



INFORMATIONAL MEMORANDUM

TO: **Transportation and Infrastructure Committee**
FROM: **Henry Hash, Public Works Director** *HH*
BY: **Steve Carstens, Senior Program Manager**
CC: **Mayor Allan Ekberg**
DATE: **February 1, 2019**
SUBJECT: **42nd Ave S/Allentown Bridge Replacement**
Project No. 91810404
Bridge Replacement Advisory Committee (BRAC) Grant Applications

ISSUE

Authorize the submittal of a grant application for funding from the Federal Highway Bridge Grant Program to replace the 42nd Ave S Bridge over the Duwamish River, next to the Tukwila Community Center.

BACKGROUND

The Washington State Department of Transportation has issued a Call for Projects to compete for approximately \$75 million of BRAC funding. Tukwila currently has only one bridge which qualifies for funding during this call. The 42nd Ave S/Allentown Bridge is structurally deficient and is eligible for replacement. This project is currently programmed in the City's 6-year Transportation Improvement Program (TIP) and the 2019 Capital Improvement Program (CIP).

DISCUSSION/FISCAL IMPACT

Grant applications are due by April 26, 2019 with results in December 2019. A preliminary cost estimate of approximately \$15 to \$20 million has been prepared for the 42nd Ave S/Allentown Bridge. The Call for Projects indicates that 20% in matching design and construction funds should be assumed for this project and would require \$3 to \$4 million in local City matching funds.

The BRAC grant application assumes the construction start date would be anticipated to begin in 2023.

RECOMMENDATION

Transportation and Infrastructure Committee authorize the submittal of a BRAC grant application for the 42nd Ave S/Allentown Bridge Replacement Project.

ATTACHMENTS

BRAC call for projects
2019 CIP, page 15
42nd Ave S Bridge Structural Assessment - Executive Summary

Call for projects - Federal Highways Bridge Program

Call for projects - OPEN

closes Friday, April 26, 2019

WSDOT is anticipating the availability of approximately \$75 million of Federal Local Bridge program funds for local agency bridge projects. The purpose of the Federal Local Bridge program is to improve the condition of bridges through replacement, rehabilitation, and preventative maintenance. In addition, by incentivizing agencies to use asset management strategies that provide cost-effective solutions to maximize the life expectancy of the structure.

Eligibility Criteria

All local agency bridge owners who currently have a structure greater than 20 feet in length that meets the following criteria are eligible to apply for funding.

Replacement projects involve the total replacement of an existing structure with a new facility constructed in the same general traffic corridor. Rehabilitation projects involve major work required to restore the structural integrity and/or to correct major safety defects of a structure.

This category of projects is focused on local agency bridges that are classified as structurally deficient. Proposals are encouraged to incorporate and/or demonstrate the utilization of practical solutions throughout the life of the structure. This includes identifying the asset management strategies utilized to maximize the life expectancy of the structure. Specific criteria for eligibility and funding are as follows:

- Projects to receive a maximum award amount of \$12 million per structure.
- Only structurally deficient bridges with a sufficiency rating of less than 40 are eligible to apply for replacement funding.
- Only structurally deficient bridges with a sufficiency rating of less than 80 are eligible to apply for rehabilitation funding.
- Projects will require a 20% local match for the preliminary engineering/design and right of way phases. Projects that authorize construction by December 2023 are eligible for 13.5% local match. If construction is authorized after December 2023, 20% local match is required.
- Structures that are considered functionally obsolete will not be considered for funding in these categories.

Preventative maintenance projects involve extending the service life of an existing structure. The primary activities for this category include: steel bridge painting, scour mitigation, seismic retrofit, and deck resurfacing/repair. This includes identifying the asset management strategies utilized to maximize the life expectancy of the structure. A maximum award amount of \$3 million per structure is available. Specific criteria for eligibility and funding are as follows:

- Steel bridge painting for structures that have greater than 2% of total paint area in Condition State 4.
- Scour mitigation for structures that are calculated or assessed as scour critical.
- Seismic retrofit on structures located in higher risk seismic zones.
- Deck resurfacing/repair on structures that have a total area of 2% or greater of patches and spalls in the deck surface (Condition State 2 plus Condition State 3).
- Projects will require a 13.5% local match during the preliminary engineering/design and right of way phases. Projects that authorize construction by December 2023 are eligible for 100% federal funding for eligible costs. If construction is authorized after December 2023, 13.5% local match is required.

