



January 1, 2018

The Honorable Steve Hobbs
Washington State Senator
Chair, Senate Transportation Committee

The Honorable Judy Clibborn
Washington State Representative
Chair, House Transportation Committee

Dear Senator Hobbs and Representative Clibborn:

In accordance with the requirement of law, the Washington State County Road Administration Board presents to the legislature this report of the activities of the agency for the year 2017. CRAB staff continues to promote the integration of engineering, information technology, and grants administration among the counties of the state. We believe this report will accurately indicate to you, and to the people of the State of Washington, the effectiveness of that effort.

The Board and its staff remain steadfast in their commitment to achieving your legislative mandates to provide statutory oversight of the state's thirty-nine county road departments, and in so doing, to provide to you the assurance that these counties' operations remain accountable in their stewardship of public assets and public trust.

Respectfully submitted,

A handwritten signature in black ink that reads "Brian D. Stacy".

BRIAN STACY, CHAIR

A handwritten signature in black ink that reads "John M. Koster".

JOHN KOSTER, EXECUTIVE DIRECTOR

County Road Administration Board

<u>CRABoard Members</u>	<u>Term Expires</u>
Chair Brian Stacy, P.E., Pierce County Commissioner	2018
Vice-Chair Rob Coffman, Lincoln County Commissioner	2019
Second Vice-Chair Andrew Woods, P.E., Columbia County Engineer	2020
Kathy Lambert, King County Council Member	2018
Lisa Janicki, Skagit County Commissioner	2018
Bob Koch, Franklin County Commissioner	2019
Mark Storey, P.E., Whitman County Engineer	2019
Al French, Spokane County Commissioner Helen	2020
Price Johnson, Island County Commissioner	2020

County Road Administration Board Staff

Executive Director	John Koster
Executive Assistant Administration	Karen Pendleton Toni Cox, Engineering Technician Rhonda Mayner, Secretary
Deputy Director	Walter Olsen, P.E. Jeff Monsen, P.E., Intergovernmental Policy Manager Randy Hart, P.E., Grant Programs Manager Mike Clark, Road Systems Inventory Manager Derek Pohle, P.E., Compliance & Data Manager Jim Ayres, P.E., Design Systems Engineer Michael Kochick, IT Systems Manager Jim Oyler, Web & Training Strategist Kathy O'Shea, Database Administrator Eric Hagenlock, Chief Applications Architect

Table of Contents

From the Executive Director.....	1
Special Recognitions.....	3-4
Engineering Services	5-6
Information Services	7-9
Grant Programs	10-13
2016/2017 Grant Program Projects	14-23
Tables.....	25
A: County Bridge Data.....	26
County Bridge Condition at a Glance.....	27
B: Actual County Road Related Revenues	28
C: Actual County Road Related Expenditures.....	29
D: Anticipated County Road Fund Revenues	30
E: Anticipated County Road Fund Expenditures.....	31
F: County Road Levy Summary.....	32
G: County Road Mileage	33
H: County Arterial Preservation Program	34
I: County Freight and Goods System	35
J: County Forces Summary.....	36
County Bridges – Critical Local Infrastructure	37-43

From the Executive Director

Upon the recent retirement of long time CRABoard Executive Director Jay Weber I find myself, only three months into the job as new Executive Director, faced with the task of composing the annual report. This agency, unique to any other in the United States, has experienced a number of fairly recent personnel changes and while some of the 'faces' have changed, our charge, given to us by the Legislature in 1965, has not. In fact, it is evident that our role is more important than ever.

The primary purpose for the creation of the CRABoard, as implied by its title, was to encourage and foster the most effective management and/or administration of the various county road departments. It has been the Board's basic philosophy that administrative improvements can be most effectively applied if they are instituted by the counties voluntarily because of the Board's persuasive influence, rather than forcibly because of the Board's statutory power to withhold funds from any county not meeting certain standards. The Board also provides administration of grant funding as well as professional and technical services to the counties.

In order to be effective in our role it is imperative for us to develop relationships and maintain open and honest lines of communication with various state agencies, county and state legislative bodies, and county personnel as policies change and issues arise.

In that vein, as a Road User Charge is potentially considered in lieu of the gas tax, I would be remiss if I failed to remind the Legislature that over the last fifteen plus years there has been a shift from a nearly 50/50 funding partnership between the state and the counties to a greater share of the funding burden being carried by the counties. To that point, the counties' share of fuel taxes in the year 2000 was \$190,549,000 and in 2016 that amount was \$204,526,000 (21.8% of all county road related revenues). During that same period revenue from County road property taxes rose from \$274,709,000 to \$460,730,000 (49% of all county road related revenues). This shift has happened while construction costs have escalated. The Federal Highway Administration reports a 67% increase in construction costs in that time period. The difficulty that counties face in funding both transportation infrastructure to accommodate growth and maintaining existing infrastructure is evidenced in how counties now spend those dollars. In 2000 counties spent \$294,296,000 on construction and \$247,595,000 on maintenance. In 2016 counties spent \$197,082,000 on construction and \$385,587,000 on maintenance, reflecting a large shift of emphasis from county road construction toward maintenance activities, reversing previous spending trends.

The transportation system in this state has been historically constructed and maintained by means of a balanced funding partnership between the state and its counties. It has resulted in a seamless inter-regional system, which is now threatened with fracture at county lines if the burden of funding remains primarily upon the county road property tax. The historic balance of distribution of the statewide fuel tax, to the counties or perhaps a future Road User Charge, with a matching effort by the county property tax must be achieved again. History shows that we can do it; the future of the system is dependent on it. The County Road Administration Board is ready at any time to assist in any way we can to accomplish that goal.

Ernie “King CRAB” Geissler Passed Away

Ernest (Ernie) Geissler, 89, died peacefully Saturday, April 8, 2017 at his home in Olympia surrounded by family, after a long struggle with Parkinson’s disease. He is survived by his wife of 65 years, Bobbi Geissler, his children, grandchildren and one great-grandchild.

Ernie relocated his family from Hoboken, New Jersey to Lewis County, Washington when he accepted the position of Lewis County Engineer. He served Lewis County and WSACE with distinction until 1965 when he was named one of the original engineer members of the newly created County Road Administration Board. It was during this same year that he was appointed CRAB’s first Administrative Engineer, the position which eventually became the Executive Director of CRAB.



During the twenty-five years of Ernie’s tenure at CRAB, he established high levels of credibility and standards of service which still serve as the primary underpinning of CRAB policies and programs. His unflagging advocacy for the counties’ role in surface transportation; his constant efforts to raise the level of professionalism within the county engineering community; and his perspective of counties “as family” brought a cohesiveness and collegiality to county road administration that remain to this day.

Each successive Executive Director of CRAB has benefited enormously from the sure footing upon which Ernie established the direction of CRAB, and all thirty-nine county road departments are better today than they would have been without his wisdom, patience, and example.

He will be truly missed!

CRAB Executive Director Jay Weber Retires

Family, friends, CRABoard members, and staff past and present gathered in Wenatchee on Thursday evening, August 10, 2017, to celebrate with Jay Weber as he announced his retirement effective August 31, 2017. Many of the audience members took advantage of an open microphone opportunity to wish Jay well and to thank him for his 40 plus years of public service to the State of Washington and Douglas County.

Jay was born in Wenatchee in January of 1951 and raised in the Methow Valley and Grand Coulee, where he graduated from high school in 1969. He went on to study a number of subjects at the University of Washington, before graduating with a BA in English in 1974. After college, Jay returned to manage the Weber Brothers Ranch in Mansfield, as he continues to do today.

Jay was elected as Douglas County Commissioner in 1986 and served three terms in that position, until 1997. During his tenure as Commissioner, Jay served as President of the Eastern District of the Washington State Association of Counties (WSAC), and then moved through the chairs to become President of the WSAC in 1994-1995. He served on the County Road Administration Board for nine years and guided the Board as chair from 1989 to 1997. In 1998, Jay was hired as the Executive Director for CRAB and has served with distinction, being awarded the Washington State Association of County Engineers President's Award in 2004 and 2017. Jay drives many miles each week, many of them on the county road system, and he has testified many times before House and Senate Transportation committees concerning the needs of the county road system across the state. He helped formulate the County Arterial Preservation Program and worked tirelessly for the maintenance needs of the county road system. To say that Jay will be missed is a gross understatement of the obvious. He has coached and mentored many of the staff here and his contributions to each of us here at CRAB are immeasurable. Thank you, Jay, for your leadership and dedication to your staff. We wish you a bright future with the time to do the things you have always wanted to do. Congratulations on your retirement.



Engineering Services

As the County Road Administration Board begins its 53rd year as a state regulatory agency, the Engineering Services Division continues to provide a diverse mix of specialists who provide quality training and assistance across a wide spectrum of subject matter.

The primary responsibility of the Engineering Services Division is the maintenance and updating of summary reports, guidance materials, and model documents, and the provision of trainings to County Engineers and their staffs. Through a combination of county visits and CRAB sponsored training held in Olympia and around the state, the Engineering Services Division, under the direction of Deputy Director Walt Olsen, P.E., has brought 600 hours of informative training to the members of Washington State Association of Counties and Washington State Association of County Engineers. The Engineering Services staff is comprised of Compliance and Data Analysis Manager Derek Pohle, P.E.; Intergovernmental Policy Manager Jeff Monsen, P.E.; Grant Programs Manager Randy Hart, P.E.; and Road Systems Inventory Manager Mike Clark, CET; and is directly responsible for the following functions:

- Administration of the Rural Arterial Program, the County Arterial Preservation Program, and the County Ferry Capital Improvement Program
- Maintenance of the County Road Log and the computations and updates to the distribution of the counties' share of the motor vehicle fuel tax
- Management of the reports and other information necessary for recommendations related to the Annual Certificate of Good Practice for each county
- Guidance and research on statutory and regulatory issues affecting county road and public works departments
- Comprehensive and in depth training for County Commissioners and Council Members, County Engineers, and their staff
- Assistance in representation of county engineer interests on a variety of state-level committees and task forces
- Design and traffic engineering assistance to counties, as requested, including consultant selection assistance
- Liaison services on behalf of county engineers with various state agencies, especially the State Auditor's Office and Local Programs Division of WSDOT.

CRAB acts as a clearinghouse for information requests, questions, and the exchange of ideas. With an emphasis on good communication, Engineering Services staff has worked with state transportation officials, resource agencies personnel, and public works departments as they strive to meet the transportation needs of their counties. Much of the Engineering Services division efforts in early 2017 were directed toward the implementation of a new Standard of Good Practice that provides guidance for the use of County Road Fund for Traffic Law Enforcement (Traffic Policing). This subject has received increased scrutiny from the Office of the State Auditor in recent years and has generated much discussion among the engineering and law enforcement communities. A proposed WAC was given a hearing at the October 2015 CRABoard meeting. A decision was deferred until a review committee of law enforcement, CRABoard members and CRAB staff could fully evaluate the effects of the rule. A workgroup of CRABoard members, staff, and law enforcement officials met on January 8, 2016, to discuss the

issues of concern and develop compromise language for the proposed WAC, which was subsequently adopted on April 14, 2016. During the discussion, the Board directed staff to seek an official Attorney General's Opinion regarding the RAP Eligibility of any county that used the diverted road funds for improper purposes. The question drafted for the Attorney General was:

“May any county retain its eligibility to participate in the rural arterial program under the limitations imposed by RCW 36.79.140 and article II, section 40 of the Washington Constitution if the county chooses to divert county road levy property tax for general government purposes, under RCW 36.33.220, to fund (1) civil or criminal traffic prosecutions, (2) court costs of adjudication (3) indigent defense (4) incarceration, and/or (5) coroner activities?”

That opinion was returned to CRAB on March 13, 2017 with the following answer:

“No. Incarceration and coroner activities are not road purposes under article II, section 40. Costs related to prosecution, adjudication, and indigent defense of traffic offenses present a closer question, but it is most likely that these would also not be considered road purposes under the Washington Constitution and RCW 36.79.140.”

With the adoption of the Traffic Law Enforcement Standard of Good Practice, current and future questions will be acted upon and resolved much more quickly and successfully.

Finally, CRAB has provided County Engineers and other county Public Works staff a variety of information resources. One of these information resources is the County Engineers' and Public Works Directors' Desk Reference, which contains guidance on a variety of technical and administrative issues affecting county engineering functions. In addition to providing this Manual as a hardcopy reference document, a major re-design of the Manual was released November 2016, which takes advantage of current internet technology through inclusion of over 1,800 internet “hotlinks” embedded within the document's text. While the revised Manual may contain less written detail on most topics, the total number of topics covered has actually expanded. When the document is open as an electronic file on a computer connected to the internet, the embedded “hotlinks” significantly expand the amount of information immediately available. In order to ensure current information is provided, several updates have been released, including the most recent in October 2017.

