Asset Management: Bridge Assessment Annual Report

Bridge Condition Ratings

Bridge Preservation Highlights

- For FY 2011, 95% of WSDOT's bridges are in good or fair condition.
- For FY 2011 WSDOT has added deck codes as part of the performance measure used to classify the condition of bridges.
- A full closure of the existing SR 303 Manette Bridge will begin on July 24 and last four months, to complete the construction of the new bridge.
- The last phase that will complete painting the SR 433 Lewis and Clark Bridge is under way and should be complete in 2013.

WSDOT is responsible for managing state-owned bridges and related structures on state highways. These bridges help freight move through and around the state and allow people to commute to work and to travel safely all across Washington.

Bridge condition update: 95% of WSDOT bridges in good or fair condition

WSDOT uses a performance measure which classifies a bridge as good, fair, or poor using the National Bridge Inspection Standards (NBIS) bridge superstructure, substructure, and deck codes. Previously, WSDOT only used superstructure and substructure codes. For fiscal year (FY) 2011, the deck code was included as part of the performance measure because WSDOT has made improvements in the measurement and consistency of this data and the bridge deck is a primary load-carrying element. Prior to FY 2011, deck area codes were excluded due to data quality issues, which WSDOT has since worked to improve through better tracking.

In order for a deck rating to be classified as "poor," 2% or more of the total bridge deck area must have been temporarily repaired by maintenance crews and/or there is active concrete deterioration. The inclusion of the NBIS deck code in FY 2011 is the main reason the percentage of bridges in the poor condition category increased. Because the criteria WSDOT uses to determine the number of bridges in "Good/Fair/Poor" condition now matches the criteria used by the Federal Highway Administration (FHWA) to classify bridges as structurally deficient (SD), the number of WSDOT bridges rated "poor' is now equal to the number classified as SD.

WSDOT reports on the condition of its bridges to Washington's Office of Financial Management in accordance with reporting standards set by the Governmental Accounting Standards Board (GASB). This measure is consistent with data provided in the Comprehensive Annual Financial Report (CAFR), a detailed presentation of the state's financial condition. The Governor's Government Management Accountability and Performance (GMAP) goal is to maintain 97% of all bridges statewide at a rating of good or satisfactory (fair).

For FY 2011, 86% of WSDOT bridges were in good condition and 9% were in fair condition. In FY 2011, 152 (4.8%) bridges were rated in poor condition. There were 80 bridges (2.5%) classified as poor due to the deck code inspection rating.

Another way to look at the ratings for the bridge network is by deck area verses the number of bridges as shown in the table to the right. Both the number of bridges and the amount and percentage of deck area in "poor" condition has grown since FY 2008.

Bridges in "Poor" condition, by deck area
FY 2008 to FY 2011

Year	Number of bridges	Deck area (SF)	Percentage of deck area in "Poor*" condition
2011	152	4,254,899	9.4%
2010	68	3,821,066	8.5%
2009	78	2,554,872	5.7%
2008	94	2,245,235	5.1%

Data source: WSDOT Bridge and Structures Office.

Bridge structural condition ratings
Condition ratings by fiscal year (based on the number of bridges)

	Description	2006	2007	2008	2009	2010	2011*
Good	A range from no problems to some minor deterioration of structural elements.	88%	88%	88%	89%	90%	**86%**
Fair	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.	9%	9%	9%	8%	8%	**9%**
Percentage of Good + Fair bridges		97%	97%	97%	97%	98%	**95%**
Poor	Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour, or seriously affected primary structural components. Bridges rated in poor condition may have truck weight restrictions.	3%	3%	3%	3%	2%	**5%**

Source: WSDOT Bridge and Structures Office.

* Note: For fiscal year 2011 NBIS deck codes are now included as part of the "good/fair/poor" performance measure, previously only superstructure and substructure codes were included. The addition of deck codes brings WSDOT's "good/fair/poor" into alignment with FHWA's SD metric.

Bridge Inventory

The SR 303 Manette Bridge in Bremerton (see story on page 58).

Inventory increases by eight bridges in FY 2011

The number of vehicular bridges 20 feet or longer has increased from 3,031 to 3,039 since July 2010. This increase is primarily due to new bridges being built within the highway system. WSDOT has 21 ferry terminal locations, but for inspection purposes, 56 structures that carry vehicles and 15 that do not carry vehicles are also included in the inventory. The number of bridges that carry a railroad was reduced by one from the previous year, with the transfer of the responsibility for a bridge on SR 908 to the city of Redmond. The number of pedestrian bridge structures has increased from 67 to 72 with the construction of five new pedestrian bridges in 2010.

