2024 ANNUAL BRIDGE REPORT

REPORT OF ROAD BRIDGE CONDITIONS
MASON COUNTY, WASHINGTON

County Road Administration Board
2404 Chandler Ct SW
Olympia, WA 98502

RE: 2024 Annual Bridge Report

Dear Ladies and Gentlemen:

We are pleased to provide the 2024 Annual Bridge Report. This report is required under (WAC) 136-20-060, and the reporting period is from mid-2023 to mid-2024, as required by WAC. The report highlights the components of the County bridge inspection program, and includes the following information:

- County Bridge Map
- Bridge Inventory
- Bridge Inspections Discussion
- Bridge Findings
- Deficient Bridges
- Posted Bridges
- Scour Evaluation Discussion

The report summarizes the Mason County Bridge Programs efforts to maintain and preserve the County's bridges. The Board of County Commissioners has this report available to them during the preparation of the Six Year Transportation Improvement Program. Please contact us if you have questions about this report.

Approved By: Michael Collins 1-23-24
Mike Collins, PE., PLS.
County Engineer

Reviewed By: David M Smith 1/23/2024
Dave Smith, PE.

MASON COUNTY

2024 ANNUAL BRIDGE REPORT

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

"Each county engineer shall furnish the county legislative authority with a written report of the findings of the bridge inspection effort. This report shall be made available to said authority and shall be consulted during the preparation of the proposed six-year transportation program revision. The report 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. It is highly recommended that deficient short span bridges, drainage structures, and large culverts be included in said report."

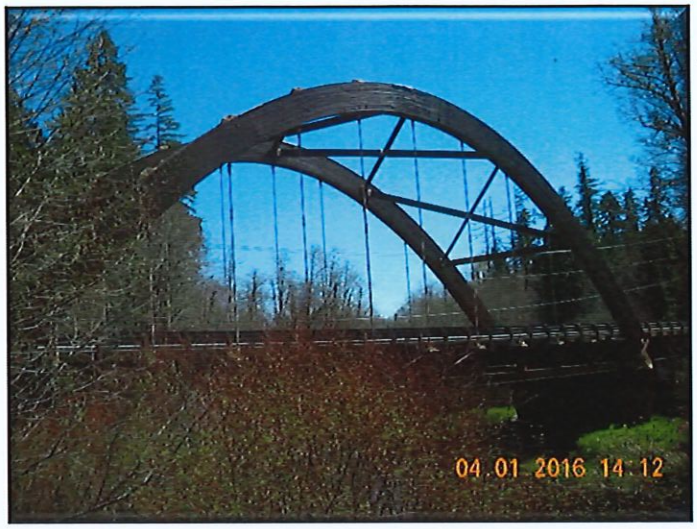
Table of Contents

Acronyms

The Following is a list of common acronyms widely used in the bridge inspection field:

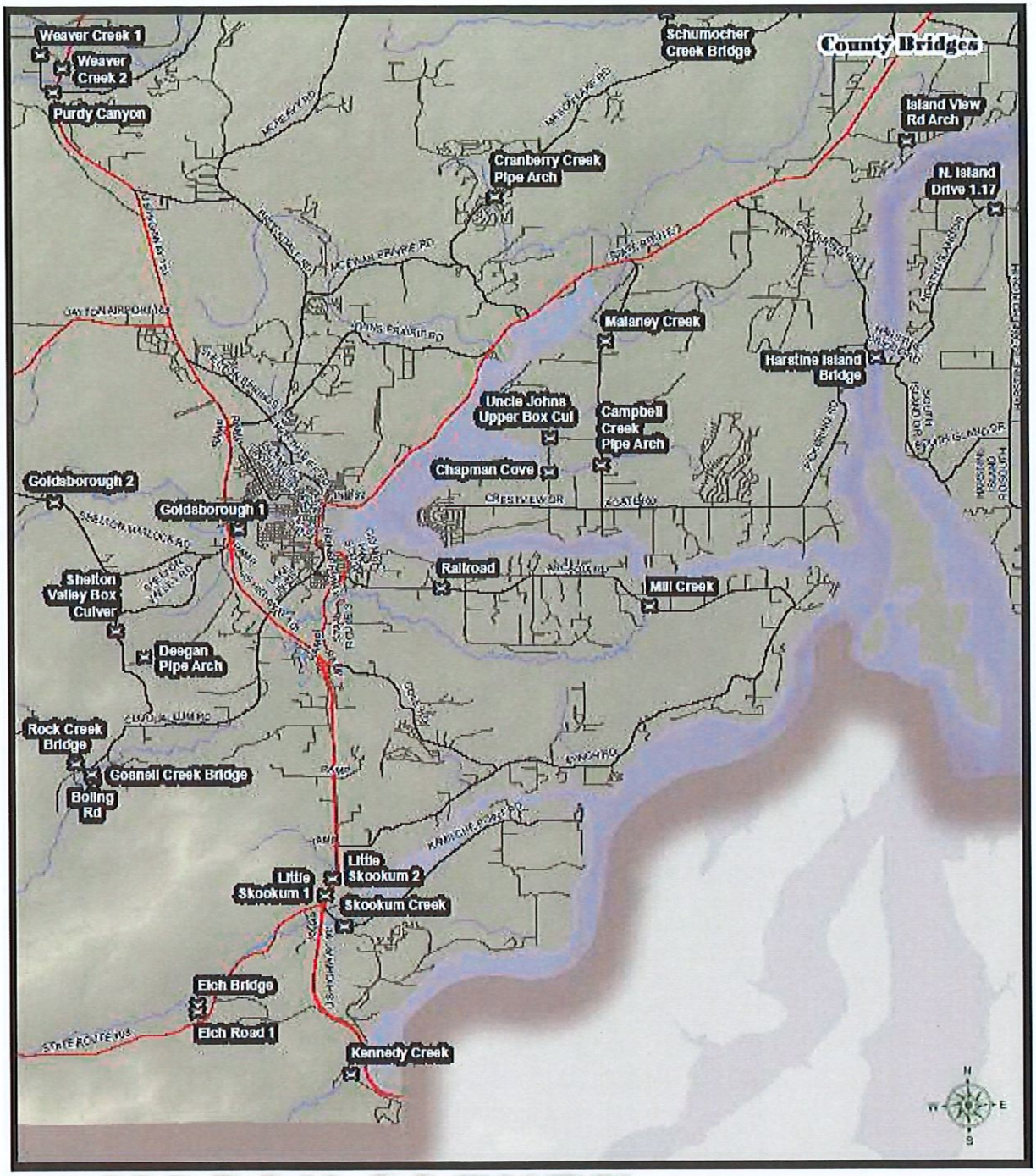
ADT	Average Daily Traffic
CFR	Code of Federal Regulations
FHWA	Federal Highway Administration
NBIS	National Bridge Inspection Standards
NSTM	Non-redundant Steel Tension Member
SID	Structure Identification Number
UBIT	Under Bridge Inspection Truck
WAC	Washington Administrative Code