CRAB continued the County Engineer/Public Works Director training sessions this year and conducted two 3-day training sessions at the CRAB office, totaling 414 training contact person-hours. This training is constantly being revised to reflect the ever-changing climate of engineering, social, political, and environmental concerns. Another aspect of this training has been developed to allow modules of this training package to be provided directly to a county or gathering of multiple counties at their site, and customized for their specific needs. Two of these customized sessions were conducted during 2017, one in Skamania County and one in Benton County, totaling 182 training contact person-hours. CRAB has also delivered condensed three-hour trainings at WSAC County Leaders Conferences in the past that were well attended by county commissioners and councilmembers, county engineers, and senior staff. Comments were very positive and CRAB looks forward to future opportunities to continue this forum.

Information Services

The Information Services Division at CRAB is a team of IT professionals dedicated to programs and initiatives, both at CRAB and in our counties, which protect and improve the public's investment in our transportation infrastructure.

County Road Administration Board lost the services of Bob Davis, who retired March 31, 2017. Bob was recruited by CRAB and began work as IT Systems Manager on January 24, 2005, coming to us from the Walla Walla County Department of Public Works where he worked for 16 years. Prior to that, he worked many years in construction as a heavy equipment operator. At Walla Walla County, he began his public service career working on the road maintenance crew and after a few years, he transferred into the Engineering office as an Engineer Tech I – Legal. Throughout the next 11 years, he was assigned greater responsibilities and tasks, excelling in each position, until he was promoted to an Engineer Tech IV position. Bob developed a number of applications during his time in Walla Walla that automated processes previously done on paper forms. VisRate, a pavement management distress data collection tool is an application that was so useful, Bob donated the programming code to CRAB's development team for further development and added enhancements. It is now distributed freely to all 39 Washington County Public Works Departments. As CRAB's IT Systems Manager, Bob is proud of his numerous accomplishments and he earned many IT and public service certifications and continued his online study and education in IT Management. We wish him a bright future with the time to do the things you have always wanted to do. Congratulations on your retirement.

Michael Kochick, formerly of Intercity Transit and Ulterra Drilling, came to the staff on February 6, 2017 and assumed the primary duties of computer network security and systems administration. Michael has 22 years experience in the IT field and holds a Master's Degree in Software Security and Assurance from WGU in addition to seven industry certifications for Cyber Security and Networking.

Three primary goals of the IT team are the continued smooth and efficient operation of this agency; ensuring that Washington's counties continue to effectively apply current and emerging technology; and assisting our counties in their compliance with the WAC rules of this agency. The first goal is accomplished by providing a progressive, stable, and secure computing environment for agency staff. The second and third goals are accomplished by developing and providing software, training, and support and consulting services specific to the needs of county road departments in Washington State. CRAB IT products and systems leverage latest technologies such as virtualization, cloud computing, remote desktop services, web services, and text-to-speech to enhance the computing experience of the staff of this agency and our counties.

CRAB has begun the process to replace its flagship product, **Mobility**®, with a commercial-off-the-shelf (COTS) enterprise asset management system. The major objectives of this project are to add geospatial data to the linear referencing system (LRS) used in **Mobility**®, add mobile data collection capabilities, and integrate efficiently with information systems outside of CRAB.

The decision to use COTS instead of the long practiced in-house development was born from the desire to continue to offer state-of-the-art software applications with minimal increase to the IT budget and to keep pace with the rapidly advancing need of county staff to have systems capable of managing the approximately \$900 million spent on county roads annually.

Great care is being taken in selecting a product that will maintain the level of service and features that have become expected of *Mobility*© while meeting our objectives. To assist in defining the scope and requirements for this project, CRAB has formed a steering committee of 17 counties, 3 state agencies, and various other stakeholders, such as the FHWA and WSACE. This committee has convened twice in the last four months, during which a scope statement was developed.



CRAB is targeting the transition from *Mobility*© to occur in 2021. Over the next three years, CRAB will develop a sustainable budget, work with vendors to configure the COTS system to meet county needs, develop the migration routine from *Mobility*© to the new system, accomplish the necessary train-the-trainer between the vendor and CRAB staff, and train the 39 counties.

In 2017, the Information Services team again made significant, unique, and creative contributions to the initiatives of CRAB staff and management efforts of Washington counties. The following paragraphs illustrate some of the benefits and efficiencies provided by CRAB Information Services this past year. Both the on-site classroom and the mobile training labs were restructured with new workstations, laptops, and an 85” LED television that produced clearer results than the previously used projector. Automated scripts were created to reduce the custom setup time from 2 hours to 15 minutes per machine and reduce human errors during system configuration. These improvements reduced training system errors by 95% and improved class efficiencies by 30%.

CRAB’s system security is always a priority. This year the IT group implemented network monitoring and automated patch management to provide reporting for the better management of system security, and allow the IT staff to be proactive in case of issues. CRAB’s digital security was enhanced with rules that restricted all traffic from outside the U.S. to all CRAB services including email and *Mobility*’s© remote access. This resulted in a reduced attack surface and a major reduction in the number of attacks made against the systems.

CRAB’s infrastructure also received major changes this year with the implementation of a Storage Array (SAN) that increased data access speeds, availability, and reduced hardware failures. This supported the virtualization of 98% of the network servers and reduced the physical machines in the server room from 11 to three. This solution has resulted in reducing CRAB’s electrical and cooling consumption monthly and a savings of approximately \$80,000.00 every four years during the server replacement cycle. The virtualization of CRAB’s infrastructure has increased the ability to provide non-interrupted service by introducing an automated failover method that will mitigate any hardware failure that might occur. To protect the changes

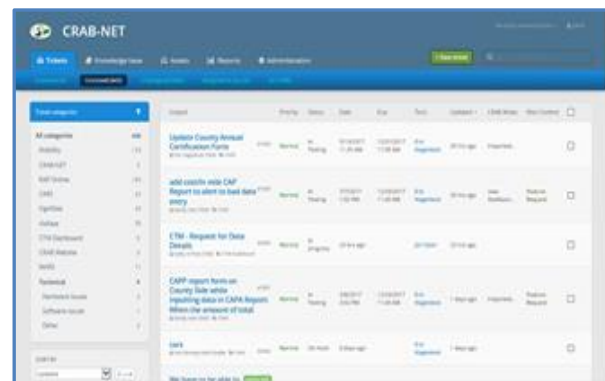
made to the infrastructure, a new Disaster Recovery Solution was implemented that backs-up the CRAB infrastructure in under an hour, and allows the restoration of a failed system in under 15 minutes. This system has reduced backup times by over 4000% and provides the ability for monthly automated testing of each backup to validate the integrity of them, providing confidence that they will be reliable when needed.

In August 2016, CRAB applied for a waiver from Technology Policy 184, which requires CRAB to move its server infrastructure to the State Data Center. The waiver was denied based on legislation within RCW 43.105.375 and CRAB was given until July 2018 to come up with a migration plan, with a final physical move date of July 2019. CRAB's IT Department has designed a 3-phase plan to accomplish this task.

In the last five months, the IT Department has been working on implementing a new disaster recovery system to increase our survivability in the event of an emergency. Phase 3 is the implementation of a redundant site. This allows CRAB's Server Infrastructure to be located in the WaTech Data Center and replicate all services between the data center and CRAB's main office, providing the ability to failover to either site for increased survivability. This phase will take us through 2019 to complete.

A new application, CRAB-NET, has replaced the user feedback program for CRAB-supported software. CRAB-NET has many features that assist the CRAB IT team with county support as well as improve communication within the agency. Two frequently used components are the Ticketing module and the Knowledge Base module.

County users and CRAB Staff can easily create a new feedback ticket for a variety of reasons, from a request for a software feature upgrade, to a 'bug' report or an immediate need for assistance. By customizing this tool, CRAB Staff has the ability to determine where the ticket is in its lifespan, from 'new' to 'in progress' to 'resolved', and create reports regarding tickets and customer support. This module has proven to improve communication between the agency and our customers.



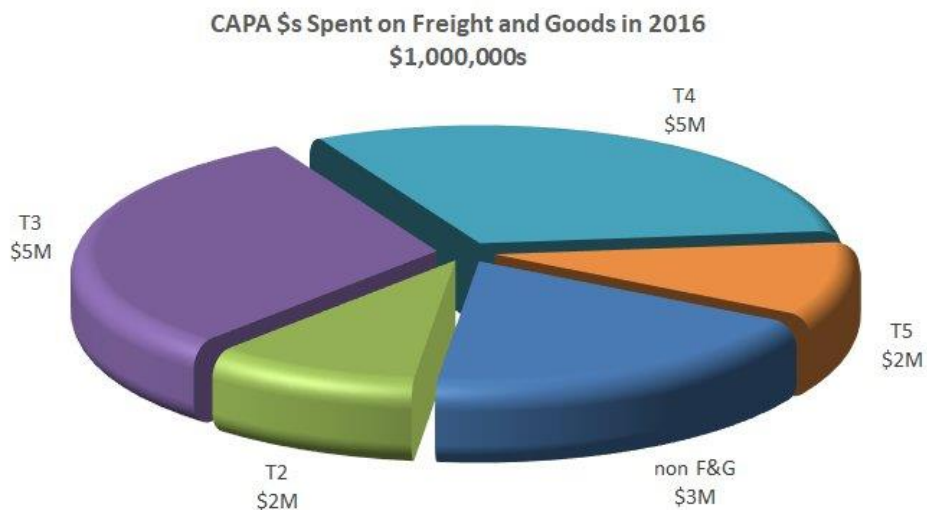
The CRAB-NET Knowledge Base permits articles to be submitted by CRAB Staff. The topics currently in the 34 Knowledge Base articles range from creating or accessing a CRAB-NET account to model documents to repeating tasks and procedures. The Knowledge Base provides a central location for data, instructions, and information that may not have been previously readily accessible. CRAB has found that the Knowledge Base promotes cross training and increases communication within the agency as well as with County users.

Grant Programs

The County Road Administration Board managed two road-funding programs, The **County Arterial Preservation Program** and the **Rural Arterial Program** in 2016, helping Washington State counties maintain and improve the conditions of their arterial roads. The counties used \$38 million of these funds for road, bridge and drainage improvements where they were most needed. CAPP funds are distributed directly to counties each month after fuel tax revenue is deposited, allowing them to give continuous attention to their ongoing pavement preservation needs. RAP funds, however, are awarded to specific projects based on competitive rating criteria within each of the five RAP regions. RAP funding requires significant program and budgeting management by CRAB as it oversees project application, priority ranking, funding allocation and spending of Rural Arterial Trust Account (RATA) funds over a two-year biennial cycle.

County Arterial Preservation Program (CAPP)

Washington State counties used \$17 million in County Arterial Preservation Account (CAPA) funds in 2016 to do pavement preservation work. This amount was approximately 37% of the overall statewide cost borne by the counties to do all pavement preservation that was needed. As CAPA funds can only be applied on paved arterial roads, the counties regularly monitor their surface/structural condition to determine which roads have the greatest needs. As the chart below demonstrates, 80% of the CAPP funds spent in 2016 were applied to county Freight and Goods routes. Making sure the surfaces of truck routes are repaired regularly prevents major failures that would be much more expensive to repair later on.



Freight and Goods Routes Tonnage Designations:

T-2 4 million to 10 million tons per year

T-3 300,000 to 4 million tons per year

T-4 100,000 to 300,000 tons per year

T-5 at least 20,000 tons in 60 days and less than 100,000 tons per year

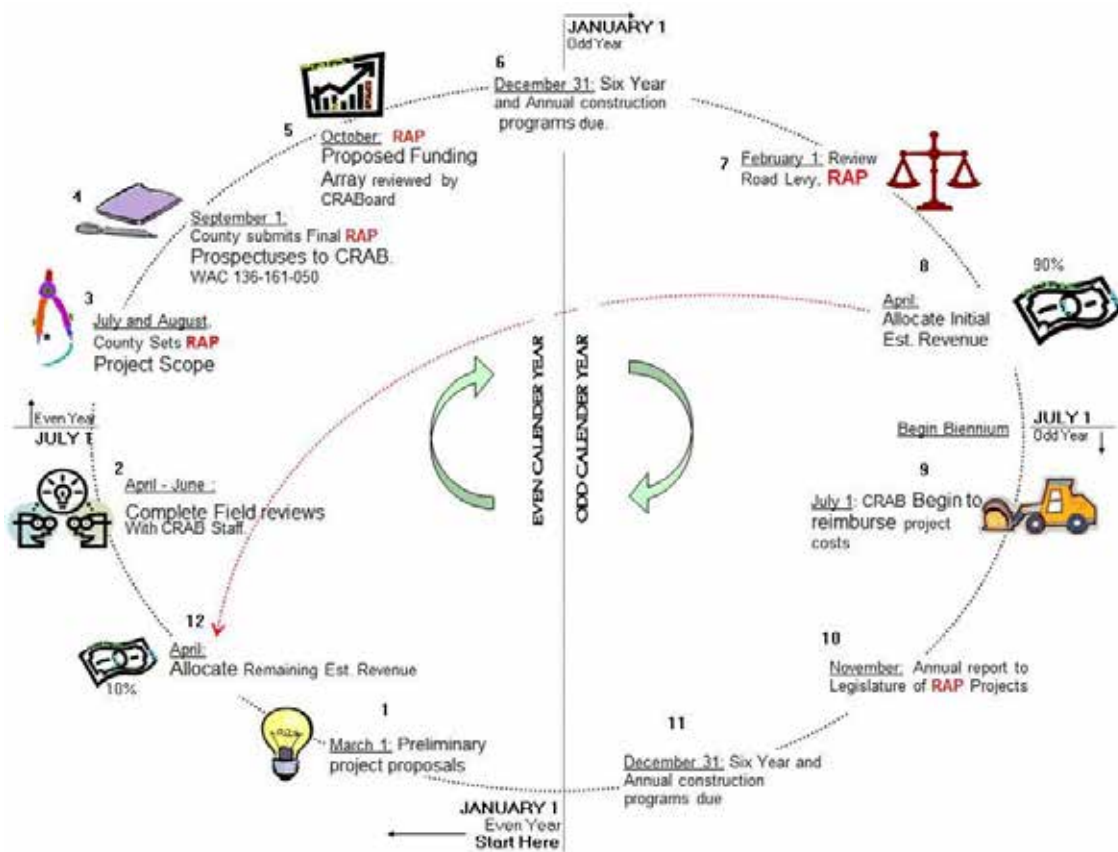
Rural Arterial Program (RAP)

Some county arterial roads suffer from aggressive types of failure due to heavy trucks and increased traffic volumes when there is local growth in industry and population. These roads may require a more comprehensive approach to improvement than pavement preservation, especially when they also have width, alignment and safety problems. Fortunately, the Rural Arterial Program provides funding to help counties address issues (RAP - [RCW 36.79.080](#)). The counties used \$21 million of these funds in 2016 (see table C) to improve haul and traffic capacity, and safety.

