



Informational Update

ID # 1113 – Bridge Inspection Update

Meeting Date November 21, 2022
Department PW - Public Works
Staff Lead John Mortenson, Transportation Engineering Manager

Attachments

- A. Bridge locations Map 2022
- B. Bridge Summary

Purpose

To provide an update on the City's bridge inspectionsⁱ.

Background

The City of Issaquah owns and maintains 24 vehicular and 8 pedestrian bridges. These bridges range from less than 5 years to over 80 years in age and the average bridge age is 27 years. They are an integral part of the City's transportation system. The City contracts with King County to inspect the City's bridges. They are inspected every other year with approximately half the bridges inspected in odd years and the other half are inspected in even years. In addition to the biennial inspections, the City hired a structural engineering consultant to calculate the load rating for emergency vehicles and to complete a detailed analysis of the NW Gilman Bridge over Issaquah Creek.

Update

As of 2022, the Gilman Blvd bridge is the only bridge beyond its expected useful life. All of the City's vehicular bridges are concrete, and concrete bridges have a typical useful life of 75 years. As bridges continue to age and deteriorate, they will need to be replaced or rehabilitated. Since 1996, the City has been actively replacing older bridges primarily with the Federal Bridge Replacement Grant. The detailed analysis of the NW Gilman Bridge over Issaquah Creek identified a concern about the sufficiency of the columns, column-beam connection, and the foundations to resist seismic loads.

The Administration applied and was awarded a \$3.6M federal grant to rehabilitate the Gilman Blvd bridge. The design phase will begin between 2023-2024 and construction will follow in 2025.

Public Works continues to evaluate bridge conditions, prioritizing subsequent work based on the directive from the Federal Highway Administration (FHWA). Following a decision to allow heavier trucks on roadways, the FHWA developed calculations for determining the weight that a bridge can safely carry. Federal, state, and local governments are evaluating publicly owned vehicular bridges using these criteria and formulas to determine whether weight restrictions must be placed on bridges under these requirements.

There are 24 vehicular bridges in the inventory and, as mandated, the city has completed evaluating each of them using current bridge condition information and federal criteria to calculate bridge weight-carrying capacity. As the result of this evaluation, the Gilman Blvd bridge now includes signage for weight limitations and aligns with FHWA requirements. In addition, the Newport Way bridge at Tibbetts Creek and Rainier Blvd bridge were retrofitted to meet the load requirements.

Immediate impacts of the load restrictions on bridges include trucks detouring onto roads less appropriate for heavier truck traffic. Specifically, the emergency responders that may exceed the weight-capacity due to their fire apparatuses. As a result, there is an increased risk for response delays as they are not allowed or unable to utilize the most direct route. With Gilman Blvd being a critical arterial and response route for emergency services, the City's planned capital improvement will enable the weight restriction to be removed from this bridge and more optimal routing to resume.

Overall, the City's bridges are in good condition. Apart from the issues noted above, some of the bridges require more routine repairs and maintenance to address issues such as scouring.

