



Washington State
County Road Administration Board

2011 Annual Report

Prepared for the
Legislative Transportation Committee and
the Washington State Transportation Commission



January 1, 2012

The Honorable Mary Margaret Haugen
Washington State Senator
Chair, Senate Transportation Committee

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

Dear Senator Haugen and Representative Clibborn:

In accordance with requirement of law, the Washington State County Road Administration Board presents to the legislature this report of the activities of this agency for the year 2011. CRAB staff continues to promote excellence in engineering, information technology and grants administration among the counties of the state. We believe the contents of this report accurately indicate the effectiveness of that effort.

The Board and its staff remain committed 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 and to the people of this state the assurance that these counties' operations remain accountable for their stewardship of public assets and public trust.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Dean D. Burton".

Commissioner Dean Burton, CRABoard Chairman

A handwritten signature in black ink, appearing to read "Jay P. Weber".

Jay P. Weber, Executive Director

County Road Administration Board

<u>CRABoard Members</u>	<u>Term Expires</u>
Chairman Dean Burton, Garfield County Commissioner	2013
Vice-Chairman Brian Stacy, P.E., Pierce County Engineer	2012
Second Vice-Chair Ray Thayer, Klickitat County Commissioner	2014
Bob Koch, Franklin County Commissioner	2012
John Koster, Snohomish County Council Member	2012
Dale Snyder, Douglas County Commissioner	2013
Derek Pohle, P.E., Grant County Engineer	2013
Andrew Woods, P.E., Columbia County Engineer	2014
Mike Leita, Yakima County Commissioner	2014

County Road Administration Board Staff

Executive Director	Jay Weber
Executive Assistant Administration	Karen Pendleton Toni Cox, Engineering Technician Rhonda Mayner, Secretary
Deputy Director Engineering	Walter Olsen, P.E. Jeff Monsen, P.E., Intergovernmental Policy Manager Randy Hart, P.E., Grant Programs Manager Don Zimmer, Road Systems Inventory Manager Larry Pearson, P.E., Maintenance Programs Manager Bob Moorhead, P.E., Compliance & Data Analysis Manager
Assistant Director Technology	Steven Hillesland Bob Davis, IT Systems Manager Jim Ayres, P.E., Design Systems Engineer Jim Oyler, Support Specialist Kathy O'Shea, Database Development Specialist Eric Hagenlock, Applications Specialist

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From the Executive Director

A quick outside look at CRAB's two major grant programs, the Rural Arterial Program (RAP) and the County Arterial Preservation Program (CAPP) would lead to the impression that RAP is used only for construction or reconstruction and that CAPP is aimed at preservation. While it is true that CAPP is reserved solely for preservation activities, it is not true that RAP is used only for construction activities. The governing statutes of the Rural Arterial Program quite plainly direct the funds within the Rural Arterial Trust Account to be used for "construction and improvement of county rural arterials and collectors". (RCW 36.79.020)

In its early years, RAP was predominantly a construction grant program responding to the emergent issue of the transfer of freight tonnage from abandoned rail lines to trucks within the rural areas of the state. RAP proved to be a strategically important means by which many county roads, not engineered or constructed to carry this heavy freight impact, could step up to this new demand which was placed upon them. In the years since rail abandonment, the increase in tonnage has been largely accomplished, and the need began to transition from the construction of the roads necessary to carry the freight, to the need to properly maintain and preserve the arterial system. The emphasis of RAP has shifted to anticipate and address this growing and continuing need of preservation.

While the need for road construction funding has by no means diminished, the demand for preservation projects has grown to meet and exceed the dollar amount targeted for construction. In the 2005-2007 biennium, nearly one-third of RAP dollars were obligated to preservation projects. The 2007-2009 biennium saw preservation projects grow to over thirty-eight percent of the program total. The 2009-2011 biennium was the first time preservation project obligation achieved more than half the total obligation of RAP, totaling 53.27% of total program. We expect the emphasis on preservation projects within RAP to continue and grow given the adoption of new WAC rules which allow them to compete in all RAP regions of the state.

This trend, which has occurred over a number of years, clearly indicates that RAP remains responsive not only to the original need it was created to meet, but is also flexible enough to accommodate the changing needs of the counties within current statutory language. Further, it demonstrates that as counties husband scarce resources through difficult economic times, RAP remains an important means of preserving the existing surface transportation system until such time as new funding becomes available to them.

From its inception, all of CAPP has been directed toward preservation costs. Now, more than half of the RAP program is funding preservation projects in full support of the state's number one priority of preserving the existing investment in our transportation infrastructure.

From the Executive Director

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Engineering Services

The Engineering Services Division, under the direction of Deputy Director Walt Olsen, includes Intergovernmental Policy Manager Jeff Monsen, Compliance and Data Analysis Manager Bob Moorhead, Maintenance Program Manager Larry Pearson, Grant Programs Manager Randy Hart, and Road Systems Inventory Manager Don Zimmer. This small staff, most of whom hold Professional Engineer licenses, is directly responsible for the following functions:

- Functions related to the administration of the Rural Arterial Program, the County Arterial Preservation Program, and the County Ferry Capital Improvement Program;
- Functions related to the 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;
- 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 Highways and Local Programs (H&LP) 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.

A final responsibility of the Engineering Services Division is the maintenance and updating of summary reports, guidance materials, and model documents, and the provision of training to County Engineers and their staffs.

Areas the Engineering Staff worked on extensively in 2011:

- With increased legislative attention on the balance of the Rural Arterial Trust Account (RATA), CRAB staff began efforts to advance projects to construction in less time and spend down the RATA balance. These efforts began in February 2010 by initiating an internal staff review and brainstorming sessions during the next three months and introducing the issue for review by the counties and the RAP regions.

CRAB Staff updated the CRABoard at the July 2010 board meeting in Olympia and an ad-hoc committee of WSACE members was established. The ad-hoc committee met three times over the summer and a final draft of Washington Administrative Code (WAC) revisions was presented to the CRABoard at the October 2010 meeting. Staff then initiated the formal WAC amendment process with an open public comment period and set a hearing date for the January 2011 CRABoard meeting. After discussion, the Board passed the final WAC revisions and directed staff to implement the following major changes:

- 136-130: Regional Prioritization of RAP projects: Define five project types: Reconstruction; 3R-Resurfacing, Restoration and Rehabilitation; 2R-Resurfacing and Restoration; Intersection; Bridge and Drainage Structures. Outline “Supplemental rules” for each region. Delete regional ranking point systems from the WACs and replace with priority rating procedures developed by each RAP region with the approval of the Executive Director.
- 136-161: Project submittal, selection, and initial allocation of RATA funds to projects: For distribution of funds to regions by the CRABoard, allow the CRABoard to distribute the funds by project types designated by the regions. Require that Preliminary Engineering begin within one year of project selection (changed from two years) and Construction begin within six years (unchanged) of project selection. Permit CRABoard to increase RATA allocations to counties in those cases where certain counties may not be eligible to apply for funding, or chose not to apply.
- 136-165: Increased allocations of RATA funds to projects: Limit the opportunity to request an increase to one time, at the completion of Preliminary Engineering and prior to the start of Construction. Change the maximum increase in RATA funds from 50% to 25% of the original RATA funds approved. Make all increases subject to CRABoard approval. Clarify that the executed RAP Contract must be returned to the CRAB office within 45 calendar days of the mailing date from the CRAB office. Allow a funded project to be resubmitted for a higher level of funding in a future program without requiring the existing project to be withdrawn.
- 136-167: Withdrawals, early termination, and lapsing of approved projects: Change lapsing times for projects. Require preliminary engineering to begin within one year of project approval. Increase the standard for approval of a two-year extension of the construction lapsing date. Allow up to 5% or \$75,000 of the RATA grant amount to be retained by the County for early Preliminary Engineering costs if the project is withdrawn. Removed the sentence at the end of first paragraph “This provision will only apply to those projects for which RATA funds have been allocated after July 1, 1995.”
- 136-170: Execution of a CRAB/county contract: Correct a reference to “Day Labor” to “Construction by County Forces.” Clarify language regarding “splitting” projects; and add language regarding “phasing” projects. Two sentences added in WAC 136-170-030, section (3) immediately before (a) – “Review the Rural Arterial Program in light of legislative budget discussions pertaining to desired improvements to the RAP funding program. The proposed changes improve the effectiveness of the RAP funding program by promoting the expansion of project types and providing clearer guidance for project development and completion.”

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- CRAB continues to provide County Engineer/Public Works Director training, conducting sessions May 10-12 and December 6-8, 2011, at the CRAB office, totaling over 400 person hours. The training is constantly revised to reflect the ever-changing climate of engineering, social, political, and environmental concerns. These intense sessions review the duties and responsibilities of the counties and the County Engineer. Another aspect of this training has been developed to allow modules of this training package be provided directly to a county or gathering of multiple counties at their site, and customized for their specific needs. Four of these customized sessions were conducted during 2011, one each in Chelan County and Skamania, and two in Whatcom County, totaling over 350 person hours.
 - For many years, 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' Manual which contains guidance on a variety of technical and administrative issues affecting county engineering functions. Following more than a year in development, a major revision to this document was released in November 2010 with two updates released during 2011.

In addition to continued use as a hardcopy reference notebook, the design of the new Manual takes advantage of current internet technology through inclusion of over 1,500 internet "hotlinks" embedded within the document's text. While the revised Manual may contain less written detail on most topics, and is only half the number of pages from the previous version, the total number of topics covered has been 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 to the user.

- In February of 2010, Spokane County prepared a proposal for a maintenance performance audit. The expressed goal of this audit was..."to confirm that funds expended for all maintenance activities on County Roads are being utilized in the best way possible." For assistance in reviewing Road Division operations, Spokane County contacted the County Road Administration Board (CRAB). The Board of County Commissioners, together with the County Engineer, was interested in substantiating that the Road Division was providing an acceptable level of service and asked if CRAB would consider undertaking a performance audit for the County. Using a draft scope of work for the performance audit as the basis for discussion, Spokane County met with CRAB in June of 2010 to discuss details of how the maintenance performance review would be conducted. CRAB proposed that a detailed review of the maintenance management standard of good practice (Washington Administrative Code 136-11) would provide a consistent review of maintenance practices in the Road Division and would address most of the questions posed in the draft scope of work for the maintenance performance audit. From such a review, the County could address:
 - Conformance to the maintenance management standard of good practice
 - The desire to confirm efficient and effective use of maintenance resources
 - Plans for improving management of maintenance operations to realize accountability

The review of Spokane County's maintenance operations was conducted in the specific areas of the standard of good practice (WAC 136-11). Under each area, the specific documentation supporting conformance to the standard of good practice was reviewed and compiled. Missing or incomplete documentation or procedures were noted and a guideline for improving the

documentation or procedures was prepared. The objective was to demonstrate Spokane County's conformance with the standard of good practice and provide a guide for improvement, if necessary. This review includes the following:

- An inventory of significant maintenance features (physical assets), as determined by the county shall be maintained.
- Maintenance management is based upon work activities. Work activity guidelines shall be defined, by each county, for the significant activities representing the maintenance work to be performed. Definitions shall include an activity code, title, description, work unit, and inventory unit.
- An annual work program and budget shall be prepared. The activity-based work program and budget shall summarize the kinds and amounts of work planned and the costs of the planned work.
- The resources needed to accomplish the annual work program shall be documented.
- Work scheduling procedures shall be documented.
- Work accomplishment and expenditure shall be monitored.