RURAL ARTERIAL PROGRAM EXPENDITURES BY COUNTY AND LEGISLATIVE DISTRICT IN 2016

COUNTY	LEG DIST	RATA \$'s RECEIVED	COUNTY	LEG DIST	RATA \$'s RECEIVED
Adams	9	702,730	Lincoln	7	121,586
Asotin	9	127,346	Lincoln	13	256,568
Benton	16	1,660,905	Mason	35	134,829
Chelan	4	46,572	Okanogan	7	20,007
Chelan	12	64,346	Okanogan	12	73,834
Clallam	24	101,218	Pacific	19	136,738
Clark	18	220,934	Pend Oreille	7	13,508
Columbia	16	917,862	Pierce	26	50,057
Cowlitz	19	612,034	Pierce	31	2,035,369
Cowlitz	20	14,963	San Juan	40	385,410
Douglas	12	2,254,993	Skagit	39	1,257
Ferry	7	110,026	Skagit	40	77,761
Garfield	9	1,338,378	Skamania	14	211,854
Grays Harbor	19	14,732	Snohomish	39	317,710
Island	10	332,858	Spokane	4	695,322
Jefferson	24	1,355	Stevens	7	2,564,823
King	45	2,942,669	Thurston	2	2,272
Kitsap	35	405,627	Wahkiakum	19	122,350
Kittitas	13	1,111,357	Walla Walla	16	58,877
Klickitat	14	9,996	Whitman	9	36,967
Klickitat	15	805,174	Yakima	14	53,272
Lewis	20	66,910	Yakima	15	3,000
					21,236,353

RURAL ARTERIAL PROGRAM BIENNIUM CYCLE



History of RATA Funds per County:

<u>REGION</u>	<u>COUNTY</u>	<u>TOTAL RATA</u> <u>APPROVED</u>	<u>TOTAL RATA</u> <u>SPENT</u>	<u>%</u> <u>SPENT</u>	<u>MILES</u> <u>BUILT</u>
	NE Adams	21,627,284	18,432,433	85%	100
	NE Chelan	27,387,900	20,793,684	76%	53
	NE Douglas	28,142,035	24,145,066	86%	56
	NE Ferry	23,107,209	15,569,083	67%	65
	NE Grant	31,077,068	25,214,571	81%	174
	NE Lincoln	27,203,720	22,273,233	82%	113
	NE Okanogan	22,344,244	15,958,162	71%	54
	NE Pend Oreille	16,777,378	12,941,230	77%	80
	NE Spokane	34,966,191	21,129,264	60%	51
	NE Stevens	29,038,885	26,578,838	92%	118
	NE Whitman	29,470,512	21,101,812	72%	100
NE REGION TOTALS		\$ 291,142,426	\$ 224,137,377		964
	NW Clallam	10,810,576	8,832,379	82%	15
	NW Island	15,351,700	11,504,063	75%	20
	NW Jefferson	6,499,840	5,336,212	82%	11
	NW Kitsap	13,026,520	9,995,908	77%	29
	NW San Juan	8,520,008	6,654,724	78%	19
	NW Skagit	10,145,433	6,076,502	60%	21
	NW Whatcom	12,775,912	11,872,001	93%	38
NW REGION TOTALS		\$ 77,129,989	\$ 60,271,789		154
	PS King	15,334,725	13,921,206	91%	26
	PS Pierce	16,723,566	13,937,237	83%	22
	PS Snohomish	15,494,691	12,405,130	80%	20
PS REGION TOTALS		\$ 47,552,982	\$ 40,263,572		68
	SE Asotin	15,128,911	10,258,089	68%	27
	SE Benton	20,422,553	16,278,077	80%	53
	SE Columbia	15,612,671	10,958,507	70%	39
	SE Franklin	14,348,886	12,460,221	87%	43
	SE Garfield	14,797,743	13,281,083	90%	45
	SE Kittitas	15,638,650	14,396,238	92%	33
	SE Klickitat	21,816,853	18,084,554	83%	84
	SE Walla Walla	19,069,590	15,890,160	83%	37
	SE Yakima	24,887,791	18,515,464	74%	50
SE REGION TOTALS		\$ 161,723,648	\$ 130,122,392		410
	SW Clark	12,168,418	9,693,627	80%	16
	SW Cowlitz	14,478,406	12,048,754	83%	28
	SW Grays Harbor	15,623,668	13,422,501	86%	20
	SW Lewis	11,140,905	8,355,111	75%	25
	SW Mason	12,880,425	10,095,274	78%	37
	SW Pacific	12,335,933	9,811,100	80%	55
	SW Skamania	2,675,868	2,580,927	96%	14
	SW Thurston	16,129,268	12,180,330	76%	32
	SW Wahkiakum	8,291,126	4,781,890	58%	38
SW REGION TOTALS		\$ 105,724,017	\$ 82,969,515		264
STATEWIDE TOTAL		\$ 683,273,062	\$ 537,764,644	79%	1,859

2016/2017 Grant Program Projects

Yakima County – Yakima Valley Highway

This section of Yakima Valley was originally part of the Inland Empire Highway #85 which subsequently was renamed SR 410. After completion of Interstate 82 in the 1980's, the State Route was transferred to Yakima County. This road currently serves as an important Farm to Processing Collector road that serves local agricultural transportation, but also a high volume of passenger traffic between population centers and distributed worksites.

The original highway was constructed as a 20-foot wide Portland Cement Concrete Pavement. Over the years, the road was widened and overlaid with asphalt concrete pavement. Because of reflective cracking due to faulting of the concrete pavement, coupled with poor drainage, the pavement condition had deteriorated severely, and needed to be completely reconstructed.



Reconstruction consisted of removal of the asphalt concrete pavement, cracking and seating of the cement concrete pavement, drainage improvements, construction of a new bridge over an irrigation wasteway, minor widening and horizontal curve flattening. The structural section consisted of .75 foot of Crushed Surfacing Base Course and .5 foot of HMA in the traveled lanes.

Contractors: Columbia Asphalt & Gravel, Inc. & Anchor Construction Contractors, LLC

Cost: \$4,746,403

RAP: \$2,448,000

County: \$2,298,403

Douglas County - Coulee Meadows/Moses Coulee Road

This road is designated as a major collector and provides a regionally important connection between farm areas on the Columbia Plateau and agricultural transportation and storage facilities along the Columbia River.



Use by heavy agricultural vehicles caused recent road closures due to freeze thaw conditions and accelerated deterioration of the asphalt surface.

The latest improvement project completed a 3.5 mile segment of a larger 12 mile stretch that runs from State Route# 2 to the Grant County Line. It is connected to two RAP projects completed in the last four years.

The contract emphasized replacing the failing surface with 2.5 inches of HMA over 12 inches of crushed surfacing. The road was also widened from 24' to 28'. Clear zone obstructions were removed and side slopes were flattened to meet recovery requirements, which included adjustments and upgrades to drainage features.

The project provided users the long-term benefits of reliable and safer farm-to-market and commuter travel. The county will also benefit from major savings in annual maintenance cost.



Contractor: Selland Construction

Cost: \$2,646,256
RAP: \$2,322,900
County: \$323,356

Stevens County - Aladdin Road

The Aladdin Road has been a vital connector relaying log trucks, recreationists and local commuters from the northern region of Stevens County to Colville (the county seat) and beyond.



Due to the above traffic impacts, the road showed that it lacked an adequate base, was narrow, had substandard vertical and horizontal curves and needed safety improvements along the roadside.



The foundation of the road was strengthened by mixing cement-treated base into the subgrade to prepare for improved surfacing. The road was widened from 24 feet to 28 feet and the vertical alignment was improved to safety standards. Guardrail was added where needed.

Contractor: Knife River Corporation

Cost: \$3,083,940

RAP: \$2,025,100

County: \$1,058,840

Lincoln County - Duck Lake 2R

The Duck Lake Road serves as a significant farm to market and commercial freight and goods route in Central Lincoln County. It is also used by tourists who come to enjoy local community events and access public federal and state recreational lands. School buses, mail carriers and emergency service vehicles rely on this road continuously.



Although the horizontal and vertical alignment met today's design standards and the road base was holding up well, the roadway surface was deteriorating rapidly. The existing BST surface was aged and failing rapidly due to heavy agricultural and commercial traffic. The road had some edge cracking, longitudinal and transverse cracking, and wheel rutting as the primary deficiencies contributing to the pavement deterioration.

The improvements funded by RAP and County funds provided crack sealing and pre-leveling to restore the road profile and crown. A 0.20' asphalt overlay was then paved over fabric-reinforced geotextile and a construction seal was placed on the overlay.



The side slopes were flattened where needed for safety. Approximately 1,650 feet of guardrail was installed in the areas that didn't get slope flattening. Incidental items included pavement markings, culvert extensions and guide posts.

Contractor: Central Washington Asphalt

Cost:	\$1,413,279
RAP:	\$750,000
County:	\$30,582
Federal	\$632,697

Jefferson County – Paradise Bay 2

Paradise Bay Road is a two-lane rural minor collector road used by residents, recreationists, and small businesses located in Port Ludlow. The road connects Oak Bay Road to SR 104 and the Hood Canal Bridge. This 1.16 mile long project continued the Phase I work Jefferson County Public Works completed with RAP funding in 2004.



Pavement condition and ride quality were severely deteriorated on this section of Paradise Bay Road. The asphalt pavement surface was badly rutted and several segments were repeatedly being dug-out and repaired by county maintenance crews due to poor subgrade materials. The existing gravel shoulders were rough and had insufficient width for non-motorized vehicles. One crest vertical curve had insufficient sight distance for vehicles exiting from the adjacent Edgewood Drive intersection. The existing guardrail was sub-standard and was lacking in several segments with high fills and steep slopes.

Road segments with failing subgrade were excavated and replaced with good structural material. Both shoulders were reconstructed to 4 feet wide and the roadway ditches built to 1.5 feet deep. The crest vertical curve profile was lowered to improve the sight distance and a short right turn pocket was constructed to provide for safer entry into Edgewood Drive. Several drainage culverts were relocated and replaced. Both lanes of the existing asphalt pavement were milled to a depth of 1" and HMA was placed to a depth of 3.25". The new 4' wide shoulders were also paved with HMA. 2,087 feet of new guardrail and terminals were installed. This provided a safer driving experience for motorized and non-motorized users. Multiple letters have been received from local residents expressing their appreciation for the completed work.



Contractor: Lakeside Industries, Inc.

Cost: \$1,505,220

RAP: \$1,354,698

County: \$150,522

Kittitas County - No. 6 Road

No. 6 Road is the main access to I-82 for several county residents and it is also heavily used for farming, and other agricultural activities generated from adjacent properties.



The road suffered a number of deficiencies including being too narrow for trucks and passenger vehicles to share it safely. Roadside safety issues were obvious, and the pavement itself was failing. This segment was the last one needing these improvements since other adjacent segments had been improved with RAP funding in recent years.

The road was widened to 28 feet, comprised of 11-foot lanes and 3-foot shoulders. The existing surface was paved with hot mix asphalt and roadside hazards were removed or otherwise mitigated.

Contractor: Columbia Asphalt and Gravel

Cost: \$1,366,756

RAP: \$1,230,081

County: \$136,675

Clark County - NW Carty Road

NW Carty Road is a Rural Major Collector running east – west and connecting to SR502 and I-5. The road is a major bus route for the Ridgefield School District. With the improvements made to the culvert and roadway just west of I-5, NW Carty now provides better service to businesses, schools and local residents.



The old culvert was originally a 12-foot round corrugated metal pipe (CMP) which had buckled in several locations, and partially collapsed. The upstream section of the culvert had longitudinal cracks on the left and right sides of the bottom of the structure. The roadway embankment was sloughing off into the stream, and severe scour had occurred on the south side of the roadway, creating deep voids in the embankment. The unstable ground movement was visible on the upper portion of the roadway.