WSBIS	Washington State Bridge Inventory System
WSDOT	Washington State Department of Transportation



Eddy Evers, built 1996

COUNTY BRIDGE MAPS



MASON COUNTY
Washington

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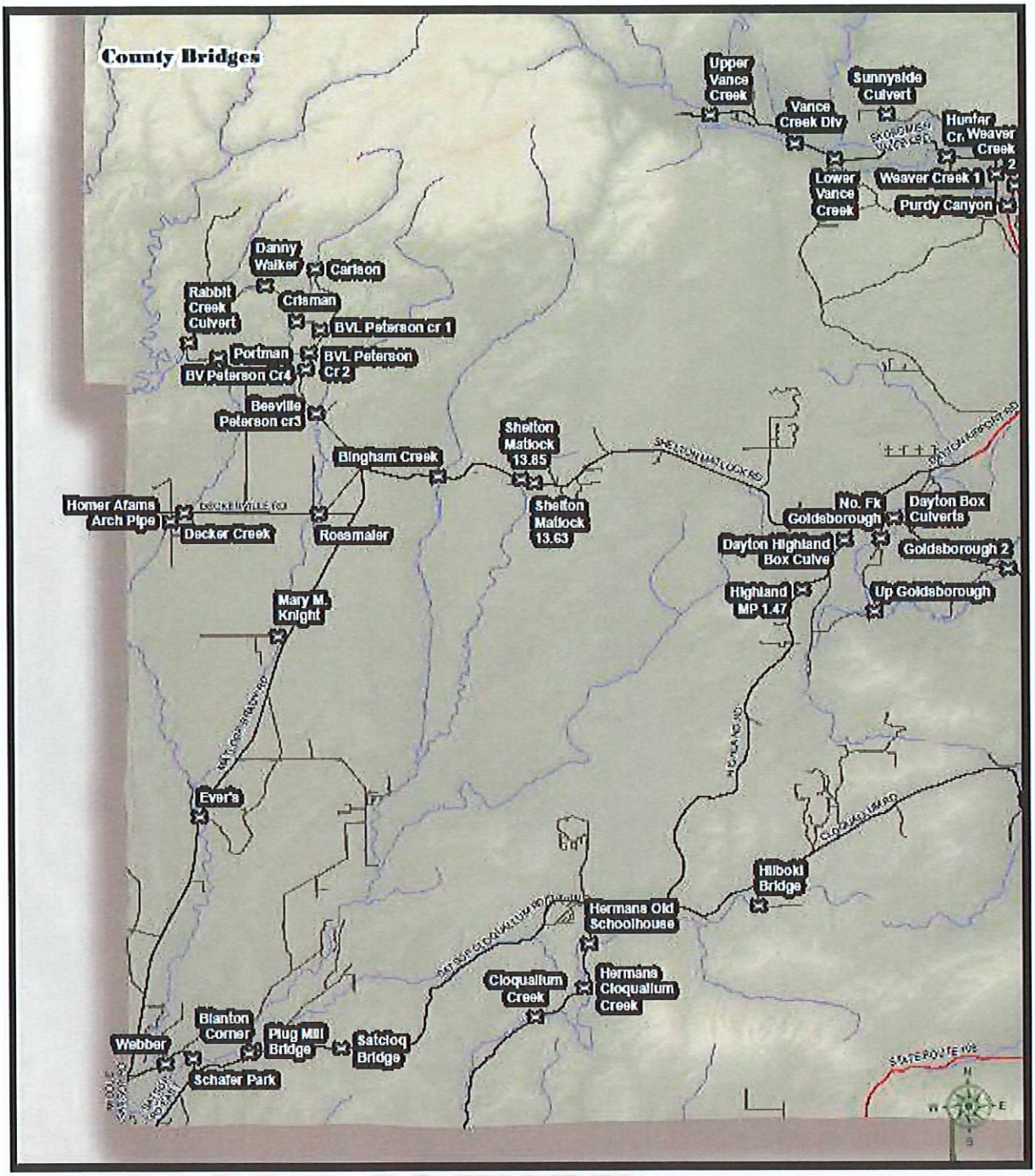
Mason County GIS Department
Map producted with ArcGIS 10.7
Map Information Date: November 2021