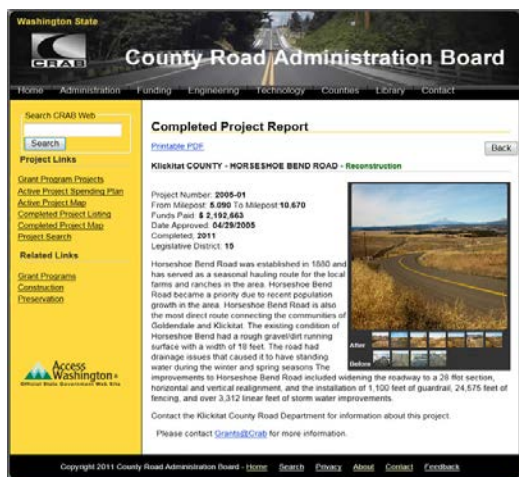
The final report was published in September 2011 with the following recommendations:

- Include the following items in inventory of maintained assets: Guardrail, Culverts, and Ditches. Benefit: Adding these inventory items will increase the understanding of the scope of the maintenance activities dealing with these assets and will increase the understanding of the impact that budgeted dollars have on the entire County.
- Continually update activity guidelines with input from District Supervisors: There are several activities that show wide variation between districts in their application. Benefit: Coordination with the districts will increase the understanding of the system and the uniform delivery of services.
- Utilize standard production and cost estimates from the Activity Guidelines in the budgeting process: Benefit: This will provide a common basis for budgeting countywide as well as provide feedback performance for the Activity Guidelines.
- Improve documentation of productivity: Review of MMS information indicated a lack of consistency in the reporting of productivity information. While the recording and reporting of costs for all activities is very complete, there are many activities where production tracking is inconsistent. Benefit: Complete and accurate production information allows for reporting of annual accomplishment and comparison to the annual work plan.
- Standardized reporting of work plan and accomplishments: Currently the reporting out of MMS is tailored to work crew and production management. Standardized Executive reports showing annual plan, annual accomplishment, and the history of cost effectiveness should be developed. Benefit: These reports will tell the story of maintenance activities in a manner that provides an overview and answers many of the questions forwarded by the Board of County Commissioners.

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. Two primary goals of the IT team are the continued smooth and efficient operation of this agency and ensuring that Washington's counties continue to effectively apply current and emerging technology. The first goal was accomplished by providing a progressive, stable and secure computing environment for agency staff. Developing and providing software, training and consulting services specific to the needs of county road departments in Washington accomplished the second goal. 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 both staff and our counties. In 2011 the Information Services team again made significant, unique and creative contributions to the initiatives of CRAB staff and to the design and management efforts of Washington counties. The following paragraphs illustrate some of the benefits and efficiencies provided by CRAB Information Services this past year.

A significant part of our IT effort this year was devoted to improving CRAB's ability to better manage our funding programs. Construction, preservation and maintenance in our counties is a challenge but not,



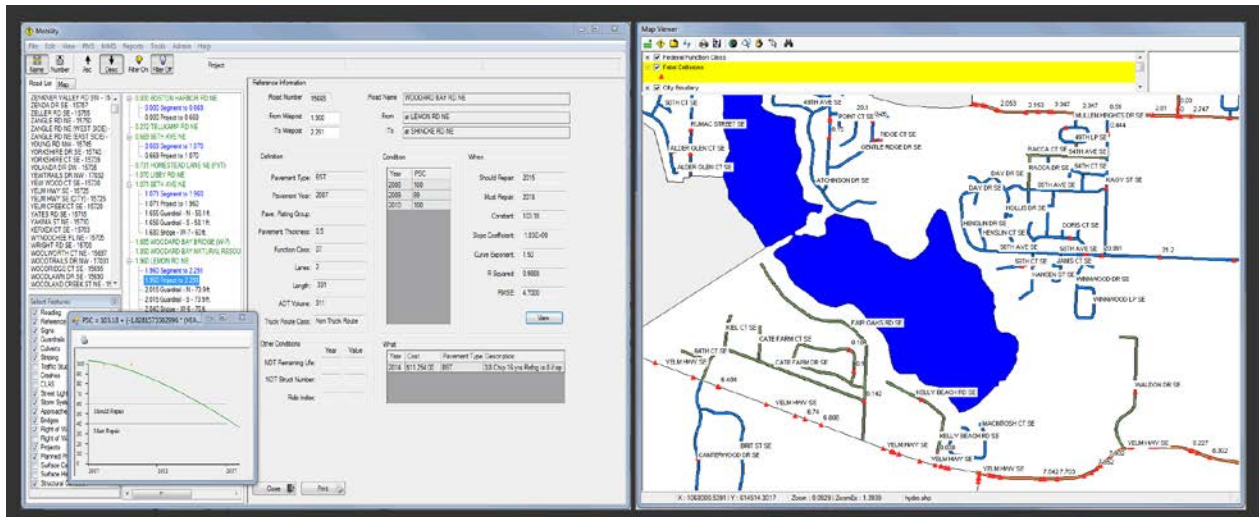
as many would imagine, because the work on the ground is the most difficult. The real challenge is bringing together all the players and stakeholders just before these inherently complex projects should begin. This means securing funding from multiple sources with uncertain revenue forecasts and negotiating with property owners, regulatory agencies and many others. It is not unusual, because of these various delays, for a project to be eight years in planning and then only a few months in construction. As a first-in project funding source, CRAB's RAP projects often necessarily need to dedicate funds for a longer period than other funding sources. That is where the IT work on Project Portfolio Management (PPM) is critical to effectively manage those funds. Several

proven PPM methods incorporated into our manager to quickly analyze up-to-date project information from multiple sources and adjust program spending as necessary. This in turn gives counties immediate updates so that project managers can adjust schedules either moving projects forward or back as the situation demands or allows. Our PPM applications also provide project and spending data to the CRAB website so that anyone from a legislator to a citizen can be kept up-to-date and make more informed decisions. Please visit the Grant Projects Link on the CRAB Website to view information on the RAP spending plan and a wide variety of information about active and completed projects.

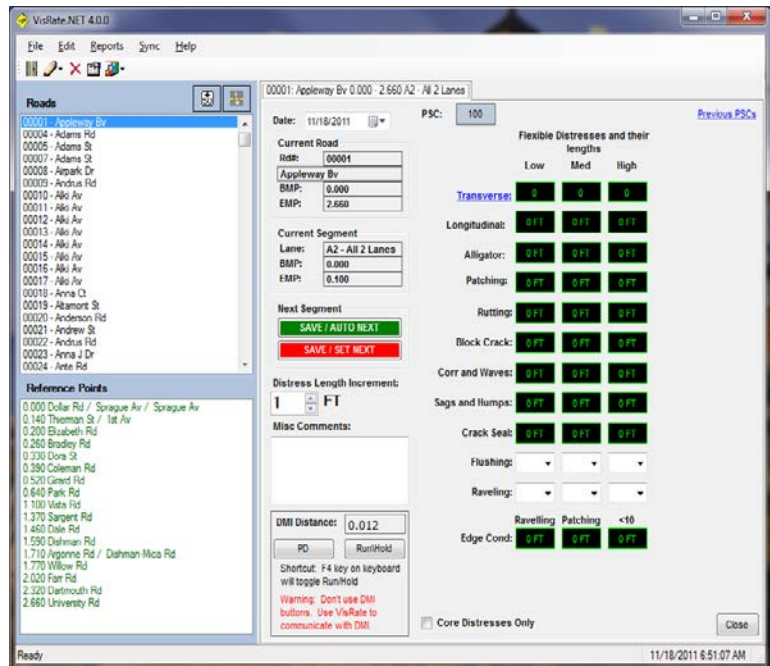
The screenshot shows a web application window with a table titled 'Planned Spending of Remaining RATA Balances for Each Biennium'. The table lists various counties and projects with their respective spending plans for the 2011-2013 biennium. The table includes columns for County, Leg Dist, Project Name, Project# Truck Class, and spending amounts for 2011-2012, 2012-2013, 2013-2014, 2014-2015, and Total Funds.

County	Leg Dist	Project Name	Project#	Truck Class	2011-2012	2012-2013	2013-2014	2014-2015	Total Funds
Adams	9	DANEGAS ROAD	0109-01	T4	\$ 483,972	\$ 1,903,700	\$ 0	\$ 0	\$ 2,387,672
Adams	9	LEWIS HATTISON RD	0107-01	T4	\$ 2,086,339	\$ 0	\$ 0	\$ 0	\$ 2,086,339
Asotin	9	SHAKE RIVER ROAD	0205-03	T4	\$ 2,407,729	\$ 1,015,479	\$ 0	\$ 0	\$ 3,423,208
Asotin	16	SHAKE RIVER ROAD	0203-01	T3	\$ 316,124	\$ 0	\$ 0	\$ 0	\$ 316,124
Benton	15	CLOUD ELLER - LOCUST GROVE RD	0303-01	T4	\$ 1,688,014	\$ 0	\$ 0	\$ 0	\$ 1,688,014
Benton	16	NINE CANYON ROAD	0307-01	T4	\$ 1,631,860	\$ 680,000	\$ 0	\$ 0	\$ 2,311,860
Benton	16	NINE CANYON ROAD 2	0309-01	T4	\$ 310,416	\$ 1,281,583	\$ 915,417	\$ 0	\$ 2,507,416
Chelan	12	EAGLE CREEK ROAD	0403-01	T5	\$ 734,936	\$ 0	\$ 0	\$ 0	\$ 734,936
Chelan	12	UPPER SOUL CHUCK ROAD	0409-01	T4	\$ 2,760,863	\$ 0	\$ 0	\$ 0	\$ 2,760,863
Clallam	24	OLD OLYMPIC HWY	0505-01	T3	\$ 995,000	\$ 0	\$ 0	\$ 0	\$ 995,000
Clark	18	NW PACIFIC HWY	0608-01	T3	\$ 402,178	\$ 731,442	\$ 1,645,516	\$ 0	\$ 2,779,136
Columbia	16	MULLOGG HOLLOW ROAD	0704-01	T4	\$ 1,276,000	\$ 0	\$ 0	\$ 0	\$ 1,276,000
Columbia	16	LYONS FERRY ROAD	0709-01	T4	\$ 309,859	\$ 887,142	\$ 0	\$ 0	\$ 1,197,001
Columbia	16	SOUTH TOUCHET ROAD	0710-01	T4	\$ 100,000	\$ 825,000	\$ 825,000	\$ 0	\$ 1,750,000
Columbia	16	TUCANNON ROAD	0707-01	T5	\$ 1,178,472	\$ 0	\$ 0	\$ 0	\$ 1,178,472
Cowlitz	19	HAZEL DELL ROAD	0809-01	T4	\$ 100,000	\$ 900,000	\$ 0	\$ 0	\$ 1,000,000
Cowlitz	18	SOUTH SILVER LAKE ROAD	0806-01	T4	\$ 622,625	\$ 0	\$ 0	\$ 0	\$ 622,625
Douglas	12	MCGINNIS CANYON ROAD	0909-01	T5	\$ 2,846,100	\$ 0	\$ 0	\$ 0	\$ 2,846,100
Ferry	7	BRIDGE CREEK RD	1009-02	T3	\$ 500,000	\$ 1,300,000	\$ 0	\$ 0	\$ 1,800,000

CRAB Information Services developed and provides Washington counties with a comprehensive transportation asset management system named *Mobility@*, which enhances a county's ability to make quality decisions through consistent, equitable, and defensible management plans and operations. The systematic application of sound business logic, embedded in *Mobility*, ensures accountability in county road departments and assists county personnel in their compliance with reporting requirements to CRAB, the State Legislature, and federal entities. *Mobility* is a prime example of the economy-of-scale for which CRAB is well known, in that it saves the counties from spending millions on management systems that are neither as responsive to, nor as specific to their needs as *Mobility*.