The average age of all WSDOT vehicular bridges is 43 years, with 233 bridges that are 75 years old or older. The oldest documented state bridge is the earth-filled concrete arch carrying SR 290 over the Spokane River, built in 1910.

WSDOT inventory of bridges and structures
As of June 30, 2011

	Number	Square feet
Vehicular bridges greater than 20 feet long	3,039	45,011,593
Structures less than 20 feet long	351	n/a
Border bridges maintained by the border state	6	n/a
Culverts greater than 20 feet long	111	n/a
Pedestrian structures	72	326,235
Tunnels and lids	41	n/a
Ferry terminal structures	69	807,220
Buildings (I-5 Convention Center)	1	n/a
Railroad bridges	5	n/a
Totals of all structures*	**3,695**	**46,145,048**

Data source: WSDOT Bridge and Structures Office.
*Note: The total number excludes bridges maintained by border states.

Bridge preservation program aims to maintain a safe bridge network through cost-effective actions

WSDOT's bridge preservation program consists of categories of work that ensure state-owned bridges remain safe and operational. Inspections are performed by trained WSDOT inspectors. Bridge preservation work is normally designed by engineers in the Bridge and Structures Office and then advertised for contractors to bid on and construct. State maintenance crews also complete some types of repairs to preserve the state's bridge network. The goal for this program is "Do the right work on the right bridge at the right time."

Bridge preservation activities include:

- **Inspection** – Perform federally required inspections on state-owned bridges and structures.
- **Asset management** – Identify, prioritize, and plan in order to preserve the bridge and structure network based on review of the inspection data.
- **Replacement and rehabilitation** – Rehabilitate and replace bridges when needed. Repair or replace deteriorated bridge elements such as concrete columns, expansion joints, or anchor cables.
- **Preservation** – Extend bridge service life by repainting steel structures; also repair and overlay concrete bridge decks.
- **Risk reduction** – Proactively address seismic retrofit of bridges and scour repair of bridge piers in rivers.

FHWA reports the amount of structurally deficient deck area in the state has grown 24.1% between 2007 and 2010

The FHWA's national inventory shows Washington has 7,755 total bridges, which includes structures owned by both state and local agencies. In 2010, 394 bridges (9.1% of the total deck area) were classified as structurally deficient (SD). Between 2007 and 2010, the percentage of structurally deficient deck area has increased by 24.1% mainly due to the inclusion of many of WSDOT's largest bridges. Washington's percentage of SD bridge deck area is ranked 23rd highest nationally.

FHWA inventory of structurally deficient (SD) bridges
For Washington, 2007 – 2010

	Number of SD bridges	SD deck area (in square feet)	Percentage of SD deck area
2010	394	6,706,707	9.1%
2009	405	6,202,863	8.5%
2008	422	5,904,672	8.2%
2007	400	5,403,983	7.5%

Data source: WSDOT Bridge and Structures Office, FHWA.

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Bridge Inspections / Bridge Load Ratings

Bridge inspection program helps WSDOT manage bridge assets

Inspecting the state's bridges and structures is vital to ensure public safety, determine the condition of the asset, and to provide a basis to determine future maintenance and preservation needs. The FHWA, WSDOT, and cities and counties, work together to ensure the quality of inspections. Joint agency bridge inspection classes are available each year to train and update bridge inspectors. The FHWA also conducts National Bridge Inspection (NBI) quality assurance inspection reviews of a few local agencies one week each year.

1,500 bridge inspections scheduled for 2011

For 2011, WSDOT has scheduled 1,500 bridges for inspection. Under-bridge inspection trucks (UBIT) will be required on 234 of those inspections. WSDOT will perform 67 inspections for local agency-owned bridges, and has planned 25 underwater dive inspections for bridges and nine for ferry terminal facilities. WSDOT will also inspect 187 sign structures in 2011.