County Bridges
Upper Vance Creek
Sunnyside Culvert
Vance Creek Div
Hunter Cr
Weaver Creek 2
Lower Vance Creek
Weaver Creek 1
Purdy Canyon
Danny Walker
Carlson
Rabbit Creek Culvert
Crisman
BVL Peterson cr 1
Portman
BV Peterson Cr4
BVL Peterson Cr 2
Beeville Peterson cr3
Shelton Matlock 13.85
Bingham Creek
Homer Adams Arch Pipe
Decker Creek
Rosemaler
Shelton Matlock 13.63
No. Fk Goldsborough
Dayton Box Culverts
Dayton Highland Box Culve
Goldsborough 2
Highland MP 1.47
Up Goldsborough
Mary M. Knight
Evers
Hillbold Bridge
Hermana Old Schoolhouse
Cloquallum Creek
Hermana Cloquallum Creek
Blanton Corner
Webber
Plug Mill Bridge
Satcloq Bridge
Schafer Park
MASON COUNTY
Washington
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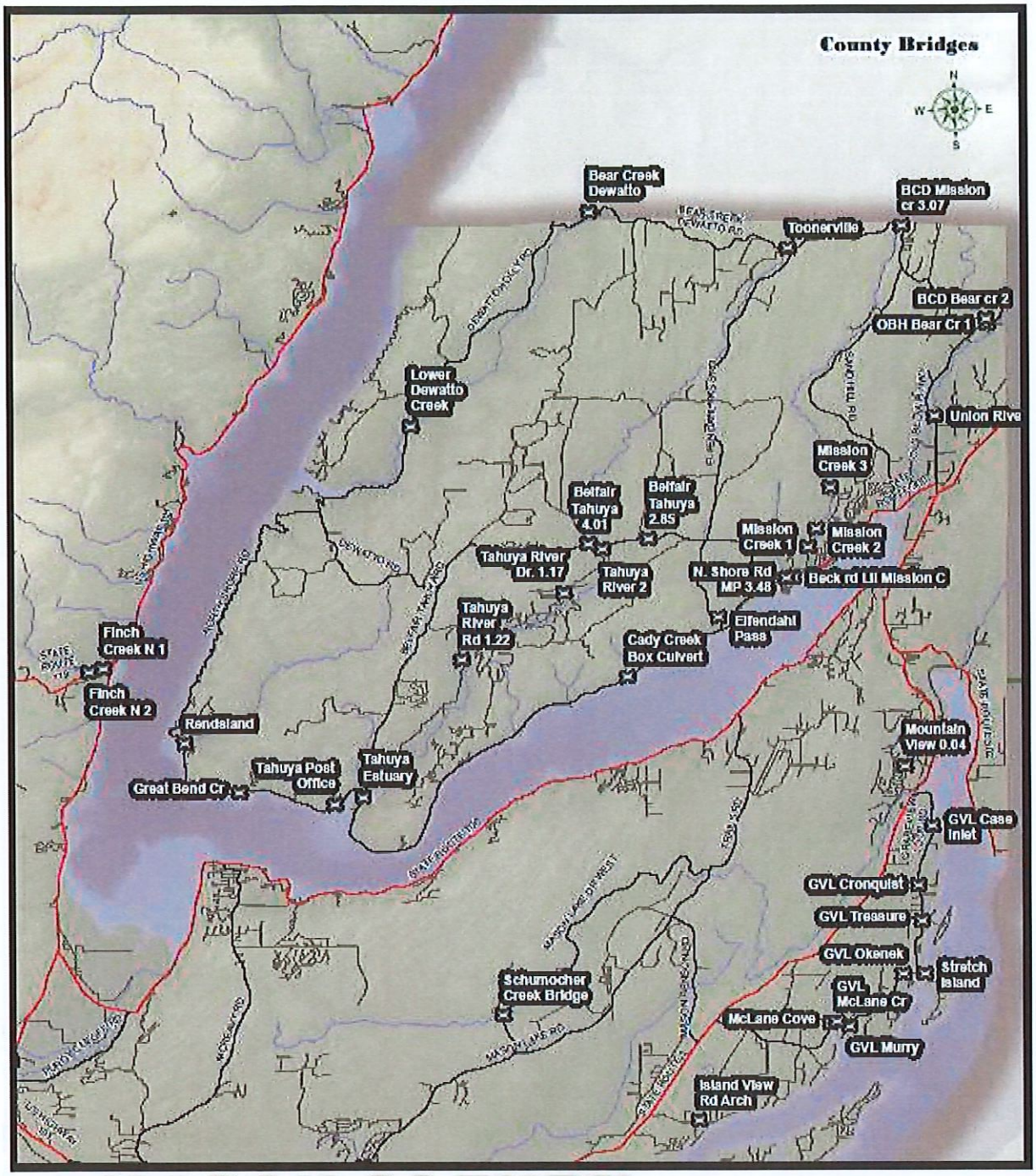
Miles
Mason County GIS Department
Map producted with ArcGIS 10.7
Map Information Date: November 2021


County Bridges
N
W
E
S
Bear Creek Dewatto
BCD Mission cr 3.07
Tooneryille
BCD Bear cr 2
OBH Bear Cr 1
Lower Dewatto Creek
Union Rive
Mission Creek 3
Belfair Tahuya 4.01
Belfair Tahuya 2.85
Mission Creek 1
Mission Creek 2
Tahuya River Dr. 1.17
Tahuya River 2
N. Shore Rd MP 3.48
Beck rd Lil Mission C
Tahuya River Rd 1.22
Elfendahl Pass
Cady Creek Box Culvert
Finch Creek N 1
Finch Creek N 2
Rendsland
Mountain View 0.04
Tahuya Post Office
Tahuya Estuary
Great Bend Cr
GVL Case Inlet
GVL Cronquist
GVL Treasure
GVL Okenek
Stretch Island
Schumocher Creek Bridge
GVL McLane Cr
McLane Cove
GVL Murry
Island View Rd Arch
MASON COUNTY
Washington
0 1.25 2.5 3.75 5
Miles
Mason County GIS Department
Map producted with ArcGIS 10.7
Map Information Date: November 2021

Introduction

This report summarizes Mason County's 2023 Bridge Program. This program forms an integrated and comprehensive strategy to maintain and preserve the county's bridges and road network continuity. The three main goals of the Bridge Program are:

- Keep the bridges open and safe for public use.
- Preserve the bridge infrastructure by having a formal bridge report for each bridge which contains inspection history documentation, condition evaluation, and bridge summary data.
- Replace bridges with reliable new structures when repair and/or rehabilitation are not economical or physically feasible.

This Bridge Report contains additional information concerning the county's bridge system. For each bridge listed in Appendix A, a condition report has been submitted to WSDOT for the Washington State Bridge Inventory Systems (WSBIS).

As required by WAC 136-20-060, each county engineer in Washington State must submit a written report of findings to the legislative body concerning the county's bridge inspection effort by June 1 of each year. We have compiled a variety of information in the annual update of the Bridge Report to serve the 2024 report requirements.

Before adoption of the annual budget, the Board of County Commissioners is required to adopt a Six-Year Plan for Transportation Improvements. WAC136-20-060 also requires that the resolution adopting the Six-Year Program state that this engineer's summary with respect to deficient bridges was available to the Board during preparation of the plan.