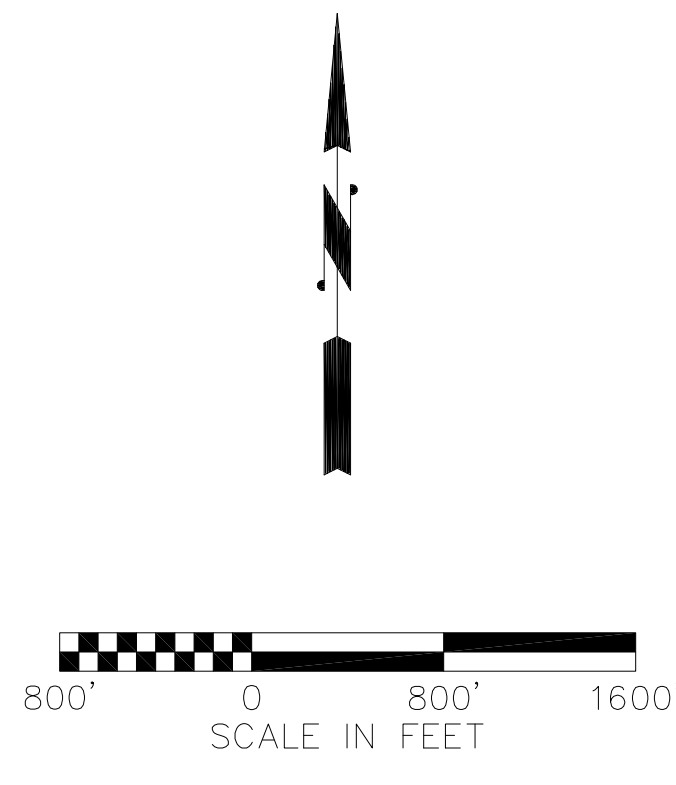
Next Steps

The bridge inventory assessment was received after the 2023-2024 budget had been proposed. Annual bridge inspection and maintenance funding will be needed to continue to monitor and maintain the condition of the City's bridges. The adopted biennial budget includes funds for ongoing assessments but likely does not provide sufficient funding for permitting, routine maintenance and scour remediation activities. Permitting for many of the maintenance activities will require permits that can take over a year to secure. As such, the Public Works Department is currently reviewing whether it has suitable funds to initiate permitting next year so that repair activities could commence the following year and continue over a period of approximately four years to complete.

Staff will request additional funds, if necessary. In addition, the department will continue to apply for grant funding to help supplement the expense for replacement/rehabilitation of the City of Issaquah's aging bridge infrastructure.

ⁱ BRIDGE INSPECTION

The National Bridge Inspection Standards (NBIS), in conformance with the code of federal regulations (CFR) 23 Part 650 Subpart C, mandate that public agencies routinely inspect and report on all publicly owned bridges at least once every two years. Under these standards, the city is required to document condition codes for bridge elements and report the current condition of each bridge to FHWA. Bridges with deficient conditions may require inspection more frequently than the standard 24-month cycle.