Local agency bridge owners will also be allowed to bundle several structures into one project application to perform specific preventative maintenance activities. Specific criteria for eligibility and funding are as follows:

- Deck sealing and thin overlays for concrete decks with full depth cracking.
- Deck repair for timber decks or slabs for elements in Condition State 3 and 4.
- Expansion joint replacement for elements that are in Condition State 3.
- Concrete superstructure/substructure spall repair and patching for concrete elements that are in Condition State 3.
- Timber substructure repair for timber elements that are in Condition State 3 and 4.
- Bundled project applications will have a maximum award amount of \$3 million per application.
- Local agencies are encouraged to partner with adjacent counties or cities.
- Match requirements are the same as those for preventative maintenance as stated above.

Selection Process

Proposals will be reviewed to ensure that they are complete and eligible for funding based on the following:

- Field review assessments with Local Agency Bridge Engineer will consider the following:
 - Replacement/Rehabilitation
 - Proposed structure type
 - Route importance (NHS, functional class, detour)
 - Planning level construction cost estimate
 - Steel bridge painting
 - Existing structure type

- Route importance (NHS, functional class, detour)
- Paint history
- Maintenance (cleaning) history
- Scour mitigation
 - Scour analysis on file
 - Scour history (inspection reports, soundings, countermeasures)
 - Route importance (NHS, functional class, detour)
 - Existing substructure design details
- Seismic retrofit
 - Seismic analysis for the recommended retrofit
 - Route importance (functional class, NHS, detour)
 - Existing substructure design details
- Deck resurfacing/repair
 - Review of deck condition history (Deck Overall code in the last 10 years)
 - Route importance (NHS, functional class, detour)
 - Scope of work: concrete repair with new overlay or full deck replacement
- Local agency bridge program compliance
 - Routine, Fracture Critical, Underwater and Special inspections performed on time
 - Timely release of inspections into the National Bridge Inventory
 - Completed and updated load ratings
 - Load postings
 - FHWA compliance visit findings
- Structures on NHS routes and compliance with MAP-21
- Performance and delivery status of current bridge projects
 - Projects not yet started from previous call for projects
 - Delivery of projects according to project timelines

A proposed list of projects will be presented to the bridge advisory group to evaluate and make recommendations. A prioritized list of projects will be submitted to the WSDOT Local Programs Director by August 2019, who will make final decisions on projects awards. Announcements are expected by October 2019.

Program requirements

Applicants are required to report quarterly on the status and expenditure plan of each project.

Submittal Process

Submittals must be sent by e-mail (paper and CD submittals will not be accepted). Project proposals must be received by midnight **April 26, 2019**.

Project Applications

1. Project applications and supplemental documentation shall be submitted by email to hlpgiants@wsdot.wa.gov.
2. Electronic copies of the following are to be included in the submittal:
 - a. Latest inventory and inspection reports for structures considered for all project applications.
 - b. Latest or newly updated load ratings for replacement or rehabilitation project applications only.
 - c. Electronic photos (640 x 480 pixels minimum .jpg) for all project applications.
 - d. Current bridge scour evaluation and any preliminary hydraulic analysis and supporting documentation for scour mitigation project applications.
 - e. Preliminary seismic evaluation and supporting documentation for seismic retrofit project applications.

Program Contacts

Region Local Program Engineers

or

John Ho at 360-705-7383 or Roman Peralta at 360-705-7870.

CITY OF TUKWILA CAPITAL PROJECT SUMMARY

2019 to 2024

PROJECT: 42nd Ave S Bridge Replacement

Project No. 91810404

DESCRIPTION: Design and construct a replacement structure for the existing 42nd Ave S Bridge near the Tukwila Community Center.

