwater
BAY VIEW-EDISON at SAMISH R	40028	0.5 W JCT SR 537	9/24/18	60	Sep-23	Underwater
SOUTH FORK BRIDGE	40008	1.0 W JCT INTERSTATE 5	9/25/18	60	Sep-23	Underwater

## APPENDIX C - BRIDGE MAINTENANCE LIST

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40001	LAKE VIEW BLVD at NOOKACHAMPS	2	Tighten nuts on pier cap repair braces	15-Oct-19
		2	Bank protection: armor missing upstream end on the right bank.	
		2	Sidewalk: Repair sidewalk approach where rebar is exposed (north end).	15-Oct-19
		3	Clear debris from submerged columns	
40002	SWAN ROAD BRIDGE	3	Upgrade rails to meet current standards.	
		1	Raise approach rail to minimum height.	
		2	Approach Rail - Post #8 NE quadrant needs replaced, suffering from termites	
		3	Missing nut on bridge rail post, NW corner.	
		3	Paint steel diaphragm / cross bracing.	
		3	Sweep deck - vegetation growing along concrete curb.	
		M	Two large trees fallen upstream of bridge. MONITOR	
M	Depression in deck over upstream pile. Monitor for settlement			
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.	
		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.	
40008	SOUTH FORK BRIDGE	0	Ramp/feather patch east approach roadway with ACP to provide a smooth transition on and off the bridge. Revised, updated photo and corrected location in 2018. 2016 repair incorrectly noted that this was at the west approach. (SRD/TRM)	
		1	Post for EV2 and EV3 loads	
		2	Update Load Rating tab codes to reflect values from the most recent Load Rating Report.	
		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, Girder 8A at Pier 8 Revised and updated photos in 2018 (SRD/TRM).	
40009	COOK RD at DD14 DITCH	2	Clean bird guano from lateral gusset plates and girder bottom flanges in steel Spans 1, 2 and 3.	
		1	Crack seal transverse cracks at both ends of bridge	
		3	Patch 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	3	Patch spall with grout in G2 near east abutment	
		3	Patch spall with grout in G2 near east abutment	
		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	3	Clear vegetation from abutment ends	21-Aug-19
		2	Patch exposed rebar in deck, apprx 6 square feet	
40014	GRIPP RD at SAMISH R	3	A/C level roadway / shoulder approaches	
		2	A/C level east approach	
		3	Repair: patch spall in the wingwall.	
40015	PRAIRIE RD S at SAMISH R	M	MONITOR: Bridge is bypassable, right upstream channel protection is starting to slump into river and needs to be monitored after high water events.	
		1	Missing armoring on south abutment which experiences higher velocities.	
		2	Tighten cable on NW ET guardrail.	
40016	PRAIRIE RD W at SAMISH R	3	Add additional fill and armoring to north bank, piles exposed.	
		1	Impact damage to NW section of guardrail.	
		2	NW section of guardrail damaged and post leaning.	
40017	PRAIRIE RD FRIDAY CK	M	Scour protection damaged during high water event - Monitor stability	20-Sep-19
		2	Spalls on upstream curb.	
		2	Seal and cover diagonal cracking occurring in upper flanges	
40018	FRIDAY CREEK 1ST BRIDGE	M	Continue to monitor channel migration to the east.	08-May-19
		1	East drain pipe too long causing it to clog. Cut off approximately 8"	
		1	Patch sink hole in south approach at Centerline.	
		2	Replace scoured armoring on abutment #2 (south)	
		2	Patch exposed rebar in girders #1 #2 #3 & #4 and Soffits.	
		2	Patch exposed rebar in girders #1 #2 #3 & #4 and Soffits.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		3	Remove BST overspary	08-May-19
		3	Pressure wash concrete curbing and rail posts - repaint.	
		3	Upgrade bridge rails to current standards.	
40019	FRIDAY CREEK 2ND BRIDGE	1	NW section of guardrail, 1st post needs replacing.	08-May-19
		2	NW Type 3 Obj. marker has a broken post and is leaning. Sign is reusable.	
40020	FRIDAY CREEK 3RD BRIDGE	2	Brush and paint guardrail posts	
		2	Drain: repair drain downspout on upstream side - it has broken off.	
		2	Pressure wash moss off curbing and girders	
		3	Upgrade guardrail to current standards	
		M	Monitor failed armoring and scour hole under Abut#1	
40021	FRIDAY CREEK 4TH BRIDGE	2	Upgrade guardrail to standard.	15-May-19
		2	Exposed rebar: wire brush and patch exposed rusty rebar on girders 1, 2, and 4	
		3	Patch and level approach	
		3	Remove overspary (chipseal) on deck.	
		3	SE drain pipe needs repairs	
		M	bank erosion 30' upstream	
40022	FRIDAY CREEK 5TH BRIDGE	2	G4 - remove spalled concrete, wire brush 8' of exposed rusty rebar, cover with grout or epoxy.	15-May-19
		2	Abutments: backfill material and repair armoring along abutment #1	
		3	Diaphragms rusty - need steel brushing and paint	
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 N DITCH	3	Patch spall on outside of rail at connection (8th post from North)	25-Jun-19
		M	Monitor settlement on the road approaches.	