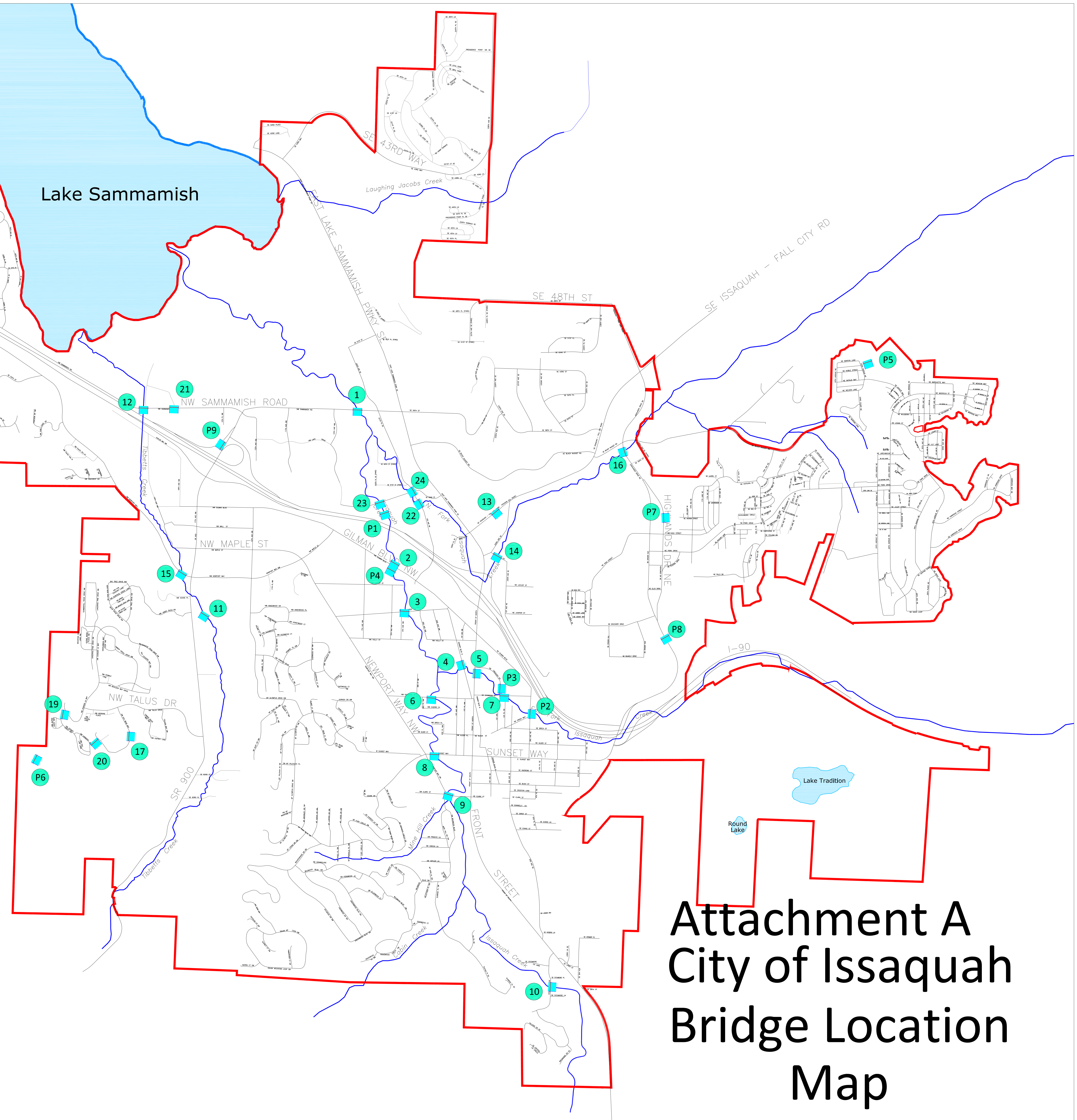


Lake Sammamish

BRIDGE LIST

- | | |
|--------------------------------|-------------------------------|
| 1 NW SAMMAMISH | 13 VAUGHN HILL |
| 2 GILMAN | 14 66TH STREET |
| 3 JUNIPER | 15 NEWPORT WAY TIBBETTS CREEK |
| 4 RAINIER | 16 HIGHLANDS DRIVE |
| 5 FRONT | 17 SHY BEAR |
| 6 NW DOGWOOD | 18 GNG SOUTH |
| 7 NE DOGWOOD | 19 STONEY CREEK |
| 8 SUNSET | 20 TIBBETTS CREEK LANE |
| 9 NEWPORT WAY | 21 KERRY'S CULVERT |
| 10 SYCAMORE | 22 4TH AVE NW |
| 11 TIBBETTS CREEK | 23 SE 62ND ST |
| 12 NW SAMMAMISH TIBBETTS CREEK | 24 SE 62ND ST PED TUNNEL |
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- | |
|---------------------------------|
| P1 PICKERING PEDESTRIAN |
| P2 3RD AVENUE PEDESTRIAN |
| P3 DOGWOOD PEDESTRIAN |
| P4 GILMAN PEDESTRIAN |
| P5 HIGHLANDS PEDESTRIAN |
| P6 WEST FOR TIBBETTS PEDESTRIAN |
| P7 YWCA PEDESTRIAN |
| P8 C DRIVE PEDESTRIAN |
| P9 PED CROSSING OVER I-90 RAMP |