WSDOT schedules inspections to minimize disruptions

Scheduling the appropriate date for each bridge inspection takes planning and coordination; factors considered include traffic windows to minimize disruptions to the public, construction that may be under way on a bridge, or wildlife habitat near the bridge. New FHWA inspection performance measures require a bridge to be inspected very close to its current inspection cycle. For example, a bridge that is on a 24 month cycle must be inspected as close as possible to the day two years from its previous inspection. Bridge inspections that require use of a UBIT in urban areas often must be done during a weekend traffic window from daylight to 10am, so crews may need several closures to complete an inspection. About 20 bridges on state highways are known nesting sites for migratory birds, so WSDOT schedules inspections outside their nesting periods.

Peregrine falcon nesting box under the I-5 Ship Canal bridge.

Bridge load ratings help ensure public safety

A bridge's design takes into account the maximum truck load it can carry when it was built. Engineers perform load rating tests on structures to verify that they can safely carry legal and permitted loads. As bridge structures get older and deteriorate, the maximum truck load rating is re-analyzed based on bridge condition in the field. If results show that the structures are not safe to carry certain loads, WSDOT will reduce the allowable weight of trucks crossing it. In the 2009-11 biennium, the WSDOT Bridge Office performed 114 load ratings and hired consultants to perform an additional 59 for a total of 173.

Total number of bridges with weight restrictions
FY 2011

Load restricted bridges – Trucks must comply with reduced axle weights for a specific bridge.	125
Load posted bridges – The allowable weight of trucks is restricted below typical legal weight limits.	17
Total	**142**

Data source: WSDOT Bridge and Structures Office.

Permitting process for load rated bridges

Legal load weights for roads and bridges are established by the Legislature. Restrictions are placed on the amount of weight that can be carried on a vehicle axle as well as on a group of axles based on the length of the group. WSDOT's list of state bridges with load posting/restrictions is shared with the public through the Commercial Vehicle Services (CVS) program. Permits are required for 'super' loads that exceed legal limits. WSDOT engineers work with CVS to analyze permit requests to ensure that proposed axle configurations and loads are legal, and to verify that structures on the route can carry the anticipated loads before issuing a permit for the load to proceed. The table below details the number of requests received, approved, and denied since 2006.

Truck super load requests
For Washington State Highways, 2006-2010
Trucks over 200,000 lbs and/or 8 tire axles

Year	Total requests	Approved	Denied
2010	985	965	20
2009	1,071	1,014	57
2008	906	832	74
2007	1,212	1,144	68
2006	937	861	76

Data source: WSDOT Bridge and Structures Office.

Bridge Replacement and Rehabilitation

Summary of WSDOT's planned bridge spending
For the 2011 – 2013 biennium

Bridge replacement/rehabilitation	$135 million
Bridge repairs, movable bridges	$21.6 million
Steel bridge painting	$40.3 million
Concrete bridge deck rehabilitation	$14 million
Seismic retrofit	$40.2 million
Scour mitigation	$5.4 million

Data source: WSDOT Bridge and Structures Office.

Replacement and rehabilitation

The bridge preservation program includes funding for the replacement and rehabilitation of selected bridges. To qualify for federal funds for replacement, a bridge must have a sufficiency rating of less than 50 and be classified as structurally deficient (SD) or functionally obsolete (FO). For rehabilitation, the criteria is similar except the sufficiency rating must be less than or equal to 80. (Definitions of SD and FO are available in *Gray Notebook* 34, page 22.)

When prioritizing future replacement candidates, WSDOT mainly considers those bridges with a sufficiency rating less than 50 and classified as SD. As of June 30, 2011, 149 bridges more than 20 feet long are classified as SD, roughly 9.4% of the total inventory of bridges over 20 feet excluding three ferry terminal structures. Nineteen of these bridges have been prioritized for future replacement/rehabilitation based on their truck volumes, structural condition, and any load restrictions in place. The total estimated cost to replace or rehabilitate these 19 bridges is about $193 million.

$135 million to be used to address bridge rehabilitation and replacement in the 11-13 biennium

The funds for this work comes from the 2005 Transportation Partnership Account ($31.1 million), the State Motor Vehicle Account ($1.4 million), and the Federal Bridge Replacement/Rehabilitation Account ($101.6 million). Twenty-six bridges were identified for replacement or rehabilitation as part of the 2005 TPA funding program, including partial funding for the SR 104 Hood Canal bridge. Ten of these bridges and the Hood Canal bridge have been completed to date, with 13 scheduled to be completed or under construction in the 2011-13 biennium. Seven additional bridges included for replacement or rehabilitation this biennium are funded with pre-existing transportation funds.