Rendsland Creek, built 1950

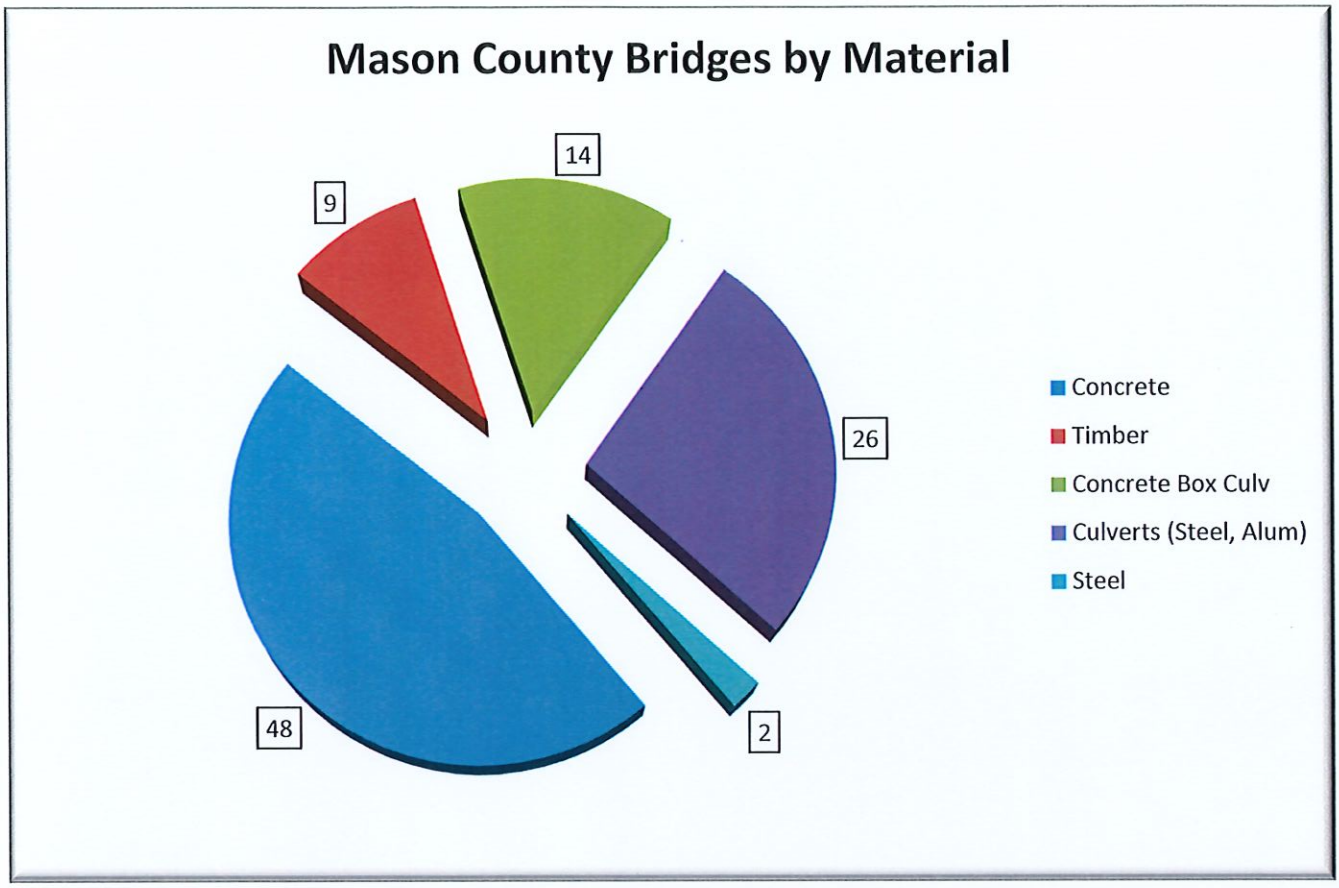
Bridge Inventory

Mason County Public Works inspects and inventories **98 roadway bridges and culverts** that are located within Mason County. All are entered into the Washington State Bridge Inventory System. Fifty-eight also are reported to the Federal Highway Administration as required by the RCW. The remaining 40 structures are "short spans" (structures under 20 feet in length) and are not required to be reported to the FHWA. These bridges consist of:

- 97 bridges and culverts owned by Mason County
- 1 bridge owned by the City of Shelton

Classified by substructures, the bridges inspected by Mason County are categorized as follows:

- 48 Concrete Bridges
- 8 Timber Bridges
- 14 Concrete Box Culverts
- 26 Culverts (Steel, Aluminum)
- 2 Steel Bridges



Bridge Inspections

Bridge Inspection is performed in accordance with the National Bridge Inspection Standards (NBIS) to conform to 23 CFR 650.3. The NBIS mandates that public agencies inspect and report on all bridges over 20' feet span, biannually. Under these standards, the county is required to document and report the current condition of each bridge, determine the degree of wear and deterioration, and recommend repairs or required service.

Mason County Public Works Department has been able to inspect each bridge at a minimum inspection frequency of two years. A more frequent inspection schedule is established for bridges that are aging, have a long maintenance history, or with high environmental exposure. This program has served the citizens of Mason County with early identification of maintenance needs, resulting in economical repair costs.

The inspectors use the NBIS standards to document the current condition of each bridge element listed. The deficiencies are coded to NBIS standards and show the degree of deterioration in various elements— the three primary elements being:

- deck,
- superstructure, and
- substructure

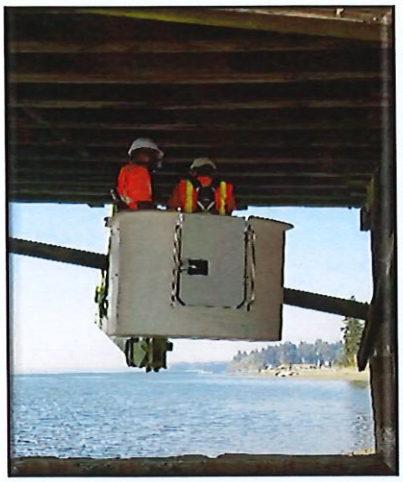
As deterioration occurs, the coding values drop, if applicable a repair order is issued to the Mason County maintenance or contractor to conduct the proposed repair. In cases where the coding factors drop significantly, the county engineer will recommend repair, replacement, or rehabilitation. Bridges with identified deficiencies may be inspected more often.

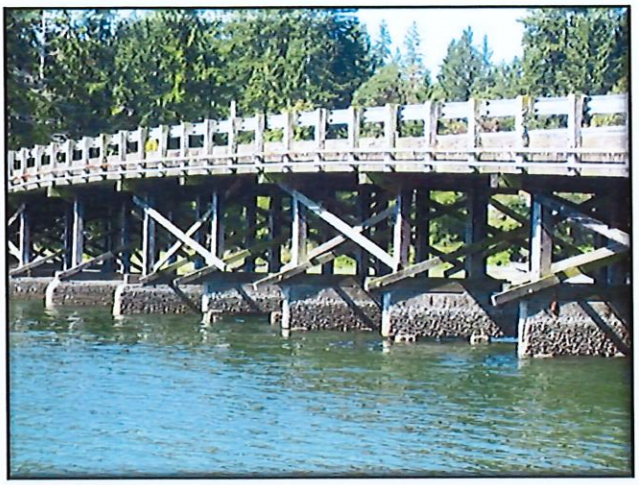
Updated inspection results are forwarded to the WSDOT's Highway and Local Programs Bridge Division, which in turn verifies compliance with the NBIS and reports to the Federal Highway Administration (FHWA). A copy of the Inspection Report is kept in the bridge file at Mason County Public Works.

Bridge Findings

When bridge deficiencies are found during inspections. Work items are identified and sent to the engineer. Some work items are urgent and are repaired quickly, while others are prioritized lower as longer-term maintenance items that will help extend the bridge's service life. Maintenance or contract crews concentrate on repairs that will help preserve the service life of the inventory, with an emphasis on safety.