Also, the pavement on NW Carty Road lacked strength, requiring an asphalt overlay. The project significantly improved public safety. It was completed and opened prior to impacting the school bus routes, with upgrades to safety features within the project limits.

The county has received positive feedback from local residents who are happy with these improvements.

Contractor: Thompson Bros Excavating

Cost: \$2,166,949
RAP: \$275,000
County: \$591,949
Federal: \$1,300,000



Ferry County – Bridge Creek 12

This project is one of the final segments to complete this 30 plus mile east – west route which bisects the southern portion of Ferry County. This route is one of two continuous routes (the other is SR 20, 30 miles to the north) providing truck access across the mountains of the county.



General pavement failure and lack of adequate safety features required construction of a cement treated base and hot mix asphalt surfacing. Several locations on this 2.5-mile project needed guardrail to improve safety.

Contract work included preliminary and construction engineering, pulverizing the existing pavement, widening, and applying cement-treated base and asphalt pavement. Construction seal and pavement markings were installed by county crews.

Local residents, tourists, loggers and farmers are now enjoying a stronger, safer road as a result of the latest RAP funded improvements.

Contractor: Knife River Corporation

Cost: \$1,545,855
RAP: \$1,391,356
County: \$154,498

Cowlitz County – Hazel Dell Road

Hazel Dell Road is a rural major collector serving areas north of the Kelso-Longview area. This road has, from time to time, been a detour route for SR 411.



The existing roadway had 11-foot wide travel lanes with little or no shoulder, deficient sight distance at horizontal and vertical curves and a poorly aligned intersection with SR 411.



A mile of roadway was widened, the clear zone was improved and the intersection with SR 411 was realigned. One of the residents along the route expressed their satisfaction with the intersection realignment which allows them to turn north toward Castle Rock or come back to their home without fear of a crash.

Contractors: Nutter Corp. Tapani, Inc.

Cost: \$5,385,659
RAP: \$1,000,000
County: \$2,099,309
Federal: \$2,286,350

Thurston County – Delphi Road

Delphi Road is classified as a major collector and provides access from the southwest county to SR 101 and Olympia urban areas as well as access to recreational facilities in the state Capitol Forest.

The lack of adequate shoulders had created a safety concern for motorized and non-motorized users. A sharp 30 mph curve also reduced safety on the existing alignment.



This project reconstructed the roadway, widening to provide 11-foot travel lanes and 5 foot paved shoulders. The horizontal alignment was adjusted to allow full design speed throughout. Stormwater improvements were also constructed.

Contractor: Active Construction Inc.

Cost: \$1,646,296

RAP: \$886,500

County: \$759,796

Tables

A: County Bridge Data	26
County Bridge Condition at a Glance.....	27
B: Actual County Road Related Revenues.....	28
C: Actual County Road Related Expenditures	29
D: Anticipated County Road Fund Revenues.....	30
E: Anticipated County Road Fund Expenditures.....	31
F: County Road Levy Summary	32
G: County Road Mileage.....	33
H: County Arterial Preservation Program	34
I: County Freight and Goods System	35
J: County Forces Summary	36

Table A

COUNTY BRIDGE DATA - NOVEMBER 2017

Washington State Bridge Inventory System

Bridges 20 Feet or Greater in Length on Federal Aid (FAR) and Non Federal Aid (NFAR) Routes

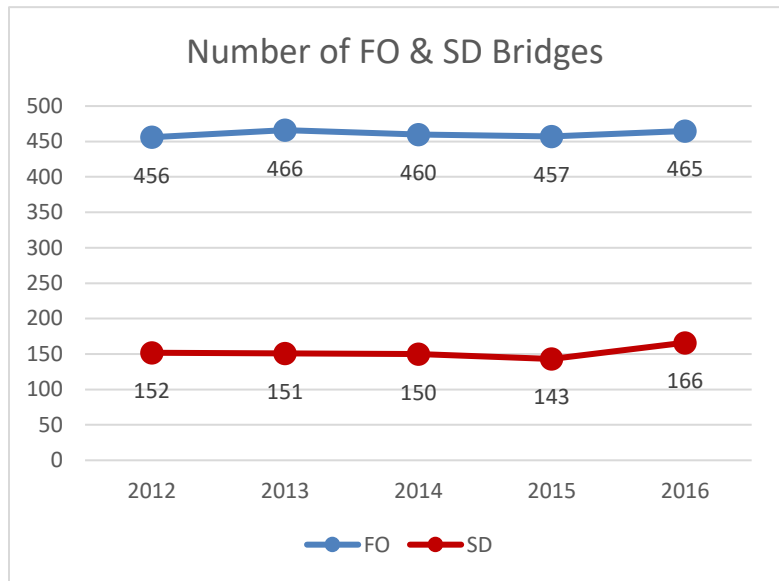
Posting Consideration Based on all AASHTO Legal Load Trucks

COUNTY	County Owned Bridges	Bridges Posted or May Consider Posting				Bridges With Posting Not Required				Deficient Bridges*
		FAR	Square Feet	NFAR	Square Feet	FAR	Square Feet	NFAR	Square Feet	
ADAMS	112	4	16,434	6	6,875	63	120,170	39	37,469	13
ASOTIN	18	0	0	0	0	13	1,654,154	5	11,952	1
BENTON	50	1	1,280	0	0	23	77,460	26	27,957	8
CHELAN	51	3	19,037	2	1,392	26	130,403	20	54,119	11
CLALLAM	29	0	0	3	7,938	11	73,219	15	64,528	9
CLARK	55	0	0	1	569	26	112,123	28	56,852	14
COLUMBIA	61	1	3,312	2	2,237	32	57,492	26	41,139	9
COWLITZ	62	1	1,999	2	6,783	27	144,755	32	59,590	13
DOUGLAS	20	1	2,700	0	0	13	56,916	6	12,657	0
FERRY	22	0	0	2	4,532	7	11,708	13	24,889	7
FRANKLIN	85	1	896	3	1,978	40	72,569	41	60,573	7
GARFIELD	33	0	0	0	0	20	20,657	13	15,769	5
GRANT	194	6	21,295	8	11,502	94	240,732	86	123,645	17
GRAYS HARBOR	167	3	54,989	1	744	81	368,851	82	162,533	25
ISLAND	0	0	0	0	0	0	0	0	0	0
JEFFERSON	32	0	0	0	0	13	23,082	19	67,852	4
KING	129	1	1,161	3	8,318	80	536,922	45	115,526	52
KITSAP	37	0	0	2	3,076	21	81,215	14	20,051	3
KITTITAS	114	0	0	2	9,400	29	96,847	83	140,528	8
KLICKITAT	57	0	0	0	0	14	44,952	43	91,128	15
LEWIS	197	0	0	2	2,664	70	251,497	125	249,838	25
LINCOLN	122	1	840	7	4,344	43	75,029	71	114,130	13
MASON	53	0	0	2	10,886	10	44,917	41	110,449	13
OKANOGAN	49	0	0	4	3,320	12	59,992	33	74,771	4
PACIFIC	60	4	12,010	13	47,995	5	20,513	38	94,515	13
PEND OREILLE	28	2	2,736	2	1,440	12	115,594	12	15,541	6
PIERCE	100	3	54,557	0	0	65	286,324	32	56,601	37
SAN JUAN	4	0	0	0	0	1	636	3	4,021	2
SKAGIT	105	0	0	1	3,971	43	201,832	61	131,896	22
SKAMANIA	25	0	0	3	6,938	5	35,395	17	57,508	6
SNOHOMISH	166	5	8,318	9	22,848	93	583,783	59	195,445	41
SPOKANE	106	6	14,690	6	6,190	47	268,368	47	120,945	21
STEVENS	49	2	6,432	0	0	9	30,957	38	71,081	8
THURSTON	94	0	0	2	1,724	62	265,210	30	69,862	20
WAHIAKUM	20	0	0	1	2,496	12	38,930	7	13,485	1
WALLA WALLA	104	7	25,200	9	7,965	33	110,109	55	125,938	11
WHATCOM	138	2	16,955	9	15,871	34	135,918	93	165,284	32
WHITMAN	249	2	4,700	5	4,002	122	248,447	120	161,318	56
YAKIMA	307	0	0	7	9,367	166	470,546	134	232,693	50
TOTAL	3,304	56	269,541	119	217,365	1,477	7,168,224	1,652	3,254,078	602

* Deficient Bridges are listed in WSBS as Structurally Deficient (SD) or Functionally Obsolete (FO).

County Bridge Condition at a Glance

All County NBI Bridges as of December 18, 2017		
Year	Deficiency Code	Count
2012	FO	456
2012	SD	152
2013	FO	466
2013	SD	151
2014	FO	460
2014	SD	150
2015	FO	457
2015	SD	143
2016	FO	465
2016	SD	166



All County NBI Bridges as of December 18, 2017	
Year	Average Sufficiency Rating
2012	81.77
2013	81.93
2014	81.92
2015	82.21
2016	82.10

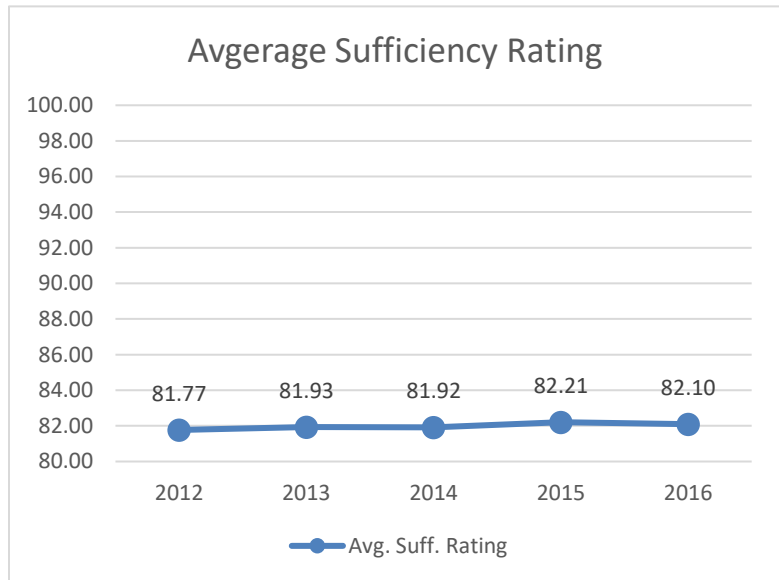


Table B
ACTUAL COUNTY ROAD RELATED REVENUES
2016
(thousands of dollars)

COUNTY	MOTOR VEHICLE FUEL TAX					TAXES				MISC			TOTAL
	COUNTY REGULAR	TIB	RAP	CAPP	MFMT TOTAL	PROP- ERTY	TIMBER EXCISE	OTHER TAXES	TOTAL TAXES	FED GRANTS	FED LANDS	OTHER	
ADAMS	4,349	0	703	906	5,957	1,688	0	0	1,688	424	1	30	8,100
ASOTIN	1,634	0	111	169	1,913	1,057	7	4	1,068	250	32	265	3,528
BENTON	3,302	0	2,255	493	6,050	5,525	0	139	5,664	1,167	0	519	13,400
CHELAN	2,432	27	110	399	2,968	7,239	40	54	7,333	1,132	641	367	12,441
CLALLAM	2,034	0	0	218	2,252	7,050	406	14	7,470	300	408	1,885	12,315
CLARK	6,609	2,308	378	756	10,051	33,262	191	11	33,464	7,334	6	10,822	61,677
COLUMBIA	1,483	0	78	237	1,798	1,403	0	5	1,408	327	0	354	3,887
COWLITZ	2,203	0	14	367	2,584	8,478	555	126	9,159	824	61	1,611	14,239
DOUGLAS	3,646	169	695	497	5,007	5,708	0	20	5,728	1,288	0	1,337	13,360
FERRY	1,784	0	2,565	444	4,793	784	46	1	831	1,457	404	1,468	8,953
FRANKLIN	2,913	0	37	571	3,521	2,596	0	30	2,626	269	157	318	6,891
GARFIELD	1,297	0	101	254	1,652	802	0	3	805	118	0	113	2,688
GRANT	6,500	0	333	1,383	8,216	9,019	0	168	9,187	1,134	6	636	19,179
GRAYS HARBOR	2,472	0	1	430	2,904	5,722	1,267	30	7,019	3,643	156	1,750	15,472
ISLAND	2,315	14	406	357	3,092	8,575	0	5	8,580	748	0	7,313	19,733
JEFFERSON	1,439	0	385	217	2,041	3,553	165	9	3,727	1,508	460	1,572	9,308
KING	13,542	0	79	789	14,410	82,041	85	35	82,161	4,446	115	54,547	155,679
KITSAP	5,291	1,798	0	514	7,603	24,211	56	53	24,320	3,407	0	9,808	45,138
KITTITAS	2,037	0	2,943	1,265	6,245	3,949	1	9	3,959	92	39	813	11,148
KLICKITAT	2,718	0	2,085	604	5,408	4,421	40	18	4,479	349	26	1,239	11,501
LEWIS	3,327	0	318	473	4,118	9,927	1,641	18	11,586	5,775	832	2,748	25,059
LINCOLN	4,525	0	127	934	5,586	1,989	0	9	1,998	2,671	5	311	10,571
MASON	2,318	0	1,661	437	4,416	6,597	170	36	6,803	952	151	3,474	15,796
OKANOOGAN	3,415	0	918	836	5,169	4,373	55	16	4,444	2,774	764	238	13,389
PACIFIC	1,409	0	0	721	2,130	3,088	313	451	3,852	562	0	640	7,184
PEND OREILLE	1,678	0	1,338	364	3,380	1,929	148	2	2,079	139	564	623	6,785
PIERCE	10,437	1,827	1,111	1,170	14,545	53,986	238	5,935	60,159	9,922	0	20,629	105,255
SAN JUAN	881	0	815	144	1,841	3,699	2	5	3,706	792	0	5,270	11,609
SKAGIT	3,468	0	59	591	4,118	15,314	0	0	15,314	1,590	0	3,969	24,991
SKAMANIA	815	0	56	1,200	2,071	1,452	189	6	1,647	4	194	411	4,327
SNOHOMISH	9,440	114	221	844	10,618	59,856	247	480	60,583	6,098	0	17,882	95,181
SPOKANE	9,282	2,176	627	1,224	13,309	20,591	30	25	20,646	3,587	7	9,196	46,745
STEVENS	3,770	0	15	777	4,562	5,276	390	4	5,670	436	0	268	10,936
THURSTON	5,268	48	67	578	5,961	17,914	372	19	18,305	279	1	6,947	31,493
WAHKIAKUM	871	0	135	173	1,179	72	26	0	98	135	0	989	2,401
WALLA WALLA	3,147	0	137	689	3,972	5,220	1	77	5,298	894	3	424	10,591
WHATCOM	4,189	0	212	1,175	5,575	18,128	182	33	18,343	3,531	428	1,740	29,617
WHITMAN	4,282	0	2	694	4,978	2,418	0	31	2,449	0	1,980	211	9,618
YAKIMA	6,140	1,053	122	1,214	8,530	11,818	13	38	11,869	5,748	584	3,370	30,101
TOTALS	148,662	9,534	21,221	25,109	204,526	460,730	6,876	7,919	475,525	76,106	8,025	176,107	940,289