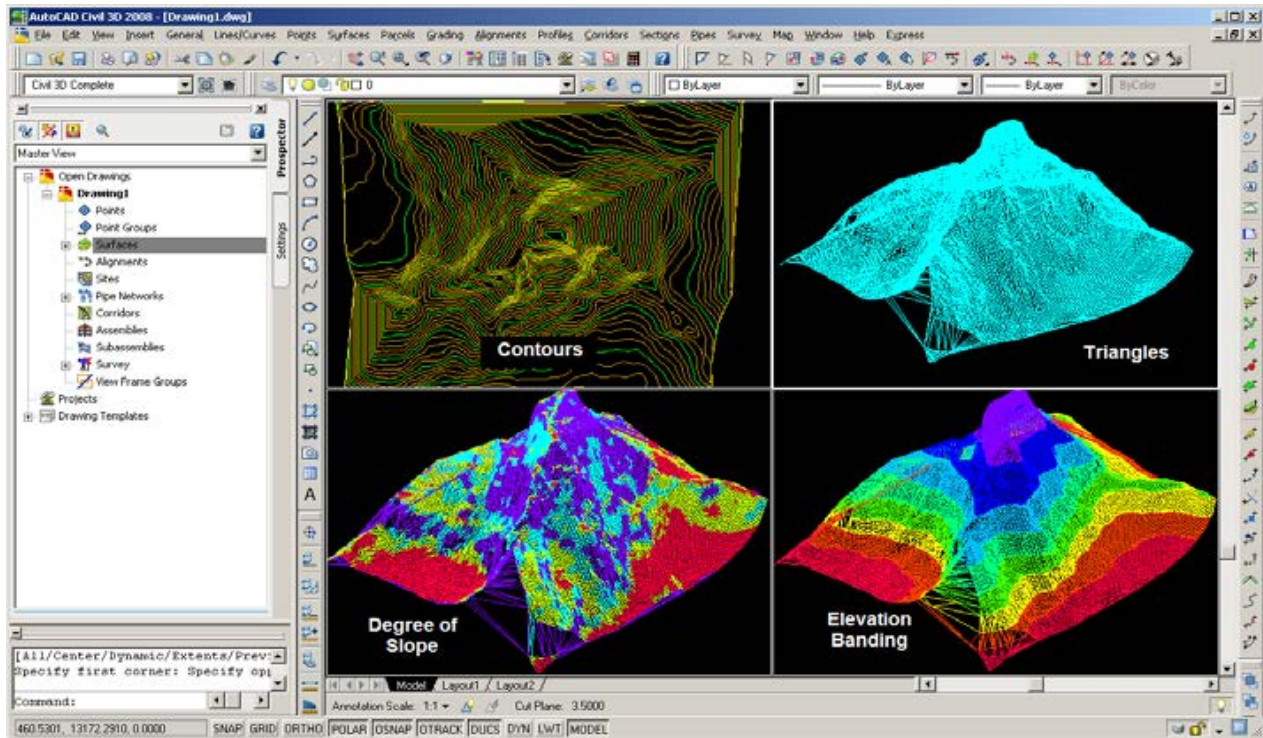


This year CRAB IT staff was able to enhance the functionality and usability of *Mobility* for the benefit of Washington county staff. *VisRate* is a CRAB application which enables counties to easily collect road condition data in the field and rapidly share it with office staff for reporting and analysis in the *Mobility* Pavement Management System. *VisRate* is effectively used by over 33 counties. Columbia County recently stated that, in their county alone, *VisRate* has reduced the time to collect pavement ratings from two months down to two weeks each year. Other counties have heralded the *Mobility* mapping tool as continually saving weeks of effort in coordination with their GIS department.



The CRAB Design Systems Program has consistently provided Washington county personnel with state-of-the-art engineering road design software including support and training since 1985. This program has enabled county design staff to effectively collect, develop and manipulate the geometric information necessary for site design and construction planning, which has contained costs and improved

productivity throughout the life of road projects. Currently CRAB provides road design software named *Eagle Point*®, free of charge, to Washington counties. CRAB also provides world-class consultation, support and training for both *Eagle Point* and another industry leader named *AutoDesk Civil 3D*®. In addition to improved design and project savings, the savings to counties for user licensing, support, and training in design software by CRAB is hundreds of thousands of dollars each year.



Through CRAB support our county designers maintain a sophistication and competence which enables multiple forms of analysis of surface models in 3D that allows a more realistic geometric representation of the project area, volumes involved, and quantities to be moved, and promotes better design. A specific efficiency for 2011 is the CRAB-developed "Styles" file, a necessary starting point for the hundreds of users of the *AutoDesk Civil 3D* design software in 31 Washington counties. This results in savings of \$4,000 to \$6,000 per county. Training classes are continuously provided to county design staff at CRAB or in their county for a savings of at least \$1,295 per student. Other savings and increased competence are accomplished through a county's use of the Design Systems Program website, the design forum, and the annual Road Design Conference.

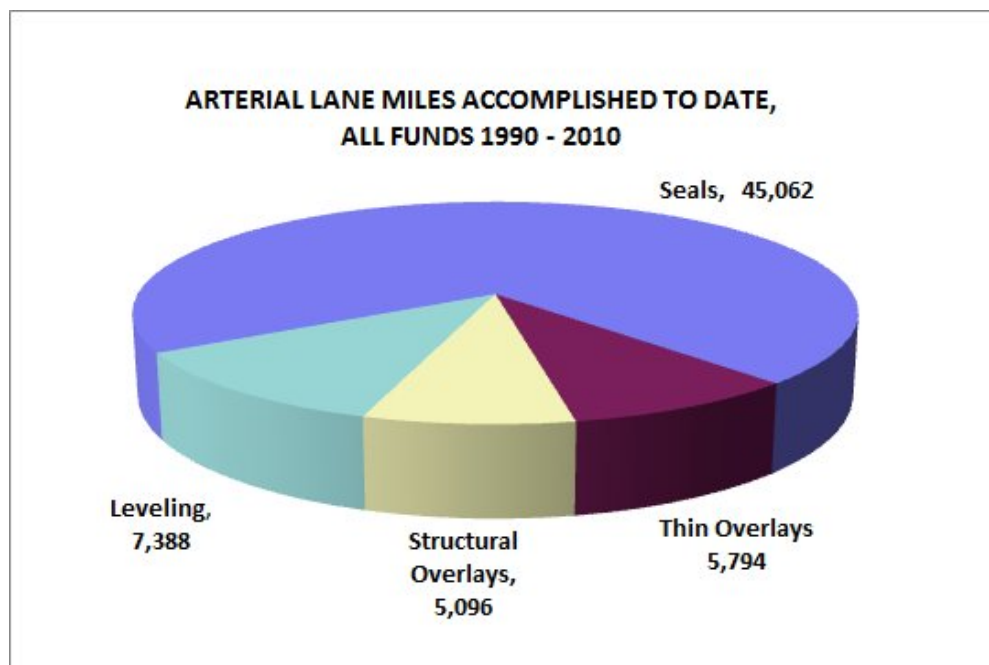
The CRAB website effectively responds to citizens and government, informing and educating users in the initiatives of CRAB and the Counties. County personnel can find critical assistance for the effective operation and management of their road systems and assistance in compliance with law and regulation, along with schedules and forms necessary to that compliance. Citizens can find great detail on their county's road system, its road department, that department's funding, operations, construction and maintenance. Legislators can observe the breadth and detail of the accountability ensured by CRAB, as well as the good road work being done in their district. Please take time to visit this site at <http://www.crab.wa.gov> where you can learn much more about CRAB and the counties. After touring the general site you may want to spend some time perusing a wealth of active road project information under the Grant Programs tab or the massive amount of information under the Reference tab in the Library section.

Grant Programs

County Arterial Preservation Program (CAPP)

The CAPP was created by the Washington State Legislature in 1990, and distributes 0.45 cents per gallon of the statewide gas tax into the County Arterial Preservation Account (CAPA). The CAPP provides \$16,000,000 to counties annually. In order to be eligible for these funds each county must:

- Employ a qualified “Pavement Management System” (PMS) to assure the CAPA funds are used effectively.
- Publish to the CRABoard each county’s annual program for use of CAPA funds, to ensure eligible work on eligible arterial roads.
- Report to the CRABoard the actual preservation accomplishments of the previous year.



In the early years of CAP, counties were able to resurface more than 12% of their 12,300 arterial/collector centerline miles each year with the assistance of this program. This percentage has been in decline, and has dropped to a low of 7% in the past year. This decline is due to increases in the cost of asphalt products and related work, added costs resulting from continued growth in traffic volumes, and recent declines in revenue due to the combination of fuel prices and fuel efficiency.

Rural Arterial Program (RAP)

Rural Arterial Trust Account (RATA) funds are awarded to county projects based on the criteria listed in statute (RCW 36.79), namely:

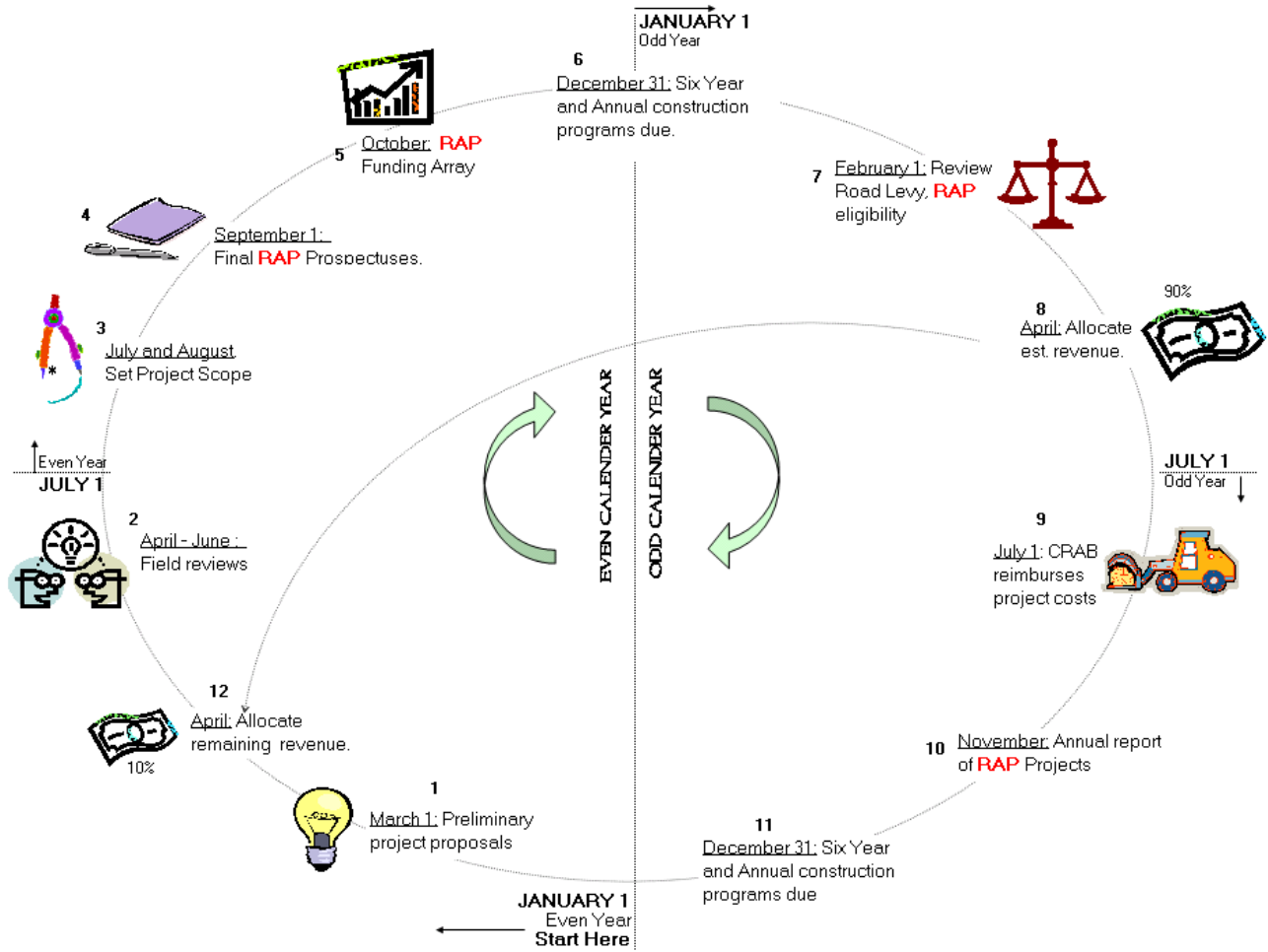
- (1) Structural ability to carry loads imposed upon it;
- (2) Capacity to move traffic at reasonable speeds;
- (3) Adequacy of alignment and related geometrics;
- (4) Accident experience; and
- (5) Fatal accident experience