Approximately half the bridges are inspected every other year. If the underside of the bridge deck cannot be given close or adequate inspection from the ground, then a special inspection using a UBIT (under bridge inspection truck) is required. During these bridge inspections, inspectors make an in-depth condition evaluation of the bridge structure and document any observable defects.
See our list of special inspections (Exhibit A), for details on inspection frequencies and schedules for all UBIT, underwater bridge (UW), and non-redundant steel tension members. (NSTM)





Stretch Island – 2022

Exhibit A

Structure ID	Bridge Name	2022 UBIT	2023 UBIT	2024 UBIT	2025 UBIT	2026 UBIT	Special Insp
08169800	**Chapman Cove**		**Mar 28**		**Mar 28**		
08619500	**Eddy Evers**		**Apr 25**		**Apr 25**		**2023 NSTM**
07996900	**Harstine Island**		**Apr24**		**Apr 24**		**2024 UW**
08072500	**Stretch Island**	**Sept 6**		**Sept 6**		**Sept 6**	

See Bridge Map page 4-6 for locations.

Deficient Bridges

Washington State bridge program no longer calculates the rating factor known as the Sufficiency Rating.
Structures are now determined structurally deficient when a **culvert, deck, superstructure, and / or substructure** overall condition code is of 4 or less (condition codes range from excellent 8 to failed condition 0).
OR
The **waterway adequacy** code is 2 or less.
Waterway adequacy appraises the waterway opening with respect to the passage of flow through the bridge (condition codes range from excellent 8 to closed 0).

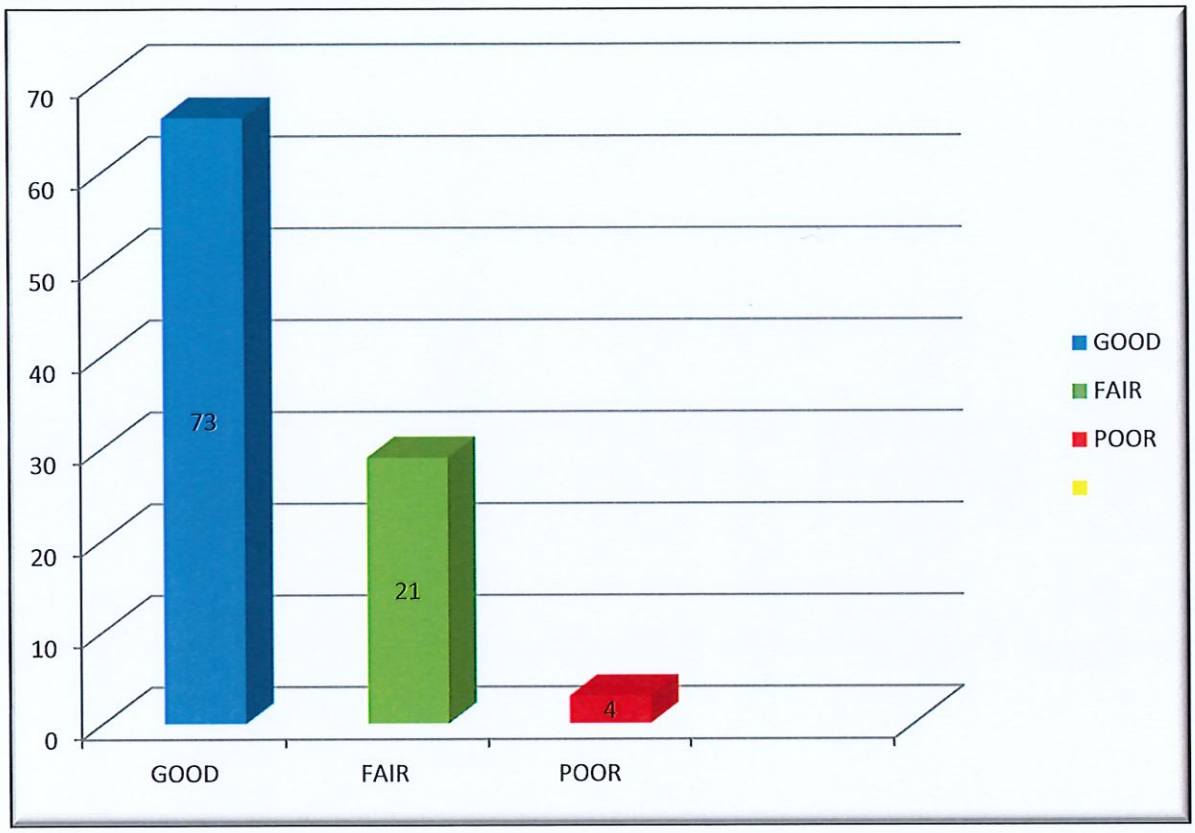
Mason County currently has 73 structures rated as good (codes are between 8 and 7).
Mason County currently has 21 structures rated as fair (codes are between 6 and 5).
Mason County currently has 4 structures rated as poor (see below).

Harstine Island Bridge deck condition code 3. (currently being repaired)

Hliboki Bridge superstructure condition code 4.
Toonerville Culverts condition code 4. (currently funded for replacement)
North Fork Goldsborough substructure condition code 4. (currently funded for repair)

The following chart shows an overview of Mason County's bridge conditions.

BRIDGE CONDITION RATING CHART



Posted Bridges

There is one load restricted bridge in Mason County (Exhibit B). This bridge is posted for load limits because the standards it was designed to do not meet standards currently in use. The remaining five bridges that require restrictions, per resolution, are due to their narrow width (also known as functionally obsolete).

Stretch Island Bridge

Exhibit B- Load Restricted Bridges

Structure ID	Bridge Name	Comments	Posted For
08332000	**Eich Bridge**	**Girder Fleure- Span 1 interior**	**SU6 thru SU7**
08312400	**Lower Dewatto Cr**	**Administrative**	**No Overloads**
08072500	**Stretch Island**	**Girder Flexure-Span8 Interior**	**SU4 thru SU7**

NOTE: SU is single unit vehicle

Scour Evaluation

In 1988, federal requirements for bridge inspections were updated to include mandatory scour evaluations for all bridges that cross water. Scour evaluations examine bridge abutments and piers that may be damaged because of debris build up or water surging around the structure and eroding foundation soils. The purpose of a scour evaluation is to determine the susceptability of a bridge's foundation to the erosive action of flowing water, excavating, and carrying away

material from the bridge foundation. **A bridge is considered scour critical if it's foundation is unknown or determined to be unstable for observed or calculated scour.**

The implementation of the mandated scour evaluation program in Washington requires all agencies responsible for bridges to complete scour evaluations. All bridges designated as scour critical require a scour Plan of Action. Mason County has 5 bridges that are scour critical based on shallow footings calculations and 29 bridges that are determined to be scour critical because of unknown foundations (Exhibit D). These bridges are monitored during and after **25 year** storm events.