% OF TOTAL 15.8% 1.0% 2.3% 2.7% 21.8% 49.0% 0.7% 0.8% 50.6% 8.1% 0.9% 18.7%

Source: County Reports to D.O.T. Secretary of Transportation

Table C

ACTUAL COUNTY ROAD RELATED EXPENDITURES

Including RAP and CAPP

2016

(thousands of dollars)

COUNTY	CONST	MAINT	ADMIN & OPER	FACIL	FERRY	BOND WARRANT RETT	TRAFFIC POLICING **	OTHER	TOTAL INCLUDES RAP & CAPP	RAP	CAPP ***
ADAMS	2,443	3,951	1,220	0	0	0	75	39	7,728	703	865
ASOTIN	449	2,110	896	0	0	0	0	0	3,455	111	169
BENTON	4,490	5,880	1,657	102	0	207	0 *	640	12,976	2,255	493
CHELAN	2,570	6,859	2,607	0	0	0	0	402	12,438	110	399
CLALLAM	4,120	6,870	2,873	45	0	0	500	149	14,557	0	218
CLARK	28,424	17,800	19,119	27	0	0	6 *	0	65,376	378	756
COLUMBIA	1,122	2,312	566	2	0	133	0 *	15	4,150	78	237
COWLITZ	1,730	6,504	3,669	117	0	71	0	930	13,021	14	367
DOUGLAS	3,808	6,393	2,487	400	0	534	0	93	13,715	695	497
FERRY	2,612	2,585	645	0	0	0	0 *	822	6,664	2,565	296
FRANKLIN	487	4,703	1,226	226	0	251	473	273	7,639	37	571
GARFIELD	1,751	1,602	340	0	0	0	0	121	3,814	101	212
GRANT	3,942	10,557	1,777	347	0	0	255	108	16,986	333	1,383
GRAYS HARBOR	4,641	8,490	1,593	9	0	0	0	948	15,681	1	430
ISLAND	5,960	6,246	5,280	0	0	0	0	128	17,614	406	357
JEFFERSON	1,197	3,868	1,405	131	0	32	0 *	2,007	8,640	385	217
KING	881	57,574	51,061	3,114	0	9,274	6,000	6,447	134,351	79	789
KITSAP	19,822	14,482	10,551	12	0	49	0 *	4,331	49,247	0	514
KITTITAS	2,333	6,546	1,279	134	0	0	0 *	316	10,608	2,943	631
KLUCKITAT	5,440	5,350	1,308	0	0	0	0	42	12,140	2,085	604
LEWIS	3,375	13,188	4,054	267	0	7	0 *	100	20,991	318	473
LINCOLN	2,540	5,167	1,158	0	0	0	0 *	692	9,557	127	851
MASON	1,234	6,855	4,292	0	0	0	0 *	0	12,381	1,661	437
OKANOGAN	3,895	7,515	2,017	27	0	341	0	0	13,795	918	836
PACIFIC	3,150	4,167	968	0	0	0	291	0	8,576	0	450
PEND OREILLE	355	2,858	810	213	0	0	100	1,064	5,400	1,338	313
PIERCE	9,418	42,358	26,126	704	0	16	2,625	19,204	100,451	1,111	1,170
SAN JUAN	3,765	4,425	1,506	0	0	22	0 *	2,573	12,291	815	144
SKAGIT	2,458	9,368	5,259	0	1,946	0	0 *	107	19,138	59	591
SKAMANIA	1,171	2,568	408	8	0	0	0	12	4,167	56	0
SNOHOMISH	26,390	27,744	34,872	279	0	618	0	8,612	98,515	221	844
SPOKANE	8,262	18,918	8,801	2,866	0	793	67 *	0	39,707	627	1,224
STEVENS	3,352	7,717	1,077	209	0	0	0	45	12,400	15	777
THURSTON	1,627	16,639	12,082	220	0	0	106 *	1,218	31,892	67	578
WAHKIAKUM	318	676	335	0	774	0	0	56	2,159	135	0
WALLA WALLA	2,815	4,820	1,969	0	0	0	0	143	9,747	137	689
WHATCOM	6,933	13,830	5,952	105	2,594	0	0 *	443	29,857	212	967
WHITMAN	3,315	5,536	1,431	132	0	0	107	0	10,521	2	694
YAKIMA	14,487	10,556	3,542	28	0	930	389	362	30,294	122	1,214
TOTALS	197,082	385,587	228,218	9,724	5,314	13,278	10,994	52,442	902,639	21,221	22,259

% OF TOTAL 21.8% 42.7% 25.3% 1.1% 0.6% 1.5% 1.2% 5.8%

Construction expenditure amounts do not include State ad & award Federal Aid participation

Source: County Reports to D.O.T. Secretary of Transportation

* Traffic Policing funds paid from diverted road levy

** Road Fund portion only

*** includes \$5 Million Motor Vehicle Account Funds

Table D

**ANTICIPATED COUNTY ROAD FUND REVENUES
2017 BUDGETS**

(thousands of dollars)

COUNTY	BEGIN FUND BAL	MOTOR VEHICLE FUEL TAX					TAXES			MISC			TOTAL
		COUNTY REGULAR	TIB	RAP	CAPP	OTHER STATE	PROP- ERTY	TIMBER EXCISE	OTHER TAXES	FED GRANTS	FED LANDS	OTHER	
ADAMS	4,800	4,360	0	60	935	0	1,756	0	8	1,668	1	78	13,666
ASOTIN	1,601	1,640	3,200	592	132	0	1,100	0	0	1,058	0	0	9,323
BENTON	8,451	3,300	0	679	509	71	5,771	0	115	373	0	2,867	22,136
CHELAN	2,792	2,438	447	3,034	410	672	7,300	15	50	557	640	609	18,964
CLALLAM	15,254	1,841	0	1,577	157	183	7,127	316	14	1,117	0	2,398	29,984
CLARK	21,096	6,325	7,046	0	756	0	34,127	400	20	2,185	3	15,263	87,221
COLUMBIA	300	1,400	0	2,648	237	32	1,395	0	0	1,159	0	425	7,596
COWLITZ	7,500	2,183	0	1,274	372	82	9,547	700	85	4,542	0	1,401	27,686
DOUGLAS	2,336	3,630	1,895	31	0	0	5,779	0	125	2,360	0	2,063	18,219
FERRY	277	1,829	0	2,128	304	3	781	0	31	851	520	102	6,826
FRANKLIN	800	2,999	0	162	587	0	3,283	0	35	2,090	170	1,146	11,272
GARFIELD	915	1,342	50	45	211	73	811	0	3	2,288	87	56	5,881
GRANT	7,000	6,691	0	1,700	1,427	0	8,800	0	140	4,610	207	356	30,931
GRAYS HARBOR	2,918	2,477	0	896	444	50	5,692	1,000	30	4,277	151	1,169	19,104
ISLAND	3,317	2,275	0	0	407	5,153	8,576	3	0	450	24	1,061	21,266
JEFFERSON	4,094	1,424	0	843	224	2,711	4,357	100	6	749	0	319	14,827
KING	11,606	12,000	0	0	0	2,420	86,875	35	250	10,650	140	39,417	163,393
KITSAP	31,947	5,550	0	1,421	533	0	27,391	75	56	3,437	0	11,173	81,583
KITTITAS	12,592	2,037	0	265	506	685	4,016	0	0	1,346	0	715	22,162
KLICKITAT	110	2,725	0	709	625	0	4,300	0	15	4,569	9	1,075	14,137
LEWIS	8,138	3,293	0	557	492	548	10,490	1,500	18	5,174	0	1,575	31,785
LINCOLN	500	4,421	0	1,532	659	242	1,504	0	10	2,463	4	106	11,441
MASON	6,664	2,300	0	1,606	400	12	8,184	255	20	1,903	150	866	22,360
OKANOGAN	4,300	3,396	0	830	717	197	3,723	40	25	2,914	754	68	16,964
PACIFIC	2,267	1,392	0	985	200	0	3,250	700	15	600	120	129	9,658
PEND OREILLE	1,200	1,736	0	231	287	255	1,869	100	1	2,966	375	61	9,081
PIERCE	28,217	10,965	288	70	1,150	1,408	55,139	270	0	6,938	250	20,231	124,926
SAN JUAN	1,856	863	0	220	149	3,310	3,850	0	5	276	0	304	10,833
SKAGIT	6,385	3,240	0	1,681	610	3,846	14,345	300	54	11,410	350	2,136	44,357
SKAMANIA	1,671	864	0	0	155	771	1,759	210	5	1,832	2	140	7,409
SNOHOMISH	12,257	9,510	2,979	1,411	850	1,200	60,729	475	375	10,097	51	19,610	119,544
SPOKANE	12,260	9,242	1,476	5,420	1,266	1,070	22,655	30	25	7,400	7	2,918	63,769
STEVENS	5,450	3,750	0	750	800	73	5,299	375	3	579	175	9	17,263
THURSTON	11,365	5,233	690	750	579	0	19,100	240	0	3,212	0	6,247	47,416
WAHIAKUM	1,894	878	0	275	221	535	139	100	1	2,074	1	268	6,386
WALLA WALLA	6,700	2,970	0	0	695	119	5,100	0	75	6,925	0	578	23,162
WHATCOM	33,813	4,235	0	0	610	704	18,075	219	38	1,090	430	8,541	67,755
WHITMAN	6,415	4,300	0	3,453	703	162	2,156	0	30	2,237	0	8	19,464
YAKIMA	6,210	6,320	1,510	1,002	1,258	0	12,024	0	0	8,189	532	2,780	39,825
TOTAL	297,268	147,374	19,581	38,837	20,577	26,587	478,174	7,458	1,683	128,615	5,153	148,268	1,319,575

% OF TOTAL 22.5% 11.2% 1.5% 2.9% 1.6% 2.0% 36.2% 0.6% 0.1% 9.7% 0.4% 11.2%

Table E

ANTICIPATED COUNTY ROAD FUND EXPENDITURES

2017 BUDGETS

(thousands of dollars)