Three bridge replacement/rehab projects are under contract:

- SR 303 Manette (Bremerton) – $60.6 million
- SR 529 Ebey Slough (Marysville) – $42.3 million
- US 2 Ebey Island Bridge (Everett) – $8.6 million

WSDOT received $21.6 million in the 2011-13 biennium to address bridge repairs and movable bridges

The major repair category of the bridge preservation program includes corrective work that cannot be accomplished within typical maintenance programs and must be done through contracts. This work addresses the specific bridge element in need of repair and is not intended to upgrade all deficiencies to current standards. The most common types of repairs include expansion joint replacement, concrete column repair, floating bridge anchor cable replacement, and mechanical/electrical rehabilitation for movable bridges.

WSDOT develops a prioritized list of repair needs each biennium. Unexpected problems that must be repaired as soon as possible are dealt with through emergency contracts.

There are 100 items on WSDOT's prioritized list of future repairs which are estimated to cost nearly $100 million. With a budget of $20 million per biennium, it will take WSDOT about 10 years to complete all the work on the current list. This list is periodically updated.

WSDOT movable bridges
As of June 30, 2011

Route	Name	Year built	Average daily traffic	Number of marine openings in 2010
12	Wishkah River	1925	15,000	13
12	Heron St	1949	15,000	12
12	Snake River	1939	21,000	2
99	1st Ave S (NB)	1956	40,000	1,078
99	1st Ave S (SB)	1996	40,000	1,078
101	Chehalis R	1955	21,000	102
101	Riverside	1970	15,000	177
101	Simpson Ave	1928	15,000	60
104*	Hood Canal	1979	17,000	335
520**	Evergreen Pt	1963	100,000	5
529	Snohomish R (NB)	1927	16,500	391
529	Snohomish R (SB)	1954	16,500	391
529	Steamboat Sl (NB)	1927	16,000	39
529	Steamboat Sl (NB)	1954	16,000	39
529**	Ebey Slough	1925	15,500	1

Data source: WSDOT Bridge and Structures Office.
* Hood Canal West Half built in 1979 / East Half built in 2009.
** Bridge scheduled to be replaced with a fixed span bridge.

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Bridge Preservation

Steel bridge painting: 94 bridges currently due or past due for painting

WSDOT owns 289 painted steel bridges that require routine painting. WSDOT also shares painting costs for steel bridges on the Oregon and Idaho borders. Protective paint coatings on steel bridge elements are essential to prevent corrosion and extend service life. Bridge painting can be a major project with significant costs due to the complexity of safety, environmental, and containment system requirements. Bridge inspection data is used to determine the condition of the paint coatings on steel bridges. Nearly all of the bridges on WSDOT's future paint list will need full paint removal, requiring the construction of a containment system around the bridge to keep old paint and the abrasive material used to remove it from entering the environment. An emerging issue is how to balance the added weight of the containment system with the need to maintain all the lanes of traffic across the bridge.

There are 94 WSDOT steel bridges either due or past due for painting. WSDOT painted five bridges in 2009 and 2010, and shared the expense of painting the north steel truss spans of the US 101 Astoria Bridge and sections of the SR 433 Lewis and Clark bridge with Oregon. Painting the main truss on the Lewis and Clark bridge (the final phase) was awarded in June 2010 for $33.7 million.

Status of WSDOT steel bridge painting needs

	Number of bridges	Cost to repaint
Past due for painting	28	$139 million
Due for painting	66	$185 million
Not due for painting	195	$373 million

Data source: WSDOT Bridge and Structures Office.

WSDOT has a $40.3 million budget for the 2011-13 biennium to paint steel bridges. The majority of this ($38 million) will be used to repaint two bridges over the Columbia River (SR 433 Lewis and Clark, and US 101 Astoria).

SR 433 – Lewis and Clark Bridge, in Longview. These pictures show the containment for the painting operations on the main steel truss spans. Construction began in 2010 and is scheduled to be complete in 2013.

Bridge deck repair and overlay

WSDOT has been working since the early 1980s on a systematic program to prevent concrete deck deterioration, generally caused by winter salt applications. Maintenance crews usually apply temporary repairs in the form of quick cure patching materials that only have a service life of a few years.