Exhibit D Scour Critical Bridges

Scour Critical Bridges Based on Caculation

Structure ID	Bridge Name	Year Built	Scour Codes
08192400	GOLDSBOROUGH 2	1956	3 -SCOUR CRITICAL SHALLOW FOOTINGS
08608000	SHAFER PARK BR	1993	3-SCOUR CRITICAL SHALLOW FOOTINGS
08717800	EICH ROAD 1	2004	3-SCOUR CRITICAL SHALLOW FOOTINGS
08340800	MILL CREEK	1971	3-SCOUR CRITICAL SHALLOW FOOTINGS
08072599	STRETCH ISLAND BR	1973	3-SCOUR CRITICAL SHALLOW FOOTINGS

Scour Critical Bridges Based on Unknown Foundations

Structure ID	Bridge Name	Year Built	Scour Codes
08185100	WEAVER CREEK 2	1966	U – Unknown Foundation Elevations
08279900	MARY M. KNIGHT	1970	U – Unknown Foundation Elevations
08404300	WEBBER	1967	U – Unknown Foundation Elevations
08616600	HERM OLD SCHOOLH	1996	U – Unknown Foundation Elevations
08619700	HERM CLOQ CR BR	1996	U – Unknown Foundation Elevations
08493300	7TH GOLDSBOROUGH	1978	U – Unknown Foundation Elevations
08230300	L'TE SKOOKUM 1	1925	U – Unknown Foundation Elevations
08233000	L'TE SKOOKUM 2	1925	U – Unknown Foundation Elevations
08614700	CLOQUALLUM CR	1994	U – Unknown Foundation Elevations
08252600	Upper Goldsborough	1966	U – Unknown Foundation Elevations
08268300	UNION RIVER	1987	U – Unknown Foundation Elevations
08303700	TAHUYA ESTUARY	1961	U – Unknown Foundation Elevations
08312400	LOWER DEWATO CR	1967	U – Unknown Foundation Elevations
08161500	VANCE CREEK DIV	1959	U – Unknown Foundation Elevations
08863400	BLANTON CORNER	1971	U – Unknown Foundation Elevations
08863600	BOLING RD	1971	U – Unknown Foundation Elevations
08169100	HLIBOKI BRIDGE	1961	U – Unknown Foundation Elevations
08232300	NO FK GOLDSBOROU	1958	U – Unknown Foundation Elevations
08332000	EICH BRIDGE	1968	U – Unknown Foundation Elevations
08369800	CRISMAN	1954	U – Unknown Foundation Elevations
08169800	CHAPMAN COVE	1950	U – Unknown Foundation Elevations
08080600	DECKER CREEK	1949	U – Unknown Foundation Elevations
08259500	RENDSLAND BR	1950	U – Unknown Foundation Elevations

08321900	GOLDSBOROUGH 1	1967	U – Unknown Foundation Elevations
08486200	MISSION CREEK 2	1967	U – Unknown Foundation Elevations
08304300	TAHUYA POST OFF.	1963	U – Unknown Foundation Elevations
08149500	BINGHAM CREEK	1960	U – Unknown Foundation Elevations
08857600	PORTMAN	1954	U – Unknown Foundation Elevations
08857700	DANNY WALKER	1954	U – Unknown Foundation Elevations

Emergency Repairs & Inspections

No emergency repairs were conducted from mid-2022 to mid-2023.

Bridge Maintenance Activities

Maintenance and repairs are sometimes necessary to prevent further deterioration of structures to extend their useful life, and to reduce major repair costs in the future. During bridge inspections, maintenance needs are identified and documented. Minor bridge repair work is completed by county road operations and maintenance crews, with major repairs being completed by contract. Typical annual maintenance includes brush cutting, deck and drain cleaning, sign repairs, and guardrail repairs. This year, general maintenance was performed by the leveling of roadway approaches, cleaning decks and drains, brush removal, and crack sealing.

Completed Bridge Projects

Cady Creek concrete box culvert was installed in the summer of 2022 by county forces.

Cady Creek box culvert

Great Bend concrete box culvert was installed in the summer of 2022.

Great Bend box culvert

Sunnyside single radius pipe arch was installed by county forces in the summer of 2023.

Sunnyside Culvert

Harstine Island Bridge deck rehabilitation was performed by contract in the summer of 2023.

Harstine Island Bridge

Current Bridge Projects

The N Island Drive culvert replacement project will be installed by contract in the summer of 2024, and funded by Rural Arterial Program state funds.

The Toonerville twin culvert replacement project is projected to be completed in 2024, funded by Bridge Replacement Federal funds.

Programed Bridge Projects

Stretch Island Bridge was constructed in 1952 and reconstructed in 1971. It has concrete piers with timber caps, post, stringers, and deck. There are various locations of rot in the timber members. Piers 1, 8, and 19 are spread footings and are scour critical based on calculations. This structure is the only vehicle access to Stretch Island. This structure will need to be replaced in the future.

Hliboki Bridge is a timber structure rebuilt in 1971 consisting of three spans. This structure provides access to residence on Bulb Farm Road. There is core rot in multiple stringers which reduces the overall bridge rating to poor. This structure will need to be replaced in the future.

Chapman Cove Bridge is a timber structure rebuilt in 1968 consisting of six spans. This structure provides access to residence on Agate Loop Road. There is core rot in multiple caps and piling. (plans show the piling are from the previous structure). This structure will need to be replaced in the future.

Harstine Island Bridge was constructed in 1969 on concrete columns and superstructure. There are twelve locations on various columns that have delamination and spalling with reinforcing steel exposed and rusting. We have applied for but failed to secure grant funding. These will need to be repaired in the future.
Harstine Island Bridge pier one scour. Scour has caused rip rap to fail around the approach at pier one. There is a design and permitting is in process to make repairs.

Vance Creek Div Bridge is a 70 ft long precast concrete structure built in 1959. The Vance creek has aggregated over the years and raised the creek bed. Flooding brings large logs down stream striking the upstream girder. This girder has cracks and spalling with exposed steel and cables. We have applied for but failed to secure grant funding to replace the girder. The girder or the whole bridge will need to be replaced in the future.

Boling bridge is an 18 ft long timber structure built in 1971. This structure is on Boling Road the only access for residence. The timber caps on this structure have core rot. Unfortunately, being under 20 ft span this structure is not eligible for federal replacement funds. We have plans to remove the superstructure and caps, then forming new concrete caps and installing a new prefabricated metal superstructure with county forces.

Eich Bridge is a 29 ft long timber structure believed to have been constructed in 1968 although there are no records to validate. This structure is on Eich Road and is the only access for the resident. There are various core rot locations throughout the structure. This structure will need to be replaced in the future.

Crisman Bridge is a 24 ft long timber slab superstructure with concrete piers believed to have been constructed in 1965 although there are no records to validate. This bridge is located on Beeville Loop Road. There is a plan to remove the timber caps and slab and reinstall a prefabricated metal superstructure with county forces.