RAP funds address the neediest county arterial roads in the state. Rural farm-to-market and commuter roads are usually the highest in priority due to high truck counts, traffic volumes and unsafe geometry. The RATA portion of the statewide fuel tax is 0.58 cents and provides approximately \$19,000,000 annually.

RURAL ARTERIAL PROGRAM EXPENDITURES BY COUNTY AND LEGISLATIVE DISTRICT IN 2010

COUNTY	LEG DIST	RATA \$'s RECEIVED	COUNTY	LEG DIST	RATA \$'s RECEIVED
Adams	9	632,787	Lewis	18	2,511
Asotin	9	102,559	Lewis	20	13,090
Asotin	16	204,690	Lincoln	7	766,765
Benton	8	38,613	Mason	35	502,920
Benton	15	54,040	Okanogan	12	701,553
Benton	16	12,176	Pacific	19	843,736
Chelan	12	1,222,219	Pierce	2	55,098
Clallam	24	122,749	Pierce	26	133,431
Clark	18	14,111	Pierce	31	44,921
Columbia	16	76,629	San Juan	40	236,361
Cowlitz	18	1,225,581	Skagit	40	28,474
Cowlitz	19	401,389	Skamania	15	352,350
Douglas	12	138,647	Snohomish	39	83,578
Ferry	7	218,717	Spokane	4	175,860
Franklin	9	638,084	Stevens	7	102,041
Franklin	16	110,505	Thurston	2	19,741
Garfield	9	165,341	Thurston	20	71,255
Grant	13	490,086	Thurston	22	56,474
Grays Harbor	19	31,365	Thurston	35	26,568
Grays Harbor	24	1,392,085	Wahkiakum	19	36,732
Island	10	528,268	Walla Walla	16	760,400
Jefferson	24	172,920	Whatcom	42	262,851
Kitsap	23	750,000	Whitman	9	1,300,729
Kittitas	13	168,167	Yakima	13	643,501
Klickitat	15	677,967	Yakima	15	907,874
			TOTAL		17,718,508

RURAL ARTERIAL PROGRAM BIENNIUM CYCLE



History of RATA fund Usage per County (As of 11/2011)

<u>REGION</u>	<u>COUNTY</u>	<u>TOTAL RATA APPROVED</u>	<u>TOTAL RATA SPENT</u>	<u>% SPENT</u>
NE	ADAMS	18,947,884	13,744,909	73%
NE	CHELAN	20,087,900	15,879,699	79%
NE	DOUGLAS	21,696,535	18,576,220	86%
NE	FERRY	18,210,230	12,227,583	67%
NE	GRANT	24,559,268	22,544,097	92%
NE	LINCOLN	21,653,720	19,156,768	88%
NE	OKANOGAN	19,788,382	12,523,141	63%
NE	PEND OREILLE	18,083,578	12,247,880	68%
NE	SPOKANE	29,166,191	21,076,768	72%
NE	STEVENS	25,063,785	16,671,431	67%
NE	WHITMAN	<u>22,449,612</u>	<u>17,520,035</u>	78%
NE REGION TOTALS		239,707,085	182,168,530	
NW	CLALLAM	8,025,076	6,949,246	87%
NW	ISLAND	13,555,700	9,848,565	73%
NW	JEFFERSON	6,943,240	3,144,221	45%
NW	KITSAP	10,678,550	7,426,057	70%
NW	SAN JUAN	5,932,508	3,770,078	64%
NW	SKAGIT	7,438,733	4,933,904	66%
NW	WHATCOM	<u>10,932,182</u>	<u>9,172,808</u>	84%
NW REGION TOTALS		63,505,989	45,244,879	
PS	KING	13,180,107	10,140,171	77%
PS	PIERCE	14,383,396	9,883,791	69%
PS	SNOHOMISH	<u>10,931,971</u>	<u>9,046,511</u>	83%
PS REGION TOTALS		38,495,474	29,070,473	
SE	ASOTIN	12,404,811	9,211,803	74%
SE	BENTON	16,462,553	9,965,363	61%
SE	COLUMBIA	11,993,271	7,447,375	62%
SE	FRANKLIN	12,511,886	10,950,905	88%
SE	GARFIELD	11,897,743	11,478,326	96%
SE	KITTITAS	15,737,770	10,652,538	68%
SE	KLICKITAT	18,214,953	14,818,245	81%
SE	WALLA WALLA	15,479,590	13,650,001	88%
SE	YAKIMA	<u>20,127,291</u>	<u>14,533,040</u>	72%
SE REGION TOTALS		134,829,868	102,707,597	
SW	CLARK	9,413,718	8,052,763	86%
SW	COWLITZ	11,178,406	9,559,614	86%
SW	GRAYS HARBOR	13,279,248	11,641,982	88%
SW	LEWIS	8,982,446	5,159,237	57%
SW	MASON	12,720,031	7,652,926	60%
SW	PACIFIC	9,622,465	8,256,011	86%
SW	SKAMANIA	2,175,968	1,817,573	84%
SW	THURSTON	12,829,268	9,188,509	72%
SW	WAHKIACUM	<u>6,696,986</u>	<u>3,234,227</u>	48%
SW REGION TOTALS		86,898,536	64,562,842	
STATEWIDE TOTALS		563,436,952	423,754,320	75%

2010/2011 Grant Program Projects

Chelan County Accomplishes Safety Improvements on North Road

North Road is a rural major collector that is used by residents, tourists, and recreationalists. Agriculture from surrounding areas also has a large impact on the condition of the road. The City of Leavenworth recently built an Amtrak Station that has needed a safe and viable route for pedestrians, bicyclists and motorists to its facility. Due to these impacts, the road suffered a number of deficiencies. The road was narrow and the pavement was failing. The vertical clearance at the railroad bridge was a meager 13-feet and there was no safe route for pedestrians and bicyclists to pass under the railroad bridge due to poor sight distance. A culvert located at Chumstick Creek was considered a partial fish passage barrier to listed endangered and threatened species. This required additional efforts to maintain adequate fish passage. Residents have noted major enhancements to the area as a result of the improvements. The City of Leavenworth has also stated that the road project greatly improved access to their new station. Bicyclists and pedestrians are also finding easier passage along the route.



Before road improvement.



Now a smoother, safer crossing at the bridge.



The old intersection was not clearly marked.



The improvements to North Road access are obvious.

Clallam County Improves Another Section of Busy Old Olympic Highway

The Old Olympic Highway is a high speed major collector serving much of the region lying north of State Highway 101 in the Sequim area. The Old Olympic Highway extends 10 miles from Fairview to Sequim and, as such, it serves as a primary route of travel and the only alternative to US 101 for many local residents. The entire area was formerly agricultural but is developing into residential usage. Present trends indicate continued residential development. The road is part of school bus and mail routes and is used as a US 101 emergency bypass by WSDOT.



Contractor:
Jordan Excavating, Inc.
Port Angeles, WA
RATA Funds: **\$750,000**
Total Cost: **\$1,218,614**

This section of Old Olympic Highway was too narrow and in need of some intersection safety improvements.

The contracted work reconstructed the road to provide adequate sight distance and widened the road to 40 feet, which includes two 12 foot lanes and two 8 foot shoulders. The roadside slopes were flattened or protected with guardrail. Channelization was added at the intersection of Barr/Gunn Roads. Reconstruction of the base to modern standards appropriate for current and future ADT will allow this important road to serve the public in the decades to come.



Traffic moves safely through the intersection.

Coal Creek Road Reconstruction Project - Cowlitz County

Coal Creek Road is the main arterial connecting the Coal Creek and Eufaula Heights communities with the City of Longview. Castle Rock residents also travel up Coal Creek Road each day for a more direct



route home. The unimproved road was narrow and winding. Intersections with Harmony Drive and Bergly Lane had excessive skew and poor sight distance. Vehicles could not turn right onto these roads without crossing into opposing traffic. The Coal Creek Road Reconstruction Project provided 6-foot wide paved shoulders and realigned the intersections, for a great safety improvement. Widening Coal Creek Road was a difficult task; several houses are close to the road. Coal Creek parallels the road at the bottom of a steep slope. On the

other side of the road, the slope continues uphill for hundreds of feet. The final alignment threaded the needle, minimizing impacts to private property and the environment.

Several geotechnical issues were addressed by the project. A buttress landslide repair was reconstructed as part of the project. Slide movement occurred at the Coal Creek Road and Harmony Drive intersection during the heavy rain event of January 2009. As a preventative for future major sliding, horizontal drains were installed to stabilize the slope. This extra work was funded through the FHWA ER program.



Contractor:	Rotschy, Inc.
Total Project Cost:	\$2,358,000
RATA Funds:	\$541,063
Design Software:	AutoDesk Civil 3D

Kitsap County Constructs Cliffside Road Widening and Safety Improvements

With an ADT of 2,024 and a heavy truck ADT of 133 this segment of Cliffside Road clearly exhibited needs for many overall improvements. The RATA-funded project consisted of widening and resurfacing 0.57 miles of a rural minor collector roadway. One substandard horizontal curve and one substandard vertical curve were also improved. The widening effort produced 11 foot lanes with 4 foot paved shoulders.



Soft shoulders and narrow lanes were unfit for duty.

The alignment at the east end of the project was revised to make Cliffside Road the thru route to Hansville Road and Little Boston Road (the previous thru-route) a stop sign-controlled approach to Cliffside Road. Storm-water improvements consisted of enhanced collection and conveyance systems, installation of a detention tank with treatment vault, constructing compost amended vegetated filter strips and a detention pond to improve water quality.