New bridges, built after 1980, are constructed with epoxy-coated rebar that resists corrosion caused by winter de-icing salts. Bridge inspections identify pre-1980 bridges with deteriorated concrete deck areas so WSDOT can rehabilitate them by applying a concrete overlay. The average cost to repair and apply a traditional modified concrete overlay to a bridge deck is $75 a square foot. This is about 25% of the cost to completely replace a bridge deck or 10% of the cost to replace an entire bridge. WSDOT will program a bare concrete deck for repair and overlay when 2% or more of the area is deteriorated or has previous maintenance repairs.

Modified concrete overlays are the primary overlay type used by WSDOT to rehabilitate concrete bridge decks: the first such repair was made in 1979. The overlay process begins by setting up traffic control and closing part or all of the bridge. Next, a hydromilling machine uses high pressure water to remove ½" of the existing concrete and also any deteriorated concrete. Any deep areas are then patched, and the modified concrete overlay is applied and cured. The curing process takes about 42 hours. The average service life of a concrete overlay on bridges is about 25 years. It is very likely that more of these concrete overlays will require replacement in the future.

Bridges with asphalt deck overlay have traditionally been addressed within roadway paving projects. More of these bridges will likely need to be addressed in stand-alone projects since more roadway paving projects are now using bituminous surface treatments (BST) which cannot be used on a bridge deck. Bridge decks require hot mix asphalt (HMA) along with a membrane to provide a smooth ride surface and to protect the rebar in the bridge deck from winter deicing.

WSDOT has prioritized 72 bridge decks for future rehabilitation

For the 2011-13 biennium, the concrete bridge deck rehabilitation budget is $14 million to repair and overlay 15 bridge decks. WSDOT has prioritized 72 bridges that need future deck rehabilitation and overlay at an estimated cost of $149 million.

Bridge Risk Reduction

Seismic retrofit of selected bridges and scour repair of bridge piers in rivers are proactive approaches to minimizing the risk of damage to bridges due to earthquake and flooding.

Seismic retrofit

WSDOT has collaborated with federal, state, and local agencies to prioritize bridges in the Puget Sound region that require a seismic retrofit, using a risk-based approach which incorporates WSDOT's strategic disaster response plan. Bridge engineers perform a seismic analysis of each bridge to determine the exact scope of the retrofit. The most common type of retrofit includes adding steel jackets around the columns and adding more concrete-and-steel reinforcement to the pier caps (also known as a "bolster").

The planned bridge seismic retrofit budget for the 2011-13 biennium is $40.2 million. The total number of bridges suitable for retrofitting increased by 20 in FY 2011 to 900 with the addition of bridges that are supported by hollow core piles.

Bridge seismic retrofit status

	FY 2010	FY 2011
Completely retrofitted*	258	259
Partially retrofitted	139	135
Needs retrofitting	472	490
Under contract	13	16
Total	**880**	**900**

Data source: WSDOT Bridge and Structures Office.
* Note: Excludes retrofit of bridge foundations.

SR 99 Aurora Avenue bridge seismic retrofit under contract

Massana Construction, Inc. was awarded the third and final seismic retrofit contract on the Aurora Avenue bridge for $6.2 million to retrofit the approach span bridge columns, beams, and girders with carbon fiber reinforced polymer. Scale model testing at Washington State University was used to develop the seismic retrofit details.

Design visualization of the Aurora Ave column retrofit.

Scour mitigation

"Scour" is defined as the eroding away of the stream bed material from under bridge foundations. Scour generally happens when a river is experiencing high water flows. Nationally, as in Washington, more bridges have collapsed from the scour of bridge foundations than from any other cause (43 documented WSDOT bridges since 1923).

- More than 1,500 WSDOT bridges and culverts longer than 20 feet in length are over water.
- 318 WSDOT bridges and culverts longer than 20 feet are classified as "scour critical."

The term "scour critical" is used by the FHWA to classify those bridges with a calculated potential scour depth that is lower than the existing bridge foundations. WSDOT has developed a plan of action for each of these bridges. Once funding has been authorized for a repair, it generally takes two to four years to design a scour repair and obtain the environmental permits to complete a scour repair.

The planned bridge scour repair budget for the 2011-13 biennium is $5.4 million.

Bridge damage due to vehicle impacts

Each year a few bridges are significantly damaged from truck impacts, mostly from over-height loads. WSDOT's inspectors and maintenance crews respond on an emergency basis in order to assess the severity of the damage and determine what repairs need to be made. WSDOT has developed criteria to determine if damaged prestress girders are repairable or require replacement.