COUNTY	CONST	MAINT	ADMIN & OPER	FACIL	FERRY	BOND WARR RETT	TRAFFIC POLICING	OTHER	TOTAL	END FUND BAL	GRAND TOTAL
ADAMS	1,977	5,343	1,297	250	0	0	0	165	9,032	4,634	13,666
ASOTIN	4,403	2,360	605	0	0	0	0	0	7,368	1,955	9,323
BENTON	8,800	8,021	2,215	0	0	206	0	128	19,370	2,766	22,136
CHELAN	6,252	7,354	2,544	282	0	0	0	358	16,790	2,174	18,964
CLALLAM	11,938	7,704	3,089	150	0	0	510	202	23,593	6,391	29,984
CLARK	14,521	22,844	19,505	15	0	0	5	4,502	61,392	25,829	87,221
COLUMBIA	4,038	2,174	660	25	0	135	0	24	7,056	540	7,596
COWLITZ	7,991	8,897	3,505	455	0	72	0	879	21,799	5,887	27,686
DOUGLAS	6,481	6,434	2,571	44	0	530	0	587	16,647	1,572	18,219
FERRY	2,807	3,302	454	0	0	0	0	113	6,676	150	6,826
FRANKLIN	2,985	4,857	1,422	120	0	252	473	424	10,533	739	11,272
GARFIELD	2,907	1,424	265	0	0	0	0	199	4,795	1,086	5,881
GRANT	9,310	12,872	1,862	700	0	2	270	915	25,931	5,000	30,931
GRAYS HARBOR	6,860	8,739	1,850	49	0	0	0	62	17,560	1,544	19,104
ISLAND	4,815	7,881	3,765	810	0	0	825	3,170	21,266	0	21,266
JEFFERSON	4,845	4,660	1,455	51	0	79	720	23	11,833	2,994	14,827
KING	5,330	80,080	27,112	24	0	5,865	7,500	28,508	154,419	8,974	163,393
KITSAP	19,645	13,175	6,302	0	0	51	2,690	16,054	57,917	23,666	81,583
KITTITAS	4,333	5,983	1,514	70	0	0	0	1,755	13,655	8,507	22,162
KLICKITAT	7,314	5,500	1,000	0	0	0	0	225	14,039	98	14,137
LEWIS	9,564	13,001	4,368	2	0	0	0	178	27,113	4,672	31,785
LINCOLN	4,478	4,817	1,188	28	0	0	0	447	10,958	483	11,441
MASON	7,158	7,011	3,142	685	0	0	0	1,040	19,036	3,324	22,360
OKANOGAN	2,962	8,033	2,209	26	0	0	0	63	13,293	3,671	16,964
PACIFIC	2,174	5,388	878	0	0	0	311	0	8,751	907	9,658
PEND OREILLE	3,799	3,285	938	139	0	0	200	86	8,447	634	9,081
PIERCE	16,663	24,110	43,151	0	400	3,454	2,758	10,997	101,533	23,393	124,926
SAN JUAN	2,982	4,264	1,787	115	0	0	0	732	9,880	953	10,833
SKAGIT	19,011	11,366	5,403	0	2,722	0	1,350	100	39,952	4,405	44,357
SKAMANIA	2,661	1,949	838	200	0	0	0	0	5,648	1,761	7,409
SNOHOMISH	38,932	29,688	30,072	170	0	618	0	20,064	119,544	0	119,544
SPOKANE	18,936	19,171	10,925	3,507	0	1,961	73	825	55,398	8,371	63,769
STEVENS	1,661	8,074	1,237	4,382	0	0	0	39	15,393	1,870	17,263
THURSTON	10,104	15,846	11,499	2,031	0	0	142	1,252	40,874	6,542	47,416
WAHKIACUM	2,999	2,151	249	0	942	17	0	28	6,386	0	6,386
WALLA WALLA	12,527	5,444	2,263	0	0	0	0	168	20,402	2,760	23,162
WHATCOM	13,092	14,149	7,151	300	2,801	0	0	10,320	47,813	19,942	67,755
WHITMAN	9,543	7,275	1,764	0	0	0	119	0	18,701	763	19,464
YAKIMA	21,918	10,481	2,112	0	0	1,225	448	0	36,184	3,641	39,825
TOTAL	338,716	415,107	214,166	14,630	6,865	14,467	18,394	104,632	1,126,977	192,598	1,319,575

% OF TOTAL 25.7% 31.5% 16.2% 1.1% 0.5% 1.1% 1.4% 7.9% 85.4% 14.6%

Table F
COUNTY ROAD LEVY SUMMARY
As shown in 2017 Budgets
(thousands of dollars)

COUNTY	Unincorp Valuation	County Road Maximum Property Tax Levy (2.25)	County Road Property Tax Revenue Planned	Operating Transfer	Payment for Services	(RCW 36.33.220)		Revenue Remaining in Road Fund	Ley Shift from Road to Current Exp. (RCW 84.52.043)
						Diversion from Road To Current Expense	County Road Property Tax Exp. for Other Purposes		
						Traffic Policing expense paid by:			
ADAMS	1,350,845	3,039	1,756		100			1,656	0
ASOTIN	1,152,497	2,593	1,100					1,100	600
BENTON	4,173,310	9,390	6,351			576		5,775	0
CHELAN	5,677,929	12,775	7,622	120				7,502	400
CLALLAM	5,099,896	11,475	7,134		510			6,624	0
CLARK	24,808,150	55,818	38,997			4,533		34,465	0
COLUMBIA	711,122	1,600	1,499				Divert - Cur Exp/Solid Waste 100	1,399	0
COWLITZ	5,599,858	12,600	9,552					9,552	2,200
DOUGLAS	3,665,668	8,248	5,880					5,880	0
FERRY	566,664	1,275	1,275			484		790	0
FRANKLIN	2,512,292	5,653	2,667		473			2,194	650
GARFIELD	546,147	1,229	811					811	0
GRANT	5,183,640	11,663	9,236		270			8,966	0
GRAYS HARBOR	2,580,597	5,806	5,806		500			5,306	0
ISLAND	10,748,692	24,185	8,684	825				7,859	0
JEFFERSON	3,409,833	7,672	4,349			720		3,629	0
KING	39,044,968	87,851	87,638	7,881				79,757	0
KITSAP	18,614,449	41,883	27,744	2,895				24,850	0
KITTITAS	4,383,739	9,863	4,176			200		3,976	1,000
KLICKITAT	2,762,336	6,215	4,466					4,466	0
LEWIS	5,182,648	11,661	11,567			1,310		10,257	0
LINCOLN	1,184,066	2,664	2,009			500		1,509	0
MASON	6,428,238	14,464	9,678			1,500		8,178	0
OKANOGAN	2,908,416	6,544	3,671					3,671	750
PACIFIC	1,774,787	3,993	3,150		311			2,839	0
PEND OREILLE	1,228,713	2,765	1,827		200			1,627	150
PIERCE	38,797,201	87,294	68,709	2,758			Divert - Traffic and Courts 13,453 *	52,498	0
SAN JUAN	5,954,789	13,398	4,577			650		3,927	0
SKAGIT	8,007,400	18,017	14,640			1,350		13,290	0
SKAMANIA	1,197,104	2,693	1,774					1,774	0
SNOHOMISH	43,783,607	98,513	62,312	4,204				58,107	0
SPOKANE	14,326,590	32,235	24,058			1,200		22,858	5,000
STEVENS	3,282,516	7,386	5,335					5,335	450
THURSTON	14,214,014	31,982	22,027		142	3,000		18,886	0
WAHIAKUM	404,919	911	123					123	442
WALLA WALLA	2,681,117	6,033	5,387					5,387	0
WHATCOM	12,791,760	28,781	18,930			807		18,124	0
WHITMAN	1,734,709	3,903	2,448		119			2,329	0
YAKIMA	6,736,073	15,156	12,353		448			11,905	2,278
TOTALS	315,211,297	709,225	511,319	18,683	3,072	16,830	13,553	459,181	13,920

* Increased by voter approval (RCW 84.55.050)

Table G

COUNTY ROAD MILEAGE - January 1, 2017

COUNTY	URBAN ROADS			RURAL ROADS			SYSTEM CENTERLINE TOTAL	PAVED ARTERIAL C/L MILES	PAVED ARTERIAL LANE-MILES	UNPAVED C/L MILES
	ACCESS	ARTERIAL	TOTAL	ACCESS	ARTERIAL	TOTAL				
ADAMS	10.759	3.726	14.49	1,093.855	665.819	1,759.67	1,774.16	547.499	1,091.778	1,124.919
ASOTIN	59.524	20.569	80.09	167.083	152.325	319.41	399.50	100.304	203.251	231.960
BENTON	126.233	51.921	178.15	393.232	290.070	683.30	861.46	296.697	593.394	253.131
CHELAN	54.005	25.970	79.98	357.040	209.965	567.01	646.98	235.655	471.960	123.325
CLALLAM	83.010	16.410	99.42	271.860	118.970	390.83	490.25	135.190	269.740	3.150
CLARK	420.710	148.290	569.00	281.210	272.660	553.87	1,122.87	420.950	906.915	13.220
COLUMBIA	0.000	0.000	0.00	271.678	229.126	500.80	500.80	141.369	282.738	354.096
COWLITZ	46.320	25.570	71.89	259.612	195.690	455.30	527.19	221.260	442.570	6.560
DOUGLAS	61.878	38.150	100.03	1,145.547	400.310	1,545.86	1,645.89	296.990	600.750	1,205.030
FERRY	0.000	0.000	0.00	504.300	232.320	736.62	736.62	177.625	355.628	535.095
FRANKLIN	16.494	11.530	28.02	609.840	336.930	946.77	974.79	342.980	684.490	394.000
GARFIELD	0.000	0.000	0.00	234.077	213.026	447.10	447.10	123.576	247.152	317.780
GRANT	63.473	30.124	93.60	1,536.435	872.622	2,409.06	2,502.65	828.157	1,663.970	1,030.195
GRAYS HARBOR	33.685	22.283	55.97	264.705	242.564	507.27	563.24	260.231	520.423	36.345
ISLAND	96.130	35.015	131.15	272.254	179.926	452.18	583.33	214.941	430.610	5.060
JEFFERSON	5.136	0.000	5.14	254.989	138.475	393.46	398.60	130.335	261.300	72.373
KING	631.350	207.793	839.14	388.191	242.575	630.77	1,469.91	450.368	940.092	51.033
KITSAP	412.787	167.663	580.45	195.511	140.057	335.57	916.02	307.720	622.876	8.450
KITSTITAS	9.986	11.997	21.98	242.743	296.375	539.12	561.10	304.562	613.859	63.310
KLICKITAT	0.000	0.000	0.00	695.629	384.490	1,080.12	1,080.12	366.050	731.240	516.456
LEWIS	35.536	22.440	57.98	718.062	266.135	984.20	1,042.17	286.542	573.800	41.681
LINCOLN	0.000	0.000	0.00	1,338.937	658.430	1,997.37	1,997.37	384.740	769.480	1,541.410
MASON	27.749	9.556	37.31	316.122	263.281	579.40	616.71	263.244	526.618	44.782
OKANOGAN	7.132	2.802	9.93	838.125	490.593	1,328.72	1,338.65	418.576	837.152	661.666
PACIFIC	0.000	0.000	0.00	215.586	130.305	345.89	345.89	120.005	240.400	44.535
PEND OREILLE	0.000	0.000	0.00	380.343	180.856	561.20	561.20	167.490	334.980	265.609
PIERCE	631.981	425.545	1,057.53	250.110	250.410	500.52	1,558.05	675.955	1,430.590	14.140
SAN JUAN	0.000	0.000	0.00	184.000	86.802	270.80	270.80	86.802	173.604	41.464
SKAGIT	71.332	36.910	108.24	373.527	319.040	692.57	800.81	355.950	712.790	40.157
SKAMANIA	0.000	0.000	0.00	148.929	90.449	239.38	239.38	90.449	181.369	28.750
SNOHOMISH	631.106	184.011	815.12	463.019	311.715	774.73	1,589.85	492.666	1,012.279	11.035
SPOKANE	288.681	126.250	414.93	1,447.327	664.390	2,111.72	2,526.65	720.050	1,480.813	1,132.061
STEVENS	0.000	0.000	0.00	929.652	560.605	1,490.26	1,490.26	468.405	936.840	823.945
THURSTON	332.788	112.923	445.71	350.863	232.180	583.04	1,028.75	345.103	704.269	21.690
WAHIAKUM	0.000	0.000	0.00	56.489	81.819	138.31	138.31	78.311	156.622	12.654
WALLA WALLA	42.664	34.884	77.55	452.578	423.464	876.04	953.59	413.380	826.930	365.252
WHATCOM	124.520	69.980	194.50	456.030	288.300	744.33	938.83	358.280	719.400	30.840
WHITMAN	0.000	0.000	0.00	1,282.679	614.511	1,897.19	1,897.19	421.031	842.062	1,454.799
YAKIMA	121.490	101.610	223.10	773.750	646.630	1,420.38	1,643.48	726.400	1,468.420	538.822
STATEWIDE	4,446.46	1,943.92	6,390.38	20,415.92	12,374.21	32,790.13	39,180.51	12,775.84	25,863.15	13,460.78
EASTERN	862.319	459.533	1,321.85	14,694.850	8,522.857	23,217.71	24,539.56	7,481.536	15,036.887	12,932.861
WESTERN	3,584.14	1,484.39	5,068.53	5,721.07	3,851.35	9,572.42	14,640.95	5,294.30	10,826.27	527.92

County Road Log Data certified August 10, 2017 by the County Road Administration Board