40027	BAY VIEW-EDISON at SAMISH SL	2	Sweep shoulders between bridge rail and BST	
		3	Remove vegetation around bridge	
40028	BAY VIEW-EDISON at SAMISH R	3	Paint guardrail posts	
		M	Monitor undermining of gabion wall at Pier 1.	
40029	BAY VIEW-EDISON at JOE LEARY	1	Repair drainage structure in southwest corner.	24-Jul-19
		1	Deck needs rehab - suggest a modified polymer overlay	24-Jul-19
		1	Backfill material loss under slumping SW gabion	
		2	A/C level both approaches at the joint.	
		2	Guardrail - 1st post on NE quadrant and SE quadrant rotten and needs replaced.	
		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	Repair lost armoring at abutment #2	
		3	Remove barb wire fence from under bridge. Restricting access.	
40031	PULVER ROAD at JOE LEARY	1	Paint bridge rails and posts. See photo.	24-Jul-19
		1	Seal deck with a membrane, to prevent further spalling and corrosion of the rebar.	
		3	Sweep deck	
		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.	
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 R	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 at	2	SE guardrail missing 4 nuts and 1 bolt.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
	BIG INDIAN	3	Sweep deck	24-Jul-19
40036	FARM-TO-MARKET	2	Vegetation needs to be cut around the ends of the bridge.	25-Jun-19
	JOE LEARY	2	Sweep deck/unplug drains.	
		3	Brush and patch spalls in slab	
40037	NORTH FORK BRIDGE	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 or replace east abutment slope drains to prevent further erosion.	
		2	Update Load Rating tab to reflect values from most recent Load Rating Report.	
		2	Repair damaged north thriebeam in Span 2.	
		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	
40038	LACONNER WHITNEY at	1	Deck needs sweeping	04-Sep-19
	SULLIVAN SL	1	Remove vegetation from the bridge ends.	
		2	Scuppers need cleaning out.	
		2	Paint the bridge rail posts, are peeling and rusty.	
40039	RAINBOW BRIDGE	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 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	At the following locations, drill out the broken or missing rivets and replace with an A325 bolt: West arch south face of the Panel Point 3 strut connection. (Two rivets) West arch U10 to U11 south face splice. (Three rivets) (Quantity correction, 4/4	
		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	
		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	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	
		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	Clear brush away from bridge at Pier 4 to make room for UBIT access.	
		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: U5W, U8W, U9W, U13W, U6E, U7E, U8E, U11E, U12E, U13E, and U15E (U13E, U15E added 4/21/2014, GAS/PFK)	
		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)	
		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. (No changes as of 4/4/18, FPP/TJN)	
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	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
40043	CONWAY HILL at	3	Clear vegetation from deck curb and joints.	
	CARPENTER	3	Guardrail posts need replaced - 2nd from east bank, downstream side. 4th post from west bank, upstream side.	
40044	PIONEER HWY at BIG DITCH	1	Deck needs vegetation removal and sweep.	
		2	Replace rotten guardrail posts, seen Elem 1686 note	
		3	Crack seal overlay	
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.	
40046	LK CAVANAUGH RD at BEAR	3	Sweep deck	
		3	Upgrade bridge rails	
		3	Brush and patch rust exposed rebar in girders.	
40047	LK CAVANAUGH at PILCHUCK	1	Post for SU6, SU7 and EV2, EV3	
		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	Channel migrating to the east upstream of bridge.	
		M	Losing material behind Abut #2	
40052	TAYLOR RD at WALKER CK	M	Monitor bridge after high water event.	
40054	KNAPP RD at NOOKACHAMPS	1	Brush and patch failing patches over pick points	
		2	Remove vegetation from SE corner of bridge deck. Grass us limiting drainage.	21-Aug-19
		3	Remove moss and overgrowth on abutment ends.	21-Aug-19
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.	
		3	Paint rail posts	
		3	Repair spalls in concrete railing, approx. 2'.	
		3	Cover exposed rebar of damaged curbing at abutment #1.	
		M	Left bank erosion downstream of bridge.	