Contractor: **Seton Construction**
RATA Funds: **\$750,000**
Total Cost: **\$1,340,455**



The improved Cliffside Road is up to the challenge.

RAP Funded Improvements on Klickitat County's Horseshoe Bend Road



The road in its previous narrow un-surfaced condition.

Horseshoe Bend Road was established in 1880 and has served as a seasonal hauling route for the local farms and ranches in the area. Horseshoe Bend Road is also the most direct route connecting the communities of Goldendale and Klickitat. The existing road was a rough gravel road varying in width from 18 to 24 feet. An upgrade to the road became a priority due to recent population growth in the area.

Klickitat County was granted \$2,536,000 in RATA funds to upgrade a 5.58 mile section of Horseshoe Bend Road. Klickitat County Public Works provided the design work and let the contract out to bid in April 2009. Tapani Underground, Inc. of Vancouver, WA was awarded the construction contract for \$1,136,142. The construction was completed December 2009. In September 2010 Central Washington Asphalt, Inc. of Moses Lake, WA placed the BST Surface. The improvements to Horseshoe Bend Road included widening the roadway to a 28 foot section, horizontal and vertical realignment, and installation of 1,100 feet of guardrail, 24,575 feet of fencing, and over 3,312 linear feet of drainage improvements.



Grading the road to support a wider stronger surface.



Now a wider paved road will hold up through many seasons.

Adams County Danekas Road Reconstruction Project #1

The Danekas Road Project #1 is located 3.2 miles northeast of Ritzville, WA. The project was scoped as a 3R project and involved grinding the existing pavement, replacing the base material with crushed surfacing, widening the shoulders, modifying side slopes, and surfacing with asphalt. Drainage facilities were replaced as well. The project widened the existing roadway from 22 foot of pavement to a 30 foot paved roadway. With CRAB's approval, Adams County chose to stage the project into 5 phases as follows:

- Phase #1 County Forces - Traffic control and grinding of existing pavement
- Phase #2 Competitive Bid - Roadway excavation, embankment work, and drainage.
- Phase #3 County Forces – Crushed surfacing construction.
- Phase #4 Competitive Bid - Placement of 3" asphalt surfacing
- Phase #5 County Forces - Hydro seeding the disturbed roadside areas.



Danekas Road before improvements



Now built to full width and surfacing standards.

A portion of the roadway was sub-excavated 2 feet in depth then replaced with geotextile fabric and light loose rip-rap to stabilize the subgrade in moist areas. Another portion of roadway was sub-excavated 6 inches in depth then replaced with geogrid subgrade fabric and crushed surfacing base course to provide stability. By doing the crushed surfacing work with County Forces the county was able to easily control its spreading and compaction and thereby reduce the time that the roadway was closed to the traveling public.

Project Funding:

RATA = **\$783,000.00**

STPR = **\$364,169.82**

Local = **\$143,835.84**

Total = **\$1,291,005.65**

Grays Harbor Makes Major Improvements to Wynooche – Wishkah Road

Wynooche - Wishkah Road is a major collector route that connects the Wynooche Valley with the Wishkah Valley between the towns of Aberdeen and Montesano. The road has additional importance as an alternate to US 12 between the towns when the state highway is closed, particularly when it has flooded over.



The original gravel road was narrow and winding.

This section of Wynooche – Wishkah Road that was recently funded by the RATA had been the only remaining gravel-surfaced portion of the route and had a number of hazardous sharp curves and grades.



The new roadway requires major excavation.



The safety and capacity improvements are obvious.

The new realignment removed all the substandard curves, replaced and upgraded the drainage structures throughout, and provided a wider paved roadway section. Wynooche - Wishkah Road is now fit to safely handle the logging trucks, farm equipment and recreational traffic that travel on it regularly.

Construction:
Total Project Cost:
RATA Funds:
County Funds:

RV Associates, Inc. of Port Orchard, WA
\$2,525,000
\$2,160,000
\$365,000

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Table A
COUNTY BRIDGE DATA - NOVEMBER 2011

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 HS-20 Design Load, less than 28 Tons at Operating Rating

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	114	0	0	4	6,605	33	68,148	77	94,262	18
ASOTIN	17	0	0	0	0	13	137,106	4	4,321	2
BENTON	50	0	0	1	593	17	63,567	32	32,804	9
CHELAN	50	1	10,060	3	5,607	19	87,850	27	67,413	12
CLALLAM	28	1	10,960	2	2,799	10	53,242	15	44,856	10
CLARK	57	0	0	0	0	27	99,467	30	56,932	21
COLUMBIA	63	0	0	4	5,780	19	30,266	40	64,815	8
COWLITZ	64	2	7,889	5	23,224	22	112,024	35	79,220	15
DOUGLAS	20	1	1,984	0	0	11	21,323	8	8,358	1
FERRY	21	0	0	1	730	5	8,494	15	23,839	6
FRANKLIN	84	0	0	2	1,413	17	35,001	65	90,664	5
GARFIELD	32	1	1,695	0	0	13	12,801	18	17,573	5
GRANT	190	1	552	3	2,742	52	140,091	134	223,557	10
GRAYS HARBOR	153	2	12,136	2	2,642	68	302,406	81	209,859	18
ISLAND	0	0	0	0	0	0	0	0	0	0
JEFFERSON	28	1	1,076	0	0	8	16,187	19	61,472	5
KING	128	1	48,830	7	17,125	67	351,464	53	136,715	47
KITSAP	28	0	0	2	2,793	16	68,263	10	17,477	5
KITTITAS	110	1	864	4	2,867	25	79,439	80	130,720	3
KLICKITAT	57	0	0	6	9,205	13	38,943	38	76,276	13
LEWIS	193	3	2,916	4	8,835	40	148,495	146	272,554	25
LINCOLN	122	0	0	8	6,453	29	47,817	85	114,186	13
MASON	52	0	0	2	1,872	12	77,212	38	67,806	14
OKANOGAN	51	0	0	1	931	13	63,016	37	53,878	9
PACIFIC	61	0	0	1	772	9	28,944	51	130,609	11
PEND OREILLE	23	1	1,092	0	0	9	98,997	13	14,962	6
PIERCE	101	3	51,842	0	0	61	234,005	37	53,505	38
SAN JUAN	3	0	0	0	0	0	0	3	2,321	2
SKAGIT	103	0	0	4	5,164	42	194,985	57	116,039	24
SKAMANIA	25	0	0	1	1,980	5	30,218	19	55,471	6
SNOHOMISH	165	8	14,295	9	10,373	79	412,127	69	229,492	44
SPOKANE	101	4	6,682	6	7,303	31	196,336	60	127,543	23
STEVENS	49	0	0	0	0	7	24,634	42	77,493	5
THURSTON	95	0	0	0	0	27	129,232	68	184,307	25
WAHKIACUM	20	0	0	1	2,419	8	28,163	11	20,244	1
WALLA WALLA	104	0	0	1	886	46	121,937	57	120,050	13
WHATCOM	136	2	8,904	0	0	34	106,266	100	167,777	24
WHITMAN	251	3	10,406	12	9,704	50	96,078	186	286,162	58
YAKIMA	294	4	9,456	5	5,826	73	227,110	212	381,791	47
TOTAL	3,243	40	201,639	101	146,643	1,030	3,991,654	2,072	3,917,323	601
Total Replacement Cost* (\$ Million):			\$116		\$84		\$2,295		\$2,252	

*At \$575 per Square Foot

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

Table B

ACTUAL COUNTY ROAD RELATED REVENUES

2010

(thousands of dollars)

COUNTY	MOTOR VEHICLE FUEL TAX					TAXES				MISC				TOTAL
	COUNTY REGULAR	TIB	RAP	CAPP	MVFT TOTAL	PROP- ERTY	FOREST HARVEST	OTHER TAXES	TOTAL TAXES	FED GRANTS	FED LANDS	REIMB	OTHER	
ADAMS	3,811	0	633	640	5,084	1,344	0	11	1,355	1,007	0	0	45	7,491
ASOTIN	1,529	0	262	121	1,912	978	0	2	980	1,824	51	114	43	4,924
BENTON	2,953	29	84	355	3,421	4,966	0	96	5,062	1,071	0	468	1,580	11,602
CHELAN	2,162	0	517	279	2,958	6,342	4	40	6,386	1,035	894	19	753	12,045
CLALLAM	1,831	0	123	152	2,106	6,320	102	6	6,428	1,306	862	14	2,839	13,555
CLARK	6,337	0	7	560	6,904	30,745	212	85	31,042	2,358	6	906	15,585	56,801
COLUMBIA	1,361	0	108	166	1,635	748	0	3	751	919	153	0	68	3,526
COWLITZ	2,180	0	107	262	2,549	7,848	121	69	8,038	1,497	0	414	1,530	14,028
DOUGLAS	5,250	61	128	348	5,787	4,242	0	23	4,265	930	0	131	412	11,525
FERRY	1,664	0	219	208	2,091	577	0	0	577	494	336	3	1,008	4,509
FRANKLIN	2,663	0	749	405	3,817	2,537	0	26	2,563	818	0	129	259	7,586
GARFIELD	1,212	0	165	150	1,527	254	0	5	259	0	86	0	275	2,147
GRANT	5,948	0	322	987	7,257	7,684	0	140	7,824	255	0	290	4,648	20,274
GRAYS HARBOR	2,195	0	1,423	288	3,906	4,924	584	32	5,540	1,571	0	96	2,255	13,368
ISLAND	2,162	0	255	217	2,634	7,761	0	3	7,764	583	0	0	4,882	15,863
JEFFERSON	1,335	0	173	153	1,661	2,909	76	8	2,993	649	1,163	11	547	7,024
KING	13,802	0	0	649	14,451	79,889	53	41	79,983	7,917	725	6,648	55,931	165,655
KITSAP	5,057	0	673	373	6,103	22,905	0	43	22,948	502	0	94	2,899	32,546
KITTITAS	1,841	0	48	360	2,249	3,581	3	9	3,593	140	319	131	773	7,205
KLICKITAT	2,529	0	665	398	3,592	3,064	26	10	3,100	917	62	70	2,502	10,243
LEWIS	3,159	0	16	337	3,512	8,298	591	5	8,894	6,968	0	226	3,280	22,880
LINCOLN	3,926	0	707	447	5,080	702	0	4	706	738	0	0	525	7,049
MASON	2,115	0	325	310	2,750	8,140	249	30	8,419	276	0	569	2,672	14,686
OKANOGAN	3,184	0	702	478	4,364	3,953	14	12	3,979	195	792	36	211	9,577
PACIFIC	1,296	0	818	141	2,255	2,721	83	7	2,811	60	0	0	413	5,539
PEND OREILLE	1,525	0	0	197	1,722	1,198	24	1	1,223	1,435	415	31	1,010	5,836
PIERCE	10,253	2,798	719	820	14,590	47,116	94	34	47,244	2,791	290	3,466	45,736	114,117
SAN JUAN	878	0	152	102	1,132	3,015	0	5	3,020	109	0	12	2,763	7,036
SKAGIT	2,913	0	30	418	3,361	10,222	155	42	10,419	1,389	421	0	3,237	18,827
SKAMANIA	818	0	33	101	952	1,443	90	4	1,537	1,615	0	4	986	5,094
SNOHOMISH	9,493	2,325	48	620	12,486	48,742	236	280	49,258	10,253	0	8,601	29,571	110,169
SPOKANE	8,635	47	194	872	9,748	15,251	11	46	15,308	7,129	0	736	9,063	41,984
STEVENS	3,503	0	102	547	4,152	4,282	110	2	4,394	2,497	158	27	32	11,260
THURSTON	4,799	639	117	410	5,965	16,109	178	26	16,313	2,258	0	1,674	8,728	34,938
WAHKIAKUM	790	0	37	93	920	328	62	1	391	2,024	0	0	705	4,040
WALLA WALLA	2,759	0	671	458	3,888	4,719	1	56	4,776	3,251	3	0	584	12,502
WHATCOM	3,778	0	438	426	4,642	16,276	93	34	16,403	4,897	638	82	2,098	28,760
WHITMAN	3,915	0	1,301	493	5,709	1,940	0	30	1,970	518	0	42	24	8,263
YAKIMA	5,519	0	1,651	866	8,036	12,433	8	18	12,459	545	1,253	251	420	22,964
TOTALS	141,080	5,899	14,722	15,207	176,908	406,506	3,180	1,289	410,975	74,741	8,627	25,295	210,892	907,438