Table H

**COUNTY ARTERIAL PRESERVATION PROGRAM
2016 ACCOMPLISHMENT SUMMARY**

COUNTY	1/1/15 Eligible Arterial System C/Line (miles)	Total CAPP * Available (\$1,000)	Total CAPP * Expended (\$1,000)	Total Eligible Expenses (\$1,000)	CAPP* Contri- bution (%)	2016 Arterial Prep/ Repair (\$1,000)	2016 Arterial Sealcoat C/Line (miles)	2016 Arterial Overlay C/Line (miles)	2016 Total Resurf. C/Line (miles)	2016 Percent System Resurf'd
ADAMS	547.45	905.7	865.2	865.2	100.0	147.5	43.9	0.0	43.9	8.0
ASOTIN	100.30	168.6	168.6	168.6	100.0	0.0	8.0	0.0	8.0	8.0
BENTON	297.27	493.1	493.1	1,070.5	46.1	0.0	60.7	0.0	60.7	20.4
CHELAN	239.95	398.7	398.7	784.1	50.9	386.2	11.0	0.0	11.0	4.6
CLALLAM	131.73	217.8	217.8	689.4	31.6	24.8	18.3	0.0	18.3	13.9
CLARK	422.77	756.2	756.2	4,571.1	16.5	505.2	22.9	11.6	34.5	8.2
COLUMBIA	142.63	236.6	236.6	299.3	79.0	132.4	7.6	0.0	7.6	5.3
COWLITZ	221.31	367.5	367.5	1,587.0	23.2	708.9	40.2	1.1	41.3	18.6
DOUGLAS	296.49	496.9	496.9	1,093.8	45.4	776.7	10.5	0.0	10.5	3.5
FERRY	177.63	444.0	295.7	295.7	100.0	157.3	7.8	0.0	7.8	4.4
FRANKLIN	345.22	571.5	571.5	1,047.7	54.5	137.0	38.5	0.0	38.5	11.2
GARFIELD	123.58	254.2	212.0	212.0	100.0	0.0	9.2	0.0	9.2	7.4
GRANT	830.13	1383.5	1383.5	3,797.8	36.4	701.6	96.0	6.2	102.2	12.3
GRAYS HARBOR	259.66	430.4	430.4	1,665.1	25.9	904.0	28.7	0.0	28.7	11.1
ISLAND	214.94	357.0	357.0	3,281.1	10.9	919.8	21.0	8.3	29.3	13.6
JEFFERSON	130.34	216.7	216.7	229.1	94.6	43.1	7.1	0.0	7.1	5.4
KING	455.67	789.4	789.4	1,665.4	47.4	1,499.2	0.0	0.8	0.8	0.2
KITSAP	306.65	514.3	514.3	2,260.6	22.8	716.3	8.3	11.4	19.7	6.4
KITTITAS	305.17	1264.9	631.1	768.4	82.1	101.1	37.3	0.0	37.3	12.2
KLICKITAT	364.86	604.1	604.1	959.3	63.0	109.7	24.9	0.0	24.9	6.8
LEWIS	284.99	473.3	473.3	1,235.6	38.3	164.0	45.4	0.0	45.4	15.9
LINCOLN	384.74	934.1	851.5	1,356.9	62.7	361.3	39.9	0.0	39.9	10.4
MASON	263.36	437.0	437.0	1,565.4	27.9	190.9	39.5	4.3	43.8	16.6
OKANOGAN	418.33	835.8	835.8	1,243.5	67.2	493.5	47.5	0.0	47.5	11.3
PACIFIC	119.83	721.1	450.4	1,383.7	32.5	0.0	6.2	9.6	15.8	13.2
PEND OREILLE	167.49	363.6	313.3	313.3	100.0	100.9	17.8	0.0	17.8	10.6
PIERCE	669.86	1170.0	1170.0	4,346.4	26.9	94.4	41.9	7.3	49.2	7.3
SAN JUAN	87.05	144.4	144.4	411.4	35.1	0.0	8.1	0.0	8.1	9.4
SKAGIT	356.03	591.4	591.4	1,653.8	35.8	424.5	34.6	3.0	37.6	10.6
SKAMANIA	90.45	1,200.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNOHOMISH	495.01	843.5	843.5	2,862.0	29.5	810.7	24.0	6.0	30.0	6.1
SPOKANE	717.48	1223.5	1223.5	4,474.7	27.3	967.7	81.4	4.3	85.7	11.9
STEVENS	468.41	777.0	777.0	1,386.7	56.0	837.3	47.1	0.0	47.1	10.1
THURSTON	340.38	578.3	578.3	3,378.1	17.1	962.4	0.0	9.7	9.7	2.8
WAHKIAKUM	78.31	173.4	0.0	48.8	0.0	48.8	0.0	0.0	0.0	0.0
WALLA WALLA	414.59	688.7	688.7	1,491.8	46.2	408.5	64.2	0.0	64.2	15.5
WHATCOM	358.28	1174.5	966.5	966.5	100.0	552.1	16.5	0.0	16.5	4.6
WHITMAN	358.28	694.0	694.0	2,439.6	28.4	486.1	61.8	0.0	61.8	17.2
YAKIMA	722.77	1214.3	1214.3	1,860.5	65.3	118.3	44.1	1.8	45.8	6.3
TOTAL	12,709.3	25,109.3	22,259.4	59,730.1	37.3%	14,992.1	1,121.6	85.4	1,206.9	9.5%
% System Resurfaced:									9.5%	

* Includes \$5,000,000 statewide Motor Vehicle Account (MVA) contribution for County Arterial Preservation and carried forward CAPA amounts from prior years.

Table I

COUNTY FREIGHT AND GOODS SYSTEM - 1/1/2017

COUNTY	Freight and Goods System - Truck Route Class					Total	Total	%
	T-1	T-2	T-3	T-4	T-5	FGTS	Adequate	Adequate
ADAMS			143.345	223.296	271.862	638.50	236.765	37.1%
ASOTIN		0.15	22.954	19.976	0.000	43.08	37.622	87.3%
BENTON			254.232	112.087	36.278	402.60	168.589	41.9%
CHELAN			48.500	83.315	42.840	174.66	54.620	31.3%
CLALLAM			74.050	61.550	11.010	146.61	3.750	2.6%
CLARK	0.22	10.44	135.420	159.550	0.000	305.63	253.080	82.8%
COLUMBIA			10.303	49.058	146.807	206.17	11.200	5.4%
COWLITZ			77.720	57.120	3.000	137.84	110.120	79.9%
DOUGLAS			7.060	85.560	171.150	263.77	15.310	5.8%
FERRY			109.250	115.710	0.000	224.96	27.310	12.1%
FRANKLIN			111.390	154.050	252.510	517.95	247.760	47.8%
GARFIELD			0.000	10.130	125.746	135.88	113.026	83.2%
GRANT		10.19	269.425	259.438	305.353	844.41	57.736	6.8%
GRAYS HARBOR			212.566	7.120	0.000	219.69	193.082	87.9%
ISLAND			12.436	48.640	0.200	61.28	60.126	98.1%
JEFFERSON			39.640	33.005	65.750	138.40	108.055	78.1%
KING	3.90	33.30	273.461	93.017	0.000	403.68	368.628	91.3%
KITSAP		1.73	209.823	105.895	0.000	317.45	227.050	71.5%
KITTITAS		1.86	144.079	180.406	0.080	326.43	243.727	74.7%
KLICKITAT			174.680	112.340	0.000	287.02	7.630	2.7%
LEWIS		1.98	124.934	261.604	102.441	490.96	270.665	55.1%
LINCOLN			131.900	281.720	363.904	777.52	446.470	57.4%
MASON		0.65	71.661	48.995	1.700	123.01	7.342	6.0%
OKANOGAN			100.505	116.463	181.684	398.65	5.426	1.4%
PACIFIC			0.000	135.409	0.000	135.41	26.889	19.9%
PEND OREILLE			38.393	125.397	62.208	226.00	0.490	0.2%
PIERCE	5.68	52.10	312.075	28.800	7.700	406.36	142.280	35.0%
SAN JUAN			23.921	64.327	0.000	88.25	56.783	64.3%
SKAGIT		4.48	132.900	103.012	0.000	240.40	110.497	46.0%
SKAMANIA			22.468	58.727	0.000	81.20	80.775	99.5%
SNOHOMISH	4.39	7.95	328.342	107.103	60.695	508.47	318.675	62.7%
SPOKANE	5.70	25.86	453.720	106.900	109.280	701.46	399.941	57.0%
STEVENS			91.820	164.520	78.950	335.29	12.820	3.8%
THURSTON		10.44	238.070	123.510	4.131	376.15	28.465	7.6%
WAHKIAKUM			17.115	39.662	5.300	62.08	45.356	73.1%
WALLA WALLA		2.15	114.147	301.552	5.390	423.24	46.417	11.0%
WHATCOM		28.01	144.650	26.730	0.000	199.39	70.400	35.3%
WHITMAN			143.624	136.854	159.653	440.13	166.932	37.9%
YAKIMA		4.81	366.720	184.840	63.790	620.16	611.930	98.7%
TOTAL	19.89	196.09	5,187.30	4,387.39	2,639.41	12,430.08	5,393.74	43.4%

County Road Log Data Certified August 10, 2017 by the County Road Administration Board

Table J**2016 COUNTY FORCES SUMMARY**

COUNTY	2016 County Forces Limit	2016 Proposed County Forces Construction Expenditure	2016 Actual County Forces Construction Expenditure	% Expended of County Forces Limit
ADAMS	822,903	756,300	549,615	66.8%
ASOTIN	809,097	75,000	0	0.0%
BENTON	1,788,379	0	6,680	0.4%
CHELAN	1,269,453	147,000	30,865	2.4%
CLALLAM	1,266,444	69,000	100,342	7.9%
CLARK	3,396,894	294,000	442,153	13.0%
COLUMBIA	808,126	0	8,574	1.1%
COWLITZ	1,270,025	260,000	1,915	0.2%
DOUGLAS	1,282,035	0	9,942	0.8%
FERRY	809,699	102,000	160,012	19.8%
FRANKLIN	1,275,319	0	0	0.0%
GARFIELD	807,257	374,000	126,880	15.7%
GRANT	1,305,481	1,063,000	717,873	55.0%
GRAYS HARBOR	1,168,003	150,000	8,175	0.7%
ISLAND	1,167,785	40,000	425,198	36.4%
JEFFERSON	1,261,985	0	0	0.0%
KING	3,519,126	65,000	7,096	0.2%
KITSAP	1,812,461	810,000	416,657	23.0%
KITTITAS	1,267,216	441,000	161,551	12.7%
KLICKITAT	814,716	200,000	541,286	66.4%
LEWIS	1,277,759	235,000	147,789	11.6%
LINCOLN	823,665	644,500	544,052	66.1%
MASON	1,269,470	300,000	67,620	5.3%
OKANOGAN	1,278,819	130,000	72,123	5.6%
PACIFIC	807,217	400,000	522,009	64.7%
PEND OREILLE	809,107	230,000	253,689	31.4%
PIERCE	3,495,235	25,000	12,391	0.4%
SAN JUAN	805,035	706,000	455,062	56.5%
SKAGIT	1,278,260	25,000	0	0.0%
SKAMANIA	804,298	0	0	0.0%
SNOHOMISH	3,461,019	3,140,000	2,425,575	70.1%
SPOKANE	3,457,682	0	329,031	9.5%
STEVENS	1,282,771	195,000	263,655	20.6%
THURSTON	1,810,688	0	1,548,775	85.5%
WAHKIAKUM	804,598	148,000	65,307	8.1%
WALLA WALLA	1,275,581	0	0	0.0%
WHATCOM	1,798,332	1,240,000	56,913	3.2%
WHITMAN	1,287,101	570,000	426,338	33.1%
YAKIMA	1,821,337	0	35,465	1.9%
TOTAL	57,570,378	12,834,800	10,940,608	19.0%

County Bridges – Critical Local Infrastructure

Introduction

Washington State’s 39 counties are responsible for the operation, maintenance, repair and replacement of more than 3,300 bridges on the county road systems. These bridges vary from twenty to several hundred feet in length, and from under 12 feet to more than 80 feet wide. The Counties are also responsible for a considerable number of bridges and drainage structures under 20 feet in length. They carry roads over streams, canals, rivers, lakes, roads, railroads, and utilities. Eight of the bridge structures serve as docks in the four counties that operate ferries. Some have been built in the last few years, and some date from early in the last century. Each and every one is inspected at least once every two years and maintained to insure the safety of the travelling public. When necessary, deteriorating bridges are closed until funding is secured and the bridges are repaired or replaced. A recent example is King County’s South Park Bridge over the Duwamish River south of Seattle, closed on June 30, 2010. A funding package for design and construction of a replacement bridge with federal, state, and local funds was assembled, and the new replacement bridge opened to the public on June 14, 2014.

Bridge materials and designs have evolved over the years. The first bridges in Washington State were likely locally cut logs laid across a stream. Wooden trestles came into use in the late 1880’s. Iron and steel truss bridges were probably next, as the components could be fabricated at distant locations, transported by train or horse wagon, and then assembled with rivets and bolts on the site. In the early 1900’s, concrete became a viable bridge material that could be mixed on site and poured into arches and columns. Steel deck girders became popular as the strength of steel increased in the mid-20th century, and the designs needed for the Interstate Highway System brought advances in pre-cast concrete girders, deck panels and larger box culverts. Further advances in corrugated steel and aluminum have evolved from small round culverts to long open-bottom spans. Few county bridges need the sophisticated features of a suspension or cable-stayed bridge design, but the 21st century will probably see innovations in plastic, composite, and synthetic materials.