40061	MINKLER RD at WISEMAN CREEK	1	Remove (dredge) material and debris under the bridge.	
		2	Remove Fence from downstream headwalls	
		2	Clean and patch spall in Beam #5.	
		3	NW End Treatment has minor damage but appears to be still functioning properly	
		3	Patch the damaged areas on the curb.	
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 HWY at CHILDS CREEK	1	Post for SU6 and SU7 and possibly EV3	
		2	Brush rebar and patch spall at NW abutment/girder joint.	
		3	Missing nut on guardrail post: 2nd post from the west end, downstream side.	
		3	Pressure wash balluster rails and sides.	
		3	Guardrail post rotten: 3rd post from southwest end.	
		M	Spacer blocks on bridge rail retrofit are showing signs of rot.	
		M	Scour hole on backside of guardrail at southwest end	
M	Channel migrating west in the NW corner of bridge - MONITOR			
40066	HAMILTON CEMEMTERY RD at MUDDY CREEK	3	Pressure wash curbs.	
		3	Vegetation management needed around bridge abutments.	
40067	CAPE HORN RD at ALDER CREEK	1	Patch potholes located at bridge joint.	
		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	
		3	Upgrade guardrail to current standards	
40069	CONRAD RD at SWIFT CREEK	M	Monitor the bank protection, check after high water.	
		2	Sweep Deck	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		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 NE 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	Repair or replace the 20 ft length of damaged guardrail at the NW corner	
40071	CASCADE RIVER BRIDGE	1	Repair thrie beam transition at nw corner. Damaged from fallen tree.	
		2	Patch exposed rebar in deck.	12-Jun-19
		2	Sweep deck and shoulders	
		2	Clean drains - plugged with debris	
		M	River mainstem appears to be shifting South, upstream of bridge - MONITOR	
40072	CASCADE RIVER RD at MONOGRAM	1	Debris removal: remove boulders form under bridge.	
		2	Concrete repair: patch left and right wingwalls; and abutment #2.	
		M	Waterway: monitor bridge at high water, stream overtops the bridge and bypasses on the left end.	
40073	LOOKOUT CRK BRIDGE	M	Drain flow path has eroded bank and become very steep. Currently stable. MONITOR	
40074	CASCADE RIVER RD at MARBLE CREEK	2	NE End treatment isn't up to standard	
		2	SE Wrap around end treatment is damaged	
		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 CREEK	1	Fill potholes in bridge approach.	
		2	Sweep debris off deck, a lot of gravel	
		2	Repair abutment #1 armor.	
40080	S SKAGIT HWY at PARKER CREEK	M	Small scour hole forming - MONITOR	
40081	S SKAGIT HWY at DAY CREEK	3	Wire brush and patch exposed rusty rebar in the girders	
		M	Some debris under span 3 - Monitor	
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.	
		3	Guardrail - 2nd transition post in NE Quad is beginning to rot.	
		3	Paint rail posts	
40083	S SKAGIT HWY at CUMBERLAND CREEK	2	Level approach with A/C leveling and removal of BST Overspray	
		2	Paint rail posts	
		M	Channel has been rerouted downstream of bridge - MONITOR	
40084	S SKAGIT HWY at O'TOOLE CREEK	2	Scour causing sloughing behind Abut #2. May be causing material loss and dips at the approaches. Replace fallen armoring along both abutments.	
		2	Rails need painting	
		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	
		2	Patch exposed rebar in the girders.	
40088	S SKAGIT HWY at PRESENTIN CREEK	1	Resurface / rehabilitate bridge deck	
		2	Cut back vegetation at abut #1	
		3	Paint steel rail posts.	
		M	Upstream channel migrated into east channel, west is filling with sediment - MONITOR	
40089	S SKAGIT HWY at FINNEY CK	M	Debris accumulating again at Span 1 & 3 - Monitor	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
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 li	
		2	Replace poured joints over floorbeams with a Dow Corning pourable joint or equivalent.	
40094A	ROCKPORT CASCADE at ILLABOT CREEK	2	AC level eastern approach	
		3	Pothole on west end of bridge WB lane	
		3	Replace rubber joints	
		3	Possibly post for EV3	
40095	ROCKPORT CASCADE RD at JORDAN CREEK	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: 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".	
		1	Secure or remove section of broken steel grid deck in Span 2, Panel 3. Revised 2018 (SRD/TRM).	
		2	Update Load Rating tab to reflect values from the most recent Load Rating Report.	
		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 CK	2	Repair and patch driving surface.	