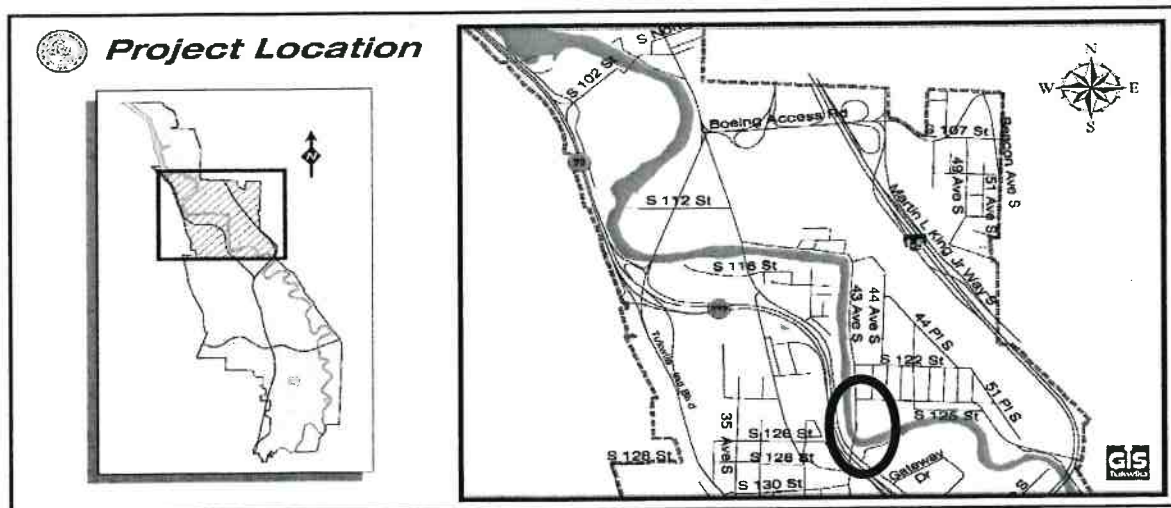
JUSTIFICATION: The current bridge has a sufficiency rating of 7.6 (out of 100), is load restricted for AASHTO Type 3 trucks and is structurally deficient. Truck speed was reduced to 15 mph in 2018.

STATUS: New project for 2019 - 2024 CIP. In 2017, Bridge Replacement Advisory Committee (BRAC) funding was submitted, but not awarded. If there is a BRAC funding round in 2019, staff will apply for those grant funds.

MAINT. IMPACT: New bridge.

COMMENT: BRAC funding would be at 80% match for up to \$12.5 million. Project partners may include BNSF Railroad as they have over 1,800 trips a day on the 42nd Ave S Bridge and it is the only ingress/egress available for their intermodal yard.

FINANCIAL (in \$000's)	Through 2017	Estimated 2018	2019	2020	2021	2022	2023	2024	BEYOND	TOTAL
EXPENSES										
Design				1,600						1,600
Land (R/W)					1,000					1,000
Wetland Mitigation/Monitoring					250	250	250			750
Const. Mgmt.						750	750			1,500
Construction						5,500	5,400			10,900
TOTAL EXPENSES	0	0	0	1,600	1,250	6,500	6,400	0	0	15,750
FUND SOURCES										
Awarded Grant										0
Proposed Grant				1,280	800	5,000	4,920			12,000
Fund Balance-Bond					450	1,500	1,480			3,430
Mitigation										0
City Oper. Revenue	0	0	0	320	0	0	0	0	0	320
TOTAL SOURCES	0	0	0	1,600	1,250	6,500	6,400	0	0	15,750





The City of Tukwila Public Works

August 2017

42nd Avenue South Bridge Structural Assessment

Executive Summary

The 42nd Avenue South Bridge is a 3-span 280-foot-long bridge built in 1949. The bridge is composed of a 220-foot-long fracture critical steel thru-truss main span with 30-foot-long concrete T-beam approach spans at each end. The existing bridge is both Structurally Deficient and Functionally Obsolete.

A three-tier structure assessment has revealed that there are critical structural elements within the 42nd Ave bridge structure that have deteriorated into poor conditions. The examples of these are the short plinth columns at the bridge approaches, truss gusset plates, and main span deck structure.

The bridge is currently nearing the end of its service life and requires strengthening, repainting, deck work, a seismic retrofit, and scour protection, if it were to remain in service. The cost of this work would be prohibitively expensive and would exceed the cost of a new bridge.

The proposed new structure will have the added advantages of being a redundant concrete bridge with very low life cycle maintenance costs to the Bridge Program or to the City of Tukwila.

A cost estimate for the proposed replacement bridge is presented in Appendix C.

Furthermore, it is recommended that until the bridge can be replaced, the interim inspection frequency remains at a six-month interval with special attention being paid to the critical structural elements identified in the structural analysis presented here. A monitoring plan has been developed and will be implemented by the City of Tukwila until bridge funding can be secured and the bridge can be replaced.