% OF TOTAL 15.5% 0.7% 1.6% 1.7% 19.5% 44.8% 0.4% 0.1% 45.3% 8.2% 1.0% 2.8% 23.2%

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

Table C

ACTUAL COUNTY ROAD RELATED EXPENDITURES

Including RAP and CAPP

2010

(thousands of dollars)

COUNTY	CONST	MAINT	ADMIN & OPER	FACIL	FERRY	REIMB	BOND WARRANT RETT	TRAFFIC POLICING **	OTHER ***	TOTAL INCLUDES RAP & CAPP	RAP	CAPP
ADAMS	588	3,769	1,256	0	0	28	0	0	14	5,655	633	640
ASOTIN	2,212	1,604	721	0	0	0	0	0	111	4,648	307	121
BENTON	2,755	5,971	1,747	0	0	545	213	0 *	56	11,287	105	355
CHELAN	3,149	6,133	2,011	0	0	8	0	0	66	11,367	1,222	279
CLALLAM	2,820	4,410	2,647	0	0	538	0	230	141	10,786	123	6
CLARK	20,184	14,688	1,762	0	0	0	1,267	0 *	10,912	48,813	14	1,123
COLUMBIA	1,119	2,126	329	0	0	0	132	0	61	3,767	77	97
COWLITZ	2,133	8,006	2,241	0	0	0	72	0 *	1,856	14,308	1,627	262
DOUGLAS	2,929	4,751	2,311	0	0	125	611	0	109	10,836	139	298
FERRY	1,456	1,704	561	0	0	0	171	0	617	4,509	219	117
FRANKLIN	2,548	3,298	1,153	0	0	185	199	0	408	7,791	749	0
GARFIELD	200	1,517	547	0	0	80	0	0	0	2,344	165	150
GRANT	4,750	11,247	1,800	12	0	203	2	683	612	19,309	490	987
GRAYS HARBOR	4,465	4,894	1,096	0	0	314	0	0	549	11,318	1,423	288
ISLAND	3,317	6,086	2,451	0	0	66	178	0	1,692	13,790	528	255
JEFFERSON	613	3,913	1,494	8	0	10	38	0 *	827	6,903	173	153
KING	16,811	61,950	21,879	2,051	0	11,663	3,865	4,000	39,412	161,631	0	649
KITSAP	5,605	13,760	7,008	0	0	871	83	0 *	1,414	28,741	750	373
KITTITAS	266	3,163	1,213	0	0	666	69	80	209	5,666	168	506
KLICKITAT	4,828	4,747	599	0	0	126	1	0	240	10,541	678	398
LEWIS	9,671	10,638	3,245	0	0	0	1	0 *	1,081	24,636	16	337
LINCOLN	1,939	4,301	1,067	0	0	62	0	0 *	82	7,451	767	447
MASON	4,558	6,189	2,903	0	0	0	1,163	0 *	183	14,996	503	635
OKANOGAN	253	4,558	1,827	0	0	27	58	0	726	7,449	702	844
PACIFIC	909	2,462	686	0	0	14	0	297	0	4,368	844	3
PEND OREILLE	1,790	2,123	812	0	0	0	1	0	1,136	5,862	0	197
PIERCE	24,802	25,633	24,446	0	4,936	53	405	0	15,546	95,821	233	820
SAN JUAN	1,096	3,806	1,626	0	0	2	395	0	186	7,111	236	102
SKAGIT	3,503	7,962	5,844	481	1,468	85	0	0	801	20,144	28	410
SKAMANIA	1,181	3,592	167	0	0	0	0	0	0	4,940	352	31
SNOHOMISH	46,030	24,522	22,443	70	0	5,042	885	0	7,678	106,670	84	620
SPOKANE	8,811	19,425	6,088	0	0	3,835	831	0 *	1,120	40,110	176	873
STEVENS	2,807	7,242	906	0	0	13	0	0	62	11,030	102	720
THURSTON	8,372	11,279	7,722	0	0	0	0	0	4,383	31,756	174	410
WAHKIAKUM	1,234	991	240	0	775	23	0	0	54	3,317	37	93
WALLA WALLA	4,648	5,217	1,749	0	0	200	0	0	100	11,914	760	458
WHATCOM	6,846	9,962	4,670	0	2,589	441	0	0 *	505	25,013	263	426
WHITMAN	2,579	4,879	1,195	0	0	0	0	91	0	8,744	1,301	493
YAKIMA	8,554	9,762	4,118	0	0	207	978	0	70	23,689	1,551	867
TOTALS	222,331	332,280	146,580	2,622	9,768	25,432	11,618	5,381	93,019	849,031	17,719	15,841

% OF TOTAL 26.2% 39.1% 17.3% 0.3% 1.2% 3.0% 1.4% 0.6% 11.0%

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

*** "Other" includes facilities, operations and transfers

Table D

ANTICIPATED COUNTY ROAD FUND REVENUES 2011 BUDGETS

(thousands of dollars)

COUNTY	BEGIN FUND BAL	MOTOR VEHICLE FUEL TAX					TAXES			MISC				TOTAL
		COUNTY REGULAR	TIB	RAP	OTHER		PROP- ERTY	FOREST HARVEST	OTHER TAXES	FED GRANTS	FED LANDS	REIMB	OTHER	
					CAPP	MVFT								
ADAMS	2,200	3,837	0	466	662	0	1,392	0	8	1,184	1	13	68	9,831
ASOTIN	900	1,500	0	720	124	0	1,110	2	2	3,530	50	60	53	8,051
BENTON	2,166	2,973	885	2,377	367	0	5,534	0	100	236	0	524	1,352	16,514
CHELAN	2,472	2,187	0	1,558	286	0	6,780	1	40	2,230	802	6	442	16,804
CLALLAM	9,914	1,859	200	0	148	1,316	6,450	267	10	1,200	817	328	8,518	31,027
CLARK	20,000	6,000	0	0	550	6,093	30,365	55	78	4,979	7	100	17,084	85,311
COLUMBIA	357	1,350	0	1,262	168	0	850	0	0	625	0	0	212	4,824
COWLITZ	4,300	2,160	0	670	270	0	8,648	100	100	3,090	151	245	885	20,619
DOUGLAS	1,944	3,300	0	151	310	10,849	4,257	0	107	288	0	711	359	22,276
FERRY	700	1,677	0	1,140	215	0	555	5	0	117	323	4	1,153	5,889
FRANKLIN	1,000	2,680	0	1,650	420	0	2,535	0	10	4,144	0	270	98	12,807
GARFIELD	729	1,220	0	1,907	155	0	253	7	3	2,040	75	220	59	6,668
GRANT	9,709	5,988	62	2,148	1,019	0	7,899	0	1,930	1,028	0	311	345	30,439
GRAYS HARBOR	2,001	2,210	0	70	0	311	5,160	450	30	4,792	226	60	2,051	17,361
ISLAND	2	2,190	0	3,820	264	4,450	7,915	0	2	410	0	0	214	19,267
JEFFERSON	4,777	1,350	0	325	158	0	3,712	50	5	3,057	1,046	20	443	14,943
KING	2,078	13,239	0	0	651	0	79,807	0	0	3,120	897	17,950	1,195	118,937
KITSAP	20,142	5,091	0	0	347	0	25,390	0	50	4,396	0	40	2,539	57,995
KITTITAS	11,335	1,760	0	1,645	874	9	4,242	0	20	2,522	250	106	1,194	23,957
KLICKITAT	561	2,480	0	2,856	395	0	3,571	40	9	1,108	0	5	1,122	12,147
LEWIS	8,148	3,165	130	72	350	745	8,599	450	6	6,567	1,158	220	860	30,470
LINCOLN	795	3,932	0	3,097	461	38	739	0	5	637	0	0	155	9,859
MASON	1,500	2,000	0	1,081	334	0	8,210	350	30	4,174	53	195	655	18,582
OKANOGAN	3,000	3,205	0	160	495	50	3,883	0	0	1,887	711	41	80	13,512
PACIFIC	1,986	1,304	0	700	146	91	2,849	0	7	0	12	35	332	7,462
PEND OREILLE	650	1,542	0	40	184	0	1,070	25	1	1,816	410	0	387	6,125
PIERCE	22,495	10,000	4,521	655	750	190	48,228	85	22	1,741	390	1,938	32,868	123,883
SAN JUAN	0	884	0	540	106	2,500	3,089	0	0	508	0	7	157	7,791
SKAGIT	1,825	3,086	0	0	600	100	11,659	150	40	8,200	400	0	2,618	28,678
SKAMANIA	965	823	0	323	104	0	1,237	160	8	1,952	1,000	0	119	6,691
SNOHOMISH	4,179	9,000	6	0	627	1,068	52,408	200	250	4,543	0	5,918	32,784	110,983
SPOKANE	4,912	8,704	0	2,163	910	983	15,751	9	48	13,935	0	450	7,858	55,723
STEVENS	3,500	3,345	0	1,678	525	0	4,450	200	2	500	200	40	69	14,509
THURSTON	9,693	4,831	2,730	321	423	0	16,538	200	25	6,484	103	2,062	8,743	52,153
WAHIAKUM	1,035	772	0	526	96	480	400	60	1	4,378	3	30	419	8,200
WALLA WALLA	4,250	2,750	1,549	1,301	450	0	4,750	0	60	1,805	3	0	234	17,152
WHATCOM	15,650	3,631	0	2,000	420	160	16,609	100	25	1,616	500	1,162	3,388	45,261
WHITMAN	6,000	3,600	0	2,943	500	0	1,974	0	20	1,031	0	68	16	16,152
YAKIMA	2,970	5,556	0	2,855	900	0	12,359	764	0	6,920	0	0	995	33,319
TOTAL	190,840	137,181	10,083	43,220	15,764	29,433	421,227	3,730	3,054	112,790	9,588	33,139	132,123	1,142,172

% OF TOTAL 16.7% 12.0% 0.9% 3.8% 1.4% 2.6% 36.9% 0.3% 0.3% 9.9% 0.8% 2.9% 11.6%

Table E

**ANTICIPATED COUNTY ROAD FUND EXPENDITURES
2011 BUDGETS**

(thousands of dollars)