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	Replace damaged transition rail on SW section.	22-May-19
		2	Repair loose Type III sign southwest corner.	
		2	Repair: Posts need painting	
		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	Patch and crack seal transverse cracking occurring in A/C overlay.	15-Oct-19
		1	Install temporary shoring around red tagged pile.	
		2	Replace rotten guardrail posts at the SW and NW corners of bridge	15-Oct-19
		2	Replace or reinforce rotted timber abutment planks along bottom of both abutments.	
40114	SAMISH RIVER BRIDGE	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	Reset or replace rocker bearings at Pier 3. Joint is closed and header is breaking up.	05-Sep-19
		1	Current vertical clearance posting signs are misleading. Revise vertical clearance posting signs to read 14' 1" at the west curblin and 14' 4" at the east curblin. The minimum vertical clearance points are under the gusset plates at the portal/bracing	05-Sep-19
		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)	
		2	Update Load Rating tab to reflect values from the most recent Load Rating Report.	23-Jul-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 oth	05-Sep-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

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 b	05-Sep-19
40115	OLD HWY 99 at FRIDAY CREEK	1	Post 4, SE rail, needs replaced	29-May-19 29-May-19
		2	Replace failing patch in northbound lane near midspan.	
		2	Scrub and patch exposed rebar in deck.	
		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	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	2	Repair scoured shoulder and improve drainage.	
		2	Replace failed armoring below west abutment.	
40126	MARCHS POINT PIPELINE	3	Patch or replace curb - cracked and spalling at north/west corner.	
40129	LYMAN HWY at MUDDY CK	1	Muddy Creek requires channel maintenance.	
		3	Clear vegetation growing in sandbar along bridge.	
40130	LYMAN HWY at RED CABIN CREEK	2	Repair: left bridge seat approach road has a D spall in pavement 1' x 9".	
		3	Westbound guardrail end treatment damaged (NE quadrant)	
		3	Backfill sloughing shoulder, NW corner.	
		M	Scour hole at downstream end of Abut #2 - Monitor	
40131	LYMAN HWY at MANNSEER CREEK	1	Post for SU and EV ratings	
		2	Upgrade Guardrails	
40132	LYMAN HWY at JONES CREEK	1	Post for all under legal loads	
		3	Pressure wash concrete bridge rails	
		M	Scour along Abutment 2, install new armoring and backfill.	
40140	BAKER LAKE RD at E GRANDY CREEK	1	Replace upstream top rail - section loss and corrosion.	
		2	Wire brush and patch exposed rusty rebar and failed patches.	
		3	The SW rail and end treatment need to be raised. Currently top of rail is at 17"	
40141	BAY VIEW STATE PARK	2	Paint bridge rails and posts.	
		3	Rails: upgrade to meet current standards.	
40142	CAMPBELL LAKE OUTLET	M	S.S. screen upstream of bridge	
		M	Watch for insect damage to piles and caps.	
40151	NICHOLSON at CHILDS CREEK	2	Patch potholes at southern approach at the joint.	
		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 precoating the strands and reinforcement, or u	
		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.	
		3	Lift motor gear box leaks oil. Repair leaks.	
40153	GUEMES ISLAND FERRY DOCK	1	Replace the lower clevis bolt attachment to the hoisting block on the right girder. This bolt is yielding.	
		1	Restore the design edge distance of the gusset hole for the apron lift beam.	
		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 sectio	
		1	Clean and spot paint all steel areas which have corrosion.	
		2	Replace upper clevis pin on right hoist platform. This pin has insufficient grip length causing threads in bearing.	

BRIDGE NUMBER	BRIDGE NAME	PRI-ORITY	REPAIR DESCRIPTION	CLOSED OUT
		3	Lift motor gear box leaks oil. Repair leaks.	
40156	CEDARDALE RD at	1	Repair cable rail, sw quadrant.	
	CARPENTER CREEK	2	Replace block outs with 6" blocks on rails - see Ele. 330	
		2	Upgrade bridge rails / transition / guardrail / end treatments	
40157	BENSON RIDGE LN at	1	Settlement at both approaches - A/C level	
	CARPENTER CREEK	2	Tighten cleats. Last performed in 2010	
		3	Section loss in deck. Replace 2' of failed board.	
40159	MINKLER RD at COAL CREEK	1	Remove material and debris from underneath bridge	
		2	Replace all rail posts that are damaged (6 upstream side, 2 downstream side)	
		2	Digout and rebuild west approach	
		2	Repair spalls upstream side of bridge (12)	
40160	SINCLAIR ISLAND DOCK	1	Piers 1 and 2: replace piles and caps, they have reached life expectancy.	
		1	Ramp: pressure wash and treat with preservative.	
		1	Dock: pressure wash and treat with preservative.	
		1	Float: pressure wash algae off of the concrete, is slippery. Patch spalls in surface. Weld or bolt new steel to edges to hold the panels together. The channel beam has significant section loss.	
40161	FLINN ROAD at	3	Sweep deck	
	MCELROY SLOUGH	3	Patch spall in deck at joint of Abut #2	
40162	BLANCHARD RD at	2	Replace broken guardrail post on the NE end treatment.	
	MCELROY SLOUGH	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	Water flowing from abutment #2, below G5	
		M	Creek eroding both banks and nearing abutment piles.	
40164	S LAVENTURE RD at MADDOX CREEK	M	Maddox Creek migrating towards west abutment wall - Monitor	