Portman Bridge is a 16 ft long timber slab superstructure with concrete piers believed to have been constructed in 1954 although there are no records to validate. This bridge is located on Beeville Loop Road. Unfortunately, being under 20 ft span this structure is not eligible for federal replacement funds. There is a plan to remove the timber caps and slab and reinstall a prefabricated metal superstructure with county forces.

Danny Walker Bridge is an 18 ft long timber slab superstructure with concrete piers believed to have been constructed in 1954 although there are no records to validate. This bridge is located

on Beeville Loop Road. Unfortunately, being under 20 ft span this structure is not eligible for federal replacement funds. There is a plan to remove the timber caps and slab and reinstall a prefabricated metal superstructure with county forces.

Tahuya Post Office Bridge is a 20 ft long prestressed concrete girders and concrete piers believed to have been constructed in 1963 although there are no records to validate. The bridge is located on N. Shore Road. We have a photograph dated 1971 showing five feet of clearance between the streambed and the soffit of the girders. After the 2007 storm, aggradation of the Caldervin stream has raised the streambed and reduced the clearance to one ft. Unfortunately, being under 20 ft span this structure is not eligible for federal replacement funds. The plan is to remove the precast girders, extend the concrete piers and reset the girders. This will return the clearance to pre-1971.

Mission Creek 3 (Steelhead) Bridge is a 59 ft long prestressed concrete bridge on steel "H" piling. The bridge is on Steelhead Road and is the only access for the residence. The 2007 storm washed out the pier one road approach. An emergency repair was performed to restore access across the structure. Currently the rip rap repair is failing, and the exposed "H" piling are still exposed and rusting. The plan is to remove the 2007 repair, construct a new concrete pier wall and footing to protect the "H" piling the replace the road approach.

Beeville Peterson Creek 3 is a 15 ft span galvanized corrugated steel pipe on Beeville Road. There are no records of when it was installed. The pipe has extensive rusting below the flow line. This structure will need to be replaced in the future.

Ever's Bridge is a 354 ft multi timber span structure constructed in 1996. The middle span is a timber arch design. The protective coating has deteriorated and allows water intrusion. The arches have section loss and rot throughout the members. We have applied for but failed to secure grant funding to replace the timber arches with steel members.

Rendsland Bridge is a 53 ft multi span cast in place concrete bridge constructed in 1950. The superstructure was replaced in 1973. Rendsland Creek flow of aggregate over time has caused erosion of the concrete pier walls at piers 2 and 3. There is loss of concrete and aggregate but no rust stains. These areas need to be repaired soon.

Cranberry Creek pipe arch is a 25 ft span aluminum box culvert with concrete footings constructed in 1993. The pipe arch carries Mason Lake Road. One foot of the three feet high footings are exposed and are in need of protective countermeasures.

Dayton Box Culverts are two galvanized steel pipe arches making a total of 40 feet span constructed in 1988. The arches carry Shelton Matlock Road. Both structures have extensive rust along the haunches. This structure will need to be replaced in the future.

Skookum Creek Bridge is an 83 ft span prestressed concrete structure built in 2006. Both expansion joints have failed and need replaced. We have applied for but failed to secure grant funding for this repair.

Appendix A

2022– 2023 Mason County Bridge Inventory

Bridge #	Structure ID	Bridge Name	Structure Length	Overall Rating	Scour Rating		Year Built	Date of Last Inspection	Inspection	ADT
1	7996900	HARSTINE ISLAND BR	1466	poor	5		1969	4/2023	24	2155
2	08120600	FINCH CREEK N 1	20	fair	5		1956	4/2023	24	245
3	08192400	GOLDSBOROUGH 2	122	good	3		1956	4/2023	24	1777
4	08619500	EVER'S	354	fair	5		1996	4/2023	24	588
5	08185100	WEAVER CREEK 2	49	fair	U		1966	4/2022	24	73
6	08279900	MARY M. KNIGHT	30	fair	U		1970	4/2022	24	148
7	08369200	CARSLON	31	good	5		1984	4/2022	24	16
8	08404300	WEBBER	145	good	U		1967	4/2022	24	376
9	08438600	KENNEDY CREEK	136	fair	5		1917	4/2022	24	72
10	08601100	CRANBERRY CK PIPE ARCH	25	good	5		1993	4/2022	24	1783
11	08614800	PLUG MILL	53	good	8		1994	4/2022	24	37
12	08619600	HERMANS OLD SCHOOLHOUSE	69	good	U		1996	4/2022	24	627
13	08619700	HERMANS CLOQ CREEK	73	good	U		1996	4/2022	24	627
14	08717700	SATSOP CLOQUALLUM	22	good	8		2000	4/2022	24	132
15	08760400	MCLANE COVE 2008	110	good	8		2008	4/2022	24	835
16	08292200	PURDY CANYON	20	fair	5		1959	5/2022	24	494
17	08600900	CAMBELL CK PIPE ARCH	26	good	5		1993	5/2022	24	3036
18	08709800	GOSNELL CREEK	40	good	5		2003	5/2022	24	36
19	08882900	HUNTER CREEK	137	good	8		2016	5/2022	24	494
20	08493300	7TH & GOLDSBOROUGH	61	good	U		1978	5/2023	24	6000
21	08936000	BEEVILLE PERTERSON CR3	*15	fair	5		1986	5/2023	24	119
22	08935500	BVL PETERSON CR 1	*18	good	8		2007	5/2023	24	119
23	08936100	BVL PERTERSON 2	*20	good	5		2007	5/2023	24	28
24	08934900	ISLAND VIEW RD ARCH	*20	good	5		2008	5/2023	24	89
25	08935400	GVL CRONQUIST	*14	good	5		2005	5/2023	24	2012
26	08935300	GVL TREASURE	*12	good	5		2007	5/2023	24	1364
27	08935200	GVL OKENEK	*8	good	5		2007	5/2023	24	827
28	08935100	GVL MURRY	*18	good	5		2012	5/2023	24	780
29	08935000	GVL MCLANE CR	*12	good	5		2009	5/2023	24	780
30	08230300	L'TE SKOOKUM 1	*23	fair	U		1925	5/2023	24	296
31	08233000	L'TE SKOOKUM 2	*20	fair	U		1925	5/2023	24	296
32	08614700	CLOQUALLUM CREEK	64	good	U		1994	5/2023	24	627