COUNTY	CONST	MAINT	ADMIN & OPER	FACIL	FERRY	REIMB	BOND WARR RETT	TRAFFIC POLICING	OTHER	TOTAL	END FUND BAL	GRAND TOTAL
ADAMS	1,880	4,707	1,077	0	0	63	0	0	78	7,805	2,026	9,831
ASOTIN	4,360	2,154	611	0	0	0	0	0	225	7,350	701	8,051
BENTON	6,008	7,015	1,889	0	0	668	212	496	226	16,514	0	16,514
CHELAN	7,101	6,910	1,820	0	0	0	0	0	194	16,025	779	16,804
CLALLAM	12,718	5,627	2,812	26	0	158	0	205	81	21,627	9,400	31,027
CLARK	26,646	19,244	13,408	54	0	0	0	3	2,884	62,239	23,072	85,311
COLUMBIA	1,862	1,809	383	25	0	0	129	0	13	4,221	603	4,824
COWLITZ	3,568	9,018	2,560	150	0	0	74	638	1,621	17,629	2,990	20,619
DOUGLAS	13,132	4,453	2,676	307	0	47	560	0	300	21,475	801	22,276
FERRY	1,692	2,853	499	76	0	64	0	0	5	5,189	700	5,889
FRANKLIN	6,810	4,092	1,126	0	0	105	251	0	73	12,457	350	12,807
GARFIELD	3,947	1,502	556	0	0	50	0	0	57	6,112	556	6,668
GRANT	5,030	11,625	1,673	25	0	50	2	416	1,428	20,249	10,190	30,439
GRAYS HARBOR	6,717	7,850	1,600	368	0	380	0	0	0	16,915	446	17,361
ISLAND	9,307	5,618	2,335	171	0	120	95	0	1,621	19,267	0	19,267
JEFFERSON	2,632	4,143	1,558	382	0	20	37	720	2,063	11,555	3,388	14,943
KING	297	31,779	14,398	3	0	17,950	8	4,000	49,609	118,044	893	118,937
KITSAP	12,712	12,040	11,647	116	0	47	85	1,639	373	38,659	19,336	57,995
KITTITAS	4,923	5,221	1,505	0	0	744	0	0	140	12,533	11,424	23,957
KLICKITAT	6,163	4,786	825	15	0	5	1	0	60	11,855	292	12,147
LEWIS	8,985	11,077	3,210	86	0	0	2	0	1,159	24,519	5,951	30,470
LINCOLN	3,310	4,512	1,112	55	0	118	0	0	2	9,109	750	9,859
MASON	7,334	5,649	2,761	400	0	0	1,163	0	1,229	18,536	46	18,582
OKANOGAN	2,200	5,206	2,745	216	0	20	382	0	103	10,872	2,640	13,512
PACIFIC	1,101	3,493	749	0	0	13	0	293	0	5,649	1,813	7,462
PEND OREILLE	2,052	2,588	732	57	0	193	0	56	57	5,735	390	6,125
PIERCE	34,294	27,796	29,148	31	0	1,111	2,844	0	7,008	102,232	21,651	123,883
SAN JUAN	2,104	3,502	1,244	144	0	4	391	0	0	7,389	402	7,791
SKAGIT	6,873	10,142	10,228	370	1,589	60	0	1,350	1,773	32,385	(3,707)	28,678
SKAMANIA	2,868	3,488	0	0	0	0	0	0	0	6,356	335	6,691
SNOHOMISH	40,001	26,294	23,339	973	0	11,858	646	0	7,872	110,983	0	110,983
SPOKANE	24,245	15,450	7,664	157	0	2,362	824	0	894	51,596	4,127	55,723
STEVENS	3,010	7,439	1,033	492	0	35	0	0	0	12,009	2,500	14,509
THURSTON	16,458	13,892	9,936	423	0	0	0	0	2,086	42,795	9,358	52,153
WAHKIAKUM	6,073	850	179	32	773	18	0	0	275	8,200	0	8,200
WALLA WALLA	5,991	5,359	2,004	0	0	0	0	0	35	13,389	3,763	17,152
WHATCOM	4,301	13,894	8,388	40	172	361	0	707	1,347	29,210	16,051	45,261
WHITMAN	7,318	6,127	1,348	0	0	0	0	87	0	14,880	1,272	16,152
YAKIMA	16,382	10,304	3,356	0	0	0	986	0	0	31,028	2,291	33,319
TOTAL	332,405	329,508	174,134	5,194	2,534	36,624	8,692	10,610	84,891	984,592	157,580	1,142,172

% OF TOTAL 29.1% 28.8% 15.2% 0.5% 0.2% 3.2% 0.8% 0.9% 7.4% 86.2% 13.8%

Table F

COUNTY ROAD LEVY SUMMARY

As shown in 2011 Budgets

(thousands of dollars)

COUNTY	Unincorp Valuation	County Road Property Tax Levy	County Road Property Tax Revenue Produced	Operating Transfer	Payment for Services	(RCW 36.33.220)		Revenue Remaining in Road Fund	Levy Shift from Road to Current Exp. (RCW 84.52.043)
						Diversio from Road To Current Expense	County Road Property Tax Exp. for Other Purposes		
						Traffic Policing expense paid by:			
ADAMS	1,040,895	2,342	1,392					1,392	0
ASOTIN	982,052	2,210	1,122					1,122	400
BENTON	3,027,078	6,811	5,520			495		5,025	0
CHELAN	5,309,112	11,946	6,590	38				6,552	400
CLALLAM	5,233,338	11,775	6,461		200			6,261	0
CLARK	18,175,387	40,895	35,225			4,533		30,692	0
COLUMBIA	460,507	1,036	965				Divert - Current Expense 115	850	0
COWLITZ	4,928,621	11,089	8,670	638				8,032	959
DOUGLAS	2,503,387	5,633	4,357					4,357	0
FERRY	549,368	1,236	1,236			673		563	0
FRANKLIN	1,813,850	4,081	2,567					2,567	265
GARFIELD	164,615	370	259					259	0
GRANT	3,900,868	8,777	8,100		416			7,684	0
GRAYS HARBOR	2,751,122	6,190	5,157		663			4,494	0
ISLAND	10,889,309	24,501	7,975		616			7,359	0
JEFFERSON	3,957,917	8,905	3,715			720		2,995	220
KING	39,160,639	88,111	85,822	4,302				81,520	0
KITSAP	17,523,372	39,428	25,070			1,983		23,087	0
KITTITAS	4,574,588	10,293	3,326			200		3,126	635
KLICKITAT	2,636,466	5,932	3,571					3,571	0
LEWIS	5,587,080	12,571	9,805			1,234		8,571	1,017
LINCOLN	901,290	2,028	1,689			500		1,189	0
MASON	7,315,949	16,461	9,170			970		8,200	0
OKANOGAN	3,010,424	6,773	4,037					4,037	0
PACIFIC	1,999,647	4,499	2,829		293			2,536	0
PEND OREILLE	1,187,210	2,671	1,345		56			1,289	400
PIERCE	34,412,837	77,429	59,869	2,700			Divert - Traffic and Courts 11,722 *	45,447	0
SAN JUAN	7,582,446	17,061	3,755			546		3,209	309
SKAGIT	7,579,457	17,054	11,901			1,350		10,551	1,000
SKAMANIA	1,044,226	2,350	1,493					1,493	0
SNOHOMISH	35,082,472	78,936	52,373	4,554				47,819	0
SPOKANE	13,012,184	29,277	17,336			1,326		16,011	0
STEVENS	2,738,096	6,161	4,524					4,524	482
THURSTON	13,795,989	31,041	19,538			3,000		16,538	0
WAHIAKUM	407,471	917	320					320	200
WALLA WALLA	2,245,742	5,053	4,808					4,808	0
WHATCOM	11,830,824	26,619	17,333			707		16,627	0
WHITMAN	1,056,549	2,377	2,029		87			1,942	0
YAKIMA	6,215,741	13,985	12,796					12,796	0
TOTALS	286,588,127	644,823	454,052	12,232	2,331	18,236	11,837	409,416	6,287

* Increased by voter approval (RCW 84.55.050)

Table G

COUNTY ROAD MILEAGE - 1/1/11

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			0.00	1,107.91	668.24	1,776.16	1,776.16	545.05	1,087.21	1,127.69
ASOTIN	61.28	21.04	82.31	165.81	151.90	317.71	400.03	100.35	203.34	233.50
BENTON	83.36	31.52	114.88	431.90	313.10	745.00	859.88	297.00	593.99	258.80
CHELAN	34.61	15.41	50.02	383.40	220.74	604.13	654.15	235.34	471.73	121.81
CLALLAM	17.14	6.78	23.92	335.51	124.16	459.67	483.59	130.94	261.74	2.96
CLARK	396.85	180.88	577.73	281.12	257.91	539.03	1,116.76	438.79	945.61	11.56
COLUMBIA			0.00	273.11	229.87	502.98	502.98	141.50	283.00	356.05
COWLITZ	52.56	29.15	81.71	254.83	194.39	449.22	530.93	223.54	447.13	8.68
DOUGLAS	56.49	36.14	92.63	1,136.16	401.20	1,537.36	1,629.99	293.55	591.84	1,194.03
FERRY			0.00	507.68	231.26	738.94	738.94	176.75	353.88	537.53
FRANKLIN	24.23	12.45	36.68	612.52	340.17	952.69	989.37	344.14	688.07	398.17
GARFIELD			0.00	234.08	213.03	447.10	447.10	127.51	255.01	314.10
GRANT	26.31	17.86	44.17	1,579.69	895.94	2,475.63	2,519.80	831.43	1,672.48	1,086.77
GRAYS HARBOR	9.99	7.57	17.56	290.67	258.98	549.64	567.20	261.25	522.47	39.40
ISLAND	50.61	22.34	72.95	317.61	193.04	510.65	583.60	215.38	433.51	6.98
JEFFERSON	8.85	1.47	10.32	250.63	136.34	386.97	397.28	129.67	259.96	73.05
KING	747.53	220.25	967.78	399.42	265.05	664.47	1,632.25	485.31	1,018.77	50.91
KITSAP	352.33	148.43	500.76	260.63	162.25	422.89	923.64	310.68	628.48	10.47
KITTITAS	1.45	3.87	5.32	252.34	306.08	558.42	563.74	305.89	612.51	67.93
KLICKITAT			0.00	709.08	375.70	1,084.78	1,084.78	352.74	705.58	534.88
LEWIS	32.87	17.50	50.37	719.90	275.94	995.84	1,046.21	288.38	577.40	46.29
LINCOLN			0.00	1,342.23	658.49	2,000.72	2,000.72	384.80	769.61	1,543.64
MASON	3.79	1.77	5.56	341.55	271.70	613.24	618.80	263.86	527.88	47.01
OKANOGAN			0.00	856.28	511.79	1,368.07	1,368.07	406.21	812.55	689.47
PACIFIC			0.00	219.69	130.12	349.81	349.81	119.85	240.12	48.06
PEND OREILLE			0.00	380.84	180.86	561.69	561.69	167.49	334.98	261.49
PIERCE	626.79	421.83	1,048.63	253.24	251.33	504.57	1,553.20	669.31	1,388.78	26.05
SAN JUAN			0.00	183.93	86.71	270.64	270.64	86.71	173.42	52.71
SKAGIT	56.55	43.17	99.72	388.81	312.96	701.78	801.50	356.13	713.25	40.52
SKAMANIA			0.00	152.85	85.38	238.23	238.23	85.38	171.21	28.87
SNOHOMISH	616.33	211.38	827.71	448.75	284.35	733.10	1,560.81	492.67	1,017.76	11.60
SPOKANE	310.00	149.86	459.86	1,431.74	649.62	2,081.36	2,541.22	726.07	1,497.03	1,160.39
STEVENS			0.00	928.77	561.69	1,490.46	1,490.46	465.18	930.39	828.47
THURSTON	239.84	70.90	310.74	450.88	270.19	721.07	1,031.80	341.09	696.43	24.64
WAHKIAKUM			0.00	58.39	85.18	143.57	143.57	78.90	157.80	16.92
WALLA WALLA	50.39	30.96	81.35	446.09	441.07	887.16	968.51	401.48	803.92	373.68
WHATCOM	74.03	40.44	114.47	510.73	318.29	829.02	943.49	358.73	719.60	32.25
WHITMAN			0.00	1,287.39	617.60	1,904.99	1,904.99	419.50	839.00	1,467.18
YAKIMA	84.28	82.03	166.31	818.14	669.59	1,487.73	1,654.04	729.53	1,474.55	552.93
STATEWIDE	4,018.44	1,824.99	5,843.44	21,004.25	12,602.21	33,606.46	39,449.90	12,788.06	25,881.98	13,687.40
EASTERN	732.40	401.14	1,133.54	14,885.13	8,637.94	23,523.07	24,656.61	7,451.50	14,980.68	13,108.49
WESTERN	3,286.05	1,423.85	4,709.90	6,119.12	3,964.27	10,083.40	14,793.29	5,336.56	10,901.30	578.91