- BRIDGES
- CITY LIMIT



**Attachment A
City of Issaquah
Bridge Location
Map**

Attachment B. Bridge Summary

Bridge #	Bridge Name	Year Built	Structure Type	Length (FT)	Curb - Curb (FT)	Expected Life Span	2022 Age of Structure	Years remaining of	Structural Concern
ISSAQU 02	N.W. GILMAN BRIDGE	1940	Concrete	106	52	75	82	-7	Yes
ISSAQU 10	SYCAMORE BRIDGE	1968	Concrete	62	22	75	54	21	No
ISSAQU 05	FRONT STREET BRIDGE	1970	Concrete	41	44	75	52	23	No
ISSAQU 14	SE 66TH STREET BRIDGE	1973	Concrete	25	34	75	49	26	No
ISSAQU 11	TIBBETTS MANOR BRIDGE	1975	Concrete	22	10	75	47	28	No
ISSAQU 13	VAUGHN HILL	1985	Concrete	37	44	75	37	38	No
ISSAQU 18	185th PL SE	1986	Concrete	43	28	75	36	39	No
ISSAQU 01	N.W. SAMMAMISH BRIDGE	1996	Concrete	150	77	75	26	49	No
ISSAQU 07	N.E. DOGWOOD BRIDGE	1996	Concrete	61	24	75	26	49	No
ISSAQU 08	SUNSET BRIDGE	1996	Concrete	80	26	75	26	49	No
ISSAQU 09	NEWPORT WAY BRIDGE	2000	Concrete	242	44	75	22	53	No
ISSAQU 17	SHYBEAR BRIDGE	2000	Concrete	57	30	75	22	53	No
ISSAQU 12	NW SAMMAMISH TIBBETTS CR	2001	Concrete	40	43	75	21	54	No
ISSAQU 15	NEWPORT WAY TIBBETTS CR	2001	Concrete	31	47	75	21	54	No
ISSAQU 16	HIGHLAND DR BRIDGE	2002	Concrete	110	57.5	75	20	55	No
ISSAQU 04	RAINIER BRIDGE	2004	Concrete	56	30	75	18	57	No
ISSAQU 03	N.W. JUNIPER BRIDGE	2005	Concrete	102	33	75	17	58	No
ISSAQU 19	STONE CREEK	2007	Concrete	44	20	75	15	60	No
ISSAQU 20	TIBBETTS CRK LN BRIDGE	2008	Concrete	63	11	75	14	61	No
ISSAQU 21	KERRYS CULVERT	2008	Concrete	24	43	75	14	61	No
ISSAQU 22	4TH AVE NW BRIDGE	2011	Concrete	43	47	75	11	64	No
ISSAQU 06	N.W. DOGWOOD BRIDGE	2015	Concrete	94	31	75	7	68	No
ISSAQU 23	SE 62ND STREET BRIDGE	2019	Concrete	782	24	75	3	72	No
ISSAQU 24	SE 62ND ST PED TUNNEL	2019	Concrete	18	36	75	3	72	No

PEDESTRIAN BRIDGES

ISSAQUP 01	PICKERING PED BRIDGE	1999	Concrete	116	12	75	23	52	No
ISSAQUP 02	3RD AVE PED BRIDGE	1996	Concrete	36	6	75	26	49	No
ISSAQUP 03	DOGWOOD PED BRIDGE	1996	Concrete	36	6	75	26	49	No
ISSAQUP 04	GILMAN PED BRIDGE	1985	Concrete	90	6	75	37	38	No
ISSAQUP 05	HIGHLANDS PND PED BRIDGE	2005	Aluminum	95	10	75	17	58	No
ISSAQUP 06	W FORK TIBBETTS CRK PED	2006	Concrete	40	6	75	16	59	No
ISSAQUP 07	YWCA PED BRIDGE	2011	Aluminum	293	8	75	11	64	No
ISSAQUP 08	C DRIVE PED BRIDGE	2012	Aluminum	139	8	75	10	65	No
90/62P	PED XING OVER I-90 RAMP	2012	Concrete			75	10	65	No