County Owned Bridges by Material Type				
Material	Concrete	Steel	Timber	Total
Number	2616	422	278	3316
Percent	79%	13%	8%	100%

About 16% of the bridges on the county road systems are considered deficient, and in need of major rehabilitation or replacement. Deficient bridges fall into two categories: “Structurally Deficient” (SD) or “Functionally Obsolete” (FO). Those classified as Structurally Deficient are unable to accommodate legal highway loads (typically 40 tons/80,000 lbs.), and are each posted with a lower load limit. Functionally Obsolete bridges typically have travel lanes less than 12 feet wide, overhead clearances of less than 15 feet, or difficult alignments for modern highway vehicles and agricultural equipment. Priority for the limited replacement funding is focused on the Structurally Deficient bridges for obvious safety reasons. Other bridges, especially in urban areas, may be identified for replacement or widening to carry more vehicles as traffic flows and congestion increase.

County Owned Bridges by ADT Range						
ADT	1-399	400 - 1499	1,500 - 2,000	2,001 - 4,999	5,000 & Over	Total
Number	2036	741	120	263	156	3316
Percent	61%	22%	4%	8%	5%	100%

How long is a bridge?

For the purposes of federal funding eligibility and inventory requirements, a “bridge” is defined as having a clear span of greater than twenty feet in length. As technology has advanced, most modern spans that are less than 20 feet long have been constructed as concrete “box culverts” or corrugated metal pipe arches. The use of large circular pipes (approximately four to twelve feet in diameter) has become less common as environmental issues of fish passage and stream flow characteristics have favored designs with more natural stream beds. As standards for fish passage and stream restoration continue to develop and become more complex, the lengths of new and replacement structures over water have increased significantly. It is not uncommon for the replacement of an existing 48” round culvert pipe to require an open-bottom structure with a span of 12 to 30 feet, or even a bridge of significant span.

On the other end of the spectrum, some county bridges span hundreds of feet. The Sauk River Bridge in Snohomish County near Darrington is 479 feet long, and the Elwha River Bridge in Clallam County is not only almost 600 feet long, but is also high – with the road deck some 80 feet above the Elwha River.

County Owned Bridges by Length						
Length	20' - 50'	51' - 100'	101' - 250'	251' -500'	Over 500'	Total
Number	1477	1007	657	132	43	3316
Percent	45%	30%	20%	4%	1%	100%

How long can a bridge last?

It is common for bridge designs to be based on an estimated useful life of 50 to 75 years. Some major structures, such as the Brooklyn Bridge in New York City, have been in service for more than 125 years with regular maintenance and rehabilitation. In Washington State, some bridges are nearing their centennials. Among the county inventories, many bridges date from the 1920s and 1930s and are still in use beyond the expected design lives. Among these older bridges, a significant number were constructed on state highway routes which were transferred to counties following the opening of the Interstate Highways forty to sixty years ago. Major segments of SR 99 from Vancouver to Tumwater and Marysville to Blaine were transferred to Clark, Cowlitz, Lewis, Thurston, Snohomish, Skagit, and Whatcom counties with the opening of I-5. Portions of US 12 between Yakima and the Tri-Cities were transferred to Yakima and Benton counties with the opening of I-82. The portions of US 10 that were not incorporated into the new I-90 alignment became county roads through Kittitas, Grant, Adams, Lincoln, and Spokane counties. A review of the county bridge inventory data indicates there are 33 county bridges in

service today that are over 100 years old. Most of these are steel truss, concrete arch, or timber structures.

County Owned Bridges by Age (Years)					
Age	Over 85	84-60	59 - 35	Under 35	Total
Number	103	458	1398	1357	3316
Percent	3%	14%	42%	41%	100%

What's involved in a bridge inspection?

Bridges are to be inspected at least every two years for structural soundness and condition. The elements of the inspection are determined by the bridge type and the materials used in the construction of the bridge. Inspections are completed by trained and certified bridge inspectors who may be county employees, consultants, or employees of another government agency. Depending upon the structural design of the bridge, its location and environment, specialized equipment may also be needed to perform the inspection.

For instance, an under bridge inspection truck ("UBIT") has an articulated crane that places a small working platform or bucket above or below the bridge deck. This device allows for close-up inspection of critical structural members that are either high above the roadway or below the deck and high above the road, railroad, or river the bridge crosses over.

There are a limited number of these vehicles available in Washington State, and the counties and other bridge owners have developed a high level of cooperation and coordination to make the best use of this costly equipment. The UBIT is especially useful for the inspection of "fracture critical" bridge components, the failure of which could lead to a catastrophic bridge collapse.

Another specialized inspection technique addresses the potential for scour damage to the foundations of bridges that cross waterways. The flow of a river or stream, especially during seasonal high water flows or floods, can undermine the submerged substructure and foundations, leading to settlement or washout of a bridge pier or abutment. Underwater inspections, using remote cameras and skilled underwater divers, are needed to accomplish these inspections and evaluations.

The bi-annual costs for bridge inspections can range from several hundred dollars for a simple span over a small waterway to tens of thousands of dollars if a UBIT is utilized or an underwater inspection is required. New technologies for inspection are currently being tested around the country with the purposes of driving down the cost and the time it takes to do the inspections, and limiting exposure of inspection teams to hazardous situations. The most notable is the use of Unmanned Aerial Systems.

Upon completion of a bridge inspection, the data is compiled and uploaded into the Local Agency Bridge Database managed by the Local Programs division of WSDOT. If the rating indicates some level of structural deficiency or functional obsolescence, the county is responsible to install signs

indicating the load limits for various types of vehicles. In extreme cases, the bridge may be closed to traffic until repairs are made or the bridge is replaced. Either limitation often creates significant impacts on local residents and businesses, as the detour route may be many miles long.

County Owned Bridges by Sufficiency Rating Range						
	Very Poor	Poor	Fair	Good	Excellent	
Rating	0 - 19	20 - 39	40 - 59	60 - 79	80 - 100	Total
Number	19	68	265	852	2112	3316
Percent	0.5%	2%	8%	26%	63.5%	100%

Bridge Maintenance

The type and amount of bridge maintenance required varies by the original design and the results of the most recent inspection report. Modern pre-cast concrete girder bridges may need only minor deck cleaning and guardrail maintenance for several years after construction. On the other hand, older steel truss bridges may need rust removal and painting on a more frequent basis. Even with a design life of 50 to 75 years, the bi-annual inspections identify major maintenance needs as bridges age. While the “average” Washington county is responsible for about 85 bridges greater than 20 feet, the number varies from more than 300 in Yakima County to none in Island County. With a state-wide estimated replacement cost in excess of \$2.5 billion, the costs to maintain current county bridges are very necessary and worthwhile investments. County bridge maintenance is budgeted and paid for from county road fund revenues.

Bridge Rehabilitation and Replacement

There comes a time when a bridge has simply worn out, and must undergo major rehabilitation or be replaced. Securing funding for these major expenses can be challenging. The federal Highway Bridge Replacement and Rehabilitation Program (HBRRP) plays a major role in providing funding for replacement and rehabilitation. However, these funds are limited, and grants are awarded on a competitive basis. In Washington State, the Bridge Advisory Committee (BAC), comprised of WSDOT and local agency representatives, reviews local agency candidate bridges for the limited federal funds. Even if a project is awarded a grant, it is usually for only 80% of the eligible project cost. This leaves the local agency responsible for 20% of the bridge replacement cost, as well as a portion of the roadway approach costs on most projects. Bridge projects in urban areas may compete for matching funds from the Transportation Improvement Board, and matching funds for some rural bridge projects may be available from the County Road Administration Board.

Besides challenges in securing funding, bridge replacement projects are also subject to a myriad of state and federal permitting requirements. An Environmental Impact Statement is usually required as part of the process. Among the agencies with project review and approval responsibilities are the U.S Army Corps of Engineers, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, and the local Shorelines Management Act. These agencies may impose project requirements pertaining to “fish windows” (limitations

when equipment may work within the waterway), fish habitat restoration, storm water runoff control and treatment and other issues. If an existing bridge has been designated as an historic structure, the Washington Department of Archaeology and Historic Preservation may play a role in approving plans to rehabilitate or replace the structure.

New Bridges

Securing funding and approvals for a new bridge on a new route or a new bridge to expand capacity on an existing route involves all the issues noted above. Additional funding alternatives may include traffic impact fees, formation of a road improvement district or local improvement district, developer contributions, and general obligation or revenue bonds.

SOUTH PARK BRIDGE – KING COUNTY – PROJECT NARRATIVE

The project involved constructing a new moveable span bridge over the Duwamish River along the 14th/16th Avenue South corridor, and removing the existing South Park Bridge. The new bridge restored an important transportation link serving residents and businesses in the South Park community and freight mobility for the Duwamish Industrial Corridor. The project also improved storm water quality, restored riverbank habitat, realigned intersection geometry, improved roadway and safety upgrades in the South Park business area, relocated utilities, constructed a rain garden with natural water treatment, incorporated historic and art elements into new structure, and installed decorative luminaires for street lights and bridge lighting as well as provided a substantial new social amenity for the community.

The South Park Bridge Replacement Project's goal was to design a moveable bridge that would be open to traffic immediately after a minor earthquake and be closed to traffic for a short time for repairs after a major earthquake. King County DOT and their design consultant, HNTB, achieved this goal by developing innovative design concepts such as the sunken caisson foundations, isolated trunnion frame and a collapsible center joint on the lift spans. These solutions not only proved to be economical but also enhanced seismic performance relative to the original purposed group of drilled shafts.

In addition, the South Park Bridge is a first-of-its-kind trussed plate girder design, created to reduce maintenance and ensure the structure's longevity. As a result, the traveling public received a reliable, 100-year-life bridge, designed and built with the ability to survive a major seismic event with minimal damage.

The new South Park Bascule Bridge is more than a bridge; it is a community's lifeline. It reconnects residents and businesses on both sides of the river, improves freight mobility and provides better regional access to downtown Seattle and the adjacent industrial area. The public can cross the bridge safely - whether driving, cycling or walking - with standard vehicle lane widths, delineated bike lanes in both directions and barrier-separated sidewalks.

The South Park community can take pride in a landmark drawbridge that is safe, preserves the art and historical features of the original bridge and improves the marine and land environment of the surrounding areas.

Funding

Total project budget is \$178 million; this amount includes environmental, design, right-of-way, construction of the new bridge and demolition of the existing bridge, and closeout phases. The following funding partners included:

- King County – \$56.5 million
- Transportation Investments Generating Economic Recovery (TIGER II) – \$34 million
- Washington State Department of Transportation/Federal bridge funds – \$20 million
- Puget Sound Regional Council – \$15 million
- Surface Transportation Program – \$13 million
- Transportation Improvement Board (TIB) – \$10 million
- Freight Mobility Strategic Investment Board – \$5 million
- City of Seattle – \$15 million
- Port of Seattle – \$5 million
- City of Tukwila – \$3 million
- The Boeing Company – \$1.5 million in real estate

Schedule

- Construction started: May 24, 2011
- Open to traffic: June 30, 2014



CANYON B BRIDGE – DOUGLAS COUNTY – PROJECT NARRATIVE

The Canyon B Bridge was one of eight contracts administered by Douglas County that was funded by the Washington State Legislature in 2005 through a 9.5 cent MVFT. These projects were part of the first phase of the preferred alternative selected as part of the Washington State Department of Transportation’s (WSDOT) SR 28 (Sunset Highway) Eastside Corridor Project Environmental Impact Statement (EIS). The EIS paved the way for the funding, design, and construction of this regionally significant transportation improvement project.

The Canyon B Bridge is located at the northern end of the East Wenatchee bench and approximately 1 mile southeast of the US 2/97 intersection. The bridge is 597 feet long and routes Eastmont Avenue across Canyon B. It consists of a 250-foot concrete arch with five equal spans of WSDOT standard W58G girders. Approaches to the arch consist of 112-foot and 100-foot girder spans on the north, and 100-foot and 35-foot girder spans on the south. A seven-girder system and 9-inch concrete deck provide a 50-foot roadway cross section. A 6-foot pedestrian sidewalk was constructed on the east side of the bridge and concrete barriers with railing were constructed on both sides of the bridge.

The structural and civil elements of the bridge were designed by HDR and Douglas County respectively. The bridge was constructed between August of 2010 and May of 2012 by Cascade Bridge of Vancouver, Washington. for a total contract cost of \$6,164,195.63.

The construction of the Canyon B Bridge allowed for the extension of Eastmont Avenue from Badger Mountain Road to the SR2/97 intersection. The completed corridor has benefited the community and traveling public by providing an additional north-south arterial connecting the northern and southern ends of the Wenatchee valley. This has increased transportation capacities throughout the Wenatchee valley by reducing the number of vehicles on other congested roadways. The new roadway has markedly improved access to the Fancher Heights area and improved emergency services response times and contingencies. Finally, as envisioned by the SR 28 Eastside Corridor project, completion of the arterial has reduced traffic loads on SR 28. This will facilitate construction of Stages 2 through 8 of the Eastside Corridor project by reducing traffic loads on the highway and providing better detour opportunities.