Bridges requiring significant repair or element replacement are covered by federal emergency relief funds or by bridge preservation funds. WSDOT then seeks reimbursement through the responsible party's insurance company, which in some cases requires litigation.

WSDOT damaged bridges to be repaired by contract
Dollars in thousands

Date of damage	Route	Bridge name	Element damaged	Cost to repair
3/2011	5	113th St UC	PCG	$900
1/2011	16	Olympic Dr	PCG	$1,171
1/2011	395	Court St UC	PCG	$1,001
12/2009	167	24th St UC	PCG	$1,197
12/2009	2	Anderson Cr	Bridge rail	$614

Data source: WSDOT Bridge and Structures Office.
Note: PCG = Prestress Concrete Girder

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Local Agency Bridges

WSDOT, through its Highways and Local Programs division, manages the Federal Aid Highway Bridge program for local agencies. The program follows policy guidance found in federal statute, Washington state legislation, and the Washington Transportation Plan.

Local agencies' bridges are inspected at least once every two years; WSDOT conducts field reviews and provides training and technical assistance for municipalities that must inspect bridges along city streets and county roads. WSDOT and local governments closely follow federal guidelines in their bridge inspection and maintenance procedures.

Local bridge conditions

The Federal Highway Administration (FHWA) requires all states to report annual state, city, and county data concerning the structural condition and adequacy of all bridges statewide. A structurally deficient (SD) bridge is safe as long as all restrictions are obeyed, but may be need of costly repairs or replacement in order to carry current legal loads.

Additionally, following a thorough review, bridges are assigned sufficiency rating number between 0 and 100. The rating takes into account some 75 factors reviewed during an inspection and also considers a bridge's age, length, and width, and the average amount of traffic the bridge handles. **Currently, 95% of Washington's locally owned bridges are considered in good or fair structural condition.**

Structural condition summary of Washington's locally managed bridges
Spring 2011

	County owned		City owned		Total	
	% of bridges	% of deck area	% of bridges	% of deck area	% of bridges	% of deck area
Good	83%	85%	76%	76%	82%	81%
Fair	12%	11%	17%	12%	13%	11%
Poor	4%	4%	7%	12%	5%	8%
Percentage of Good + Fair bridges					**95%**	**92%**

Data source: WSDOT Highways and Local Programs Office.

Top five challenges for locally managed bridges in Washington

- **Age and deterioration –** A number of bridges in the state, constructed before the 1950s and 1960s, need major repair or replacement. Usually built to last 75 years, about 30% of locally owned bridges are more than 50 years old.
- **Congestion –** Some of Washington's bridges have become bottlenecks for both freight and general traffic, particularly at interchanges and major river crossings.
- **Construction costs –** The dollars available for bridges are buying less in the marketplace, as construction costs have risen including the price of steel, asphalt, concrete, and earthwork. Replacing smaller bridges can mean construction of new larger bridges in order to repair impacts to streams and rivers and ensure today's environmental standards are met.
- **Maintaining bridge safety –** Cities and counties face funding shortages which limit their ability to conduct the kind of ongoing preventive maintenance, rehabilitation, seismic strengthening, and replacement that would keep bridges sound indefinitely.
- **Regionally significant bridge replacement needs –** The costs of new bridges and their related intersections prevent many cities and counties from making larger bridge improvements that are needed to address congestion and serve economic growth. High costs for bridges often exceed the available resources.

Detailed conditions of Washington's locally managed bridges

Spring 2011

Condition	Number of bridges	Deck area (Sq. Ft.)	Number of bridges funded	Deck area funded (Sq. Ft.)	Percent of bridges funded	Percent of deck area funded
Sufficiency rating less than 30 and SD	75	589,360	43	304,650	57%	52%
Sufficiency rating less than 50 and SD	154	1,029,890	56	329,230	36%	32%
Sufficiency rating less than 50	275	1,918,750	61	341,600	22%	18%
Sufficiency rating less than 50 and weight restricted or load posted	112	670,790	27	96,920	24%	14%
Weight restricted or load posted	199	947,580	27	96,920	14%	10%
Total inventory	**3,950**	**14,500,000**	**65**	**350,000**	**2%**	**2%**

Data source: WSDOT Highways and Local Programs Office.