Data from County Road Logs certified 1/1/2011 by the County Road Administration Board

Table H

**COUNTY ARTERIAL PRESERVATION PROGRAM
2010 ACCOMPLISHMENT SUMMARY**

COUNTY	1/1/09 Eligible Arterial System C/Line (miles)	Total CAPP Rec'd (\$1,000)	Total CAPP Expended (\$1,000)	Total Eligible Expenses (\$1,000)	CAPP Contri- bution (%)	2010 Arterial Prep/ Repair (\$1,000)	2010 Arterial Sealcoat C/Line (miles)	2010 Arterial Overlay C/Line (miles)	2010 Total Resurf. C/Line (miles)	2010 Percent System Resurf'd
ADAMS	545.10	639.6	639.6	1,105.0	57.9	205.6	39.7	0.0	39.7	7.3
ASOTIN	100.35	121.2	121.2	121.2	100.0	0.0	7.5	0.0	7.5	7.5
BENTON	301.57	354.6	354.6	1,072.0	33.1	0.0	67.0	0.0	67.0	22.2
CHELAN	237.19	279.5	279.5	725.4	38.5	122.9	19.7	0.0	19.7	8.3
CLALLAM	129.58	152.3	6.1	6.1	100.0	0.0	30.9	0.0	30.9	23.8
CLARK	439.55	560.5	1,122.7 *	5,598.6	20.1	0.0	20.8	14.0	34.8	7.9
COLUMBIA	141.26	166.1	96.7	918.5	10.5	50.1	0.0	5.7	5.7	4.0
COWLITZ	222.80	262.2	262.2	1,021.4	25.7	531.8	0.0	0.0	0.0	0.0
DOUGLAS	293.92	348.3	298.0	698.1	42.7	276.6	54.8	0.2	55.0	18.7
FERRY	176.75	208.0	117.4	117.4	100.0	111.0	0.0	0.0	0.0	0.0
FRANKLIN	344.24	405.2	0.0	48.2	0.0	0.0	1.6	0.0	1.6	0.5
GARFIELD	127.51	149.7	149.7	316.1	47.4	109.9	5.9	0.0	5.9	4.6
GRANT	834.39	987.0	987.0	3,763.9	26.2	1,167.9	96.5	5.9	102.4	12.3
GRAYS HARBOR	244.82	287.8	287.8	611.4	47.1	611.4	0.0	0.0	0.0	0.0
ISLAND	215.76	255.4	255.4	1,642.2	15.6	408.5	8.7	5.8	14.5	6.7
JEFFERSON	129.74	152.9	152.9	477.1	32.0	104.8	8.4	0.0	8.4	6.4
KING	517.97	649.3	649.3	1,110.1	58.5	0.0	6.7	4.6	11.3	2.2
KITSAP	313.03	372.8	372.8	914.1	40.8	501.7	0.1	5.0	5.1	1.6
KITTITAS	305.89	360.1	505.7	505.7	100.0	60.3	18.1	0.0	18.1	5.9
KLICKITAT	338.25	397.8	397.8	1,038.8	38.3	0.0	30.4	0.0	30.4	9.0
LEWIS	287.54	337.2	337.2	1,169.2	28.8	217.0	5.5	4.2	9.7	3.4
LINCOLN	380.19	446.8	446.8	560.2	79.8	204.6	23.5	0.0	23.5	6.2
MASON	263.20	309.7	634.6	649.0	97.8	0.0	0.0	5.7	5.7	2.2
OKANOGAN	406.72	478.3	844.1	844.1	100.0	304.1	27.8	0.0	27.8	6.8
PACIFIC	119.85	141.2	3.4	663.7	0.5	150.4	6.0	1.1	7.1	5.9
PEND OREILLE	167.49	196.9	196.9	202.3	97.3	0.0	0.0	1.7	1.7	1.0
PIERCE	671.75	820.0	820.0	3,034.4	27.0	813.0	34.1	4.6	38.7	5.8
SAN JUAN	86.71	101.9	101.9	520.9	19.6	0.0	11.8	0.0	11.8	13.6
SKAGIT	354.88	417.8	410.5	1,674.7	24.5	80.0	34.2	2.5	36.7	10.3
SKAMANIA	85.55	101.1	31.0	294.5	10.5	56.8	4.2	0.4	4.6	5.4
SNOHOMISH	516.09	620.1	620.1	1,458.8	42.5	168.5	13.9	4.5	18.4	3.6
SPOKANE	720.26	872.9	872.9	2,052.5	42.5	720.7	51.1	0.0	51.1	7.1
STEVENS	465.12	546.9	719.9	1,023.5	70.3	203.2	31.0	0.5	31.6	6.8
THURSTON	340.34	409.7	409.7	725.9	56.4	184.8	11.7	0.3	12.0	3.5
WAHKIACUM	78.90	92.8	92.8	96.3	96.3	9.1	2.1	0.0	2.1	2.7
WALLA WALLA	389.05	457.8	457.8	1,377.1	33.2	325.6	44.0	0.0	44.0	11.3
WHATCOM	360.86	425.8	425.8	460.0	92.6	180.4	12.2	0.3	12.5	3.5
WHITMAN	419.33	493.0	493.0	1,636.5	30.1	496.5	41.7	2.7	44.5	10.6
YAKIMA	729.48	866.5	866.5	1,753.8	49.4	0.0	43.0	1.9	44.9	6.2
TOTAL	12,803.0	15,246.7	15,841.4	42,008.7	37.7%	8,377.3	814.7	71.6	886.2	AVERAGE 6.8

* Expended amounts higher than received are from carry forward amounts of prior years.

Table I

COUNTY FREIGHT AND GOODS SYSTEM - 1/1/2011

COUNTY	Freight and Goods System - Truck Route Class					Total FGTS	Total Adequate	% Adequate
	T-1	T-2	T-3	T-4	T-5			
ADAMS		0.53	38.47	277.76	268.51	585.28	195.15	33.3%
ASOTIN		0.15	23.00	19.98		43.13	37.66	87.3%
BENTON			116.69	125.69	84.16	326.54	87.40	26.8%
CHELAN			37.32	101.31	34.02	172.65	58.56	33.9%
CLALLAM			34.40	98.74	9.99	143.13		0.0%
CLARK	2.63	14.95	220.49	95.89		333.96	282.47	84.6%
COLUMBIA			10.30	49.06	146.71	206.08	11.20	5.4%
COWLITZ			78.80	57.47	3.00	139.27	111.33	79.9%
DOUGLAS			6.89	83.48	171.26	261.63	3.22	1.2%
FERRY			108.86	115.60		224.46	27.31	12.2%
FRANKLIN			111.34	154.05	251.45	516.84	246.46	47.7%
GARFIELD				10.13	125.75	135.88	116.96	86.1%
GRANT		10.46	270.62	262.74	306.20	850.02	57.97	6.8%
GRAYS HARBOR		1.03	211.56	7.13		219.72	192.26	87.5%
ISLAND			14.88	26.84	0.37	42.09	41.70	99.1%
JEFFERSON			39.44	33.20	65.75	138.39	106.90	77.2%
KING	18.60	21.84	257.89	111.01		409.33	379.97	92.8%
KITSAP	1.00	5.82	155.24	83.04		245.10	164.76	67.2%
KITTITAS		1.44	191.98	103.93	9.57	306.91	204.81	66.7%
KLICKITAT			174.68	111.37		286.05	7.63	2.7%
LEWIS			140.85	213.56	45.97	400.38	206.74	51.6%
LINCOLN			131.90	281.78	363.90	777.59	447.51	57.6%
MASON			38.98	80.03	1.46	120.47	2.09	1.7%
OKANOGAN			100.60	118.83	179.35	398.78	5.43	1.4%
PACIFIC				135.41		135.41	24.73	18.3%
PEND OREILLE			38.39	125.40	62.21	226.00	0.49	0.2%
PIERCE	11.57	52.51	308.18	24.33	7.70	404.29	136.89	33.9%
SAN JUAN			23.92	64.60		88.52	57.69	65.2%
SKAGIT		4.65	170.09	66.06		240.80	111.69	46.4%
SKAMANIA			22.66	58.73		81.38	80.96	99.5%
SNOHOMISH	4.64	7.45	329.56	108.16	60.82	510.63	326.45	63.9%
SPOKANE	5.69	31.95	456.28	106.90	109.28	710.10	600.27	84.5%
STEVENS			135.08	103.12	97.18	335.38	12.80	3.8%
THURSTON		9.33	162.57	32.66	4.13	208.69	24.24	11.6%
WAHKIAKUM			12.00	2.67	10.83	25.50	12.80	50.2%
WALLA WALLA		7.83	71.83	285.44		365.10	12.91	3.5%
WHATCOM			108.47	92.93		201.40	72.28	35.9%
WHITMAN			3.29	37.97	249.59	290.85	37.44	12.9%
YAKIMA		8.82	388.73	137.76	67.41	602.72	593.76	98.5%
TOTAL	44.12	178.76	4,746.23	4,004.75	2,736.58	11,710.43	5,100.86	43.6%

County Road Log Certified 1/1/2011 by the County Road Administration Board

PAVEMENT PRESERVATION

In Washington Counties

What is Pavement Preservation?

Pavement preservation is “a systematic approach... employing a network level, long term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety and meet motorist expectations.” So say the members of the FHWA Pavement Preservation Expert Task Group. Using this principle, the cost of maintaining the pavement condition of a county road network is substantially lower if pavement preservation techniques and protocols are followed.

In practical terms, pavement preservation boils down to three sound principles: **The Right Treatment, at The Right Time, on The Right Road.** The best return on Pavement Preservation dollars is a pro-active approach in maintaining structurally sound pavements in good condition. The intent of a pavement preservation treatment is to extend pavement life at a level that is cost effective and maximizes the service life of the roadway asset.