Bridge #	Structure ID	Bridge Name	Structure Length	Overall Rating	Scour Rating		Year Built	Date of Last Inspection	Inspection Frequency	ADT
33	08918500	DEEGAN RD W	22	good	5		2020	6/2022	24	187
34	08239700	LOWER VANCE CR	103	good	5		1963	6/2022	24	494
35	08252600	UP GOLDSBOROUGH	49	good	U		1963	6/2022	24	191
36	08268300	UNION RIVER	65	good	U		1987	6/2022	24	3440
37	08303700	TAHUYA ESTUARY	125	fair	U		1961	6/2022	24	513
38	08312400	LOWER DEWATO CK	55	fair	U		1967	6/2022	24	50
39	08564000	DAYTON BOX CULVERTS	40	good	5		1988	6/2022	24	1777
40	08588400	MISSION CREEK 1	59	good	5		1991	6/2022	24	827
41	08608000	SCHAFER PARK BRIDGE	160	good	3		1993	6/2022	24	376
42	08740400	MALANEY CREEK	*20	good	5		2005	6/2022	24	3844
43	08803800	FINCH CREEK 2-2009	31	good	8		2009	6/2022	24	184
44	08937100	OBH BEAR CR 1	*14	good	5		2000	6/2023	24	4444
45	08937000	BCD BEAR CR 2	*15	good	5		2000	6/2023	24	2644
46	08937300	GVL CASE INLET	*12	good	5		1996	6/2023	24	494
47	08936400	BCD MISSION CR 3.07	*14	good	5		1996	6/2023	24	1993
48	08936200	BECK RD LIL MISSION CR	*20	good	5		2007	6/2023	24	300
49	08935800	BELFAIR TAHUYA 2.85	*17	good	5		1999	6/2023	24	2756
50	08935800	BELFAIR TAHUYA 4.01	*16	good	5		2002	6/2023	24	1308
51	08161500	VANCE CREEK DIV	70	good	U		1959	6/2023	24	494
52	08863400	BLANTON CORNER	*18	good	U		1971	6/2023	24	132
53	08863500	ROCK CREEK	*18	good	5		1952	6/2023	24	897
54	08863600	BOLING RD	*18	fair	U		1971	6/2023	24	36
55	08169100	HLIBOKI BRIDGE	52	poor	U		1961	7/2022	24	62
56	08232300	NO FK GOLDSBOROUGH	40	poor	U		1958	7/2022	24	191
57	08332000	EICH BRIDGE	29	fair	U		1968	7/2022	24	22
58	08823700	RABIT CREEK CULVERT	25	good	8		2010	7/2022	24	32
59	08379000	RAILROAD	125	fair	N		1978	7/2022	24	4134
60	08709700	SCHUMOCHER CR BR	63	fair	8		2002	7/2022	24	490
61	08937400	BV PETERSON CR4 MP 2.05	*18	good	5		2006	7/2023	24	119
62	08369800	CRISMAN	24	fair	U		1954	7/2023	24	86
63	08717800	EICH ROAD 1	29	good	3		2004	7/2023	24	22
64	08169800	CHAPMAN COVE	93	fair	U		1950	7/2023	24	257
65	08108000	ROSSMAIER	60	good	3		1963	7/2023	24	149
66	08132500	UPPER VANCE CR	140	good	8		1986	7/2023	24	110
67	08080600	DECKER CREEK	26	fair	U		1949	7/2023	24	149
68	08938000	HIGHLAND MP 1.47	*17	good	5		2019	7/2023	24	644
69	08938100	SHELTON MATLOCK 13.63	*14	good	5		2002	7/2023	24	1174
70	08938200	SHELTON MATLOCK 13.85	*14	good	5		2002	7/2023	24	1174

71	08259500	RENDSLAND BR	53	fair	U		1950	8/2022	24	526
72	08803700	TOONERVILLE BR	30	poor	5		1995	8/2023	12	1050

Bridge #	Structure ID	Bridge Name	Structure Length	Overall Rating	Scour Rating		Year Built	Date of Last Inspection	Inspection Frequency	ADT
73	08321900	GOLDSBOROUGH 1	100	good	U		1950	8/2022	24	526
74	08340800	MILL CREEK	180	fair	3		1971	8/2022	24	879
75	08799100	SKOOKUM CREEK	83	good	8		2006	8/2022	24	2034
76	08839500	WEAVER CREEK 1 2012	70	good	8		2012	8/2023	24	494
77	08938700	SUNNYSIDE CULVERT	*19	good	5		2023	8/2023	24	100
78	08486200	MISSION CREEK 2	30	good	U		1967	8/2023	24	671
79	08304300	TAHUYA POST OFFICE	*20	good	U		1963	8/2023	24	513
80	08149500	BINGHAM CREEK	78	good	U		1960	8/2023	24	1437
81	08770900	BEAR CREEK/DEWATTO	33	good	8		2008	8/2023	24	79
82	08803900	TAHUYA 2 2009	116	good	5		2009	8/2023	24	2558
83	08857600	PORTMAN	*16	good	U		1954	8/2023	24	86
84	08857700	DANNY WALKER	*18	good	U		1954	8/2023	24	84
85	08857800	ELFENDAHL PASS	38	good	8		2013	8/2023	24	65
86	08588500	MISSION CREEK 3	59	fair	5		1990	8/2023	24	950
87	08928200	SHELTON VALLEY BOX CULV 1	*19	good	5		2021	8/2023	24	60
88	08928300	HIGHLAND DAYTON CREEK BOX	*20	good	5		2021	8/2023	24	644
89	39630293	N. ISLAND DRIVE MP 2.93	*14	good	5		2010	8/2023	24	945
90	71930004	MOUNTAIN VIEW 0.04	*10	good	5		1999	8/2023	24	100
91	70950122	TAHUYA RIVER RD 1.22	*14	good	5		2013	8/2023	24	102
92	75210117	TAHUYA RIVER DR. 1.17	*11	good	5		2005	8/2023	24	646
93	70390348	N. SHORE RD MP 3.48	*18	good	5		2016	8/2023	24	7742
94	08072500	STRETCH ISLAND BR	361	good	U		1973	8/2023	24	385
95	08930300	UNCLE JOHNS UPPER BOX	*18	good	5		2022	9/2022	24	200
96	08930400	GREAT BEND CR BR	22	good	5		2022	9/2022	24	513
97	08930600	CADY CR BOX CULV	*18	good	5		2022	9/2022	24	513
98	08926300	HOMER ADAMS	30	good	5		2021	9/2023	24	50

Note: * - Short Span Bridges

Scour rating code 8 foundation determined to be stable.

Scour rating code 5 foundation determined to be stable for calculations.

Scour rating code 3 means bridge is calculated as scour critical.

Scour rating code U means bridge is scour critical based on unknown foundation depth.

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.

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.

Nonredundant Steel Tension Member —a member in tension or with a tension element whose failure could 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.

Pin-pile—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.

Plan of Action—a detailed plan outlining actions needed to be taken by monitoring crews after a high-water event.

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.

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.

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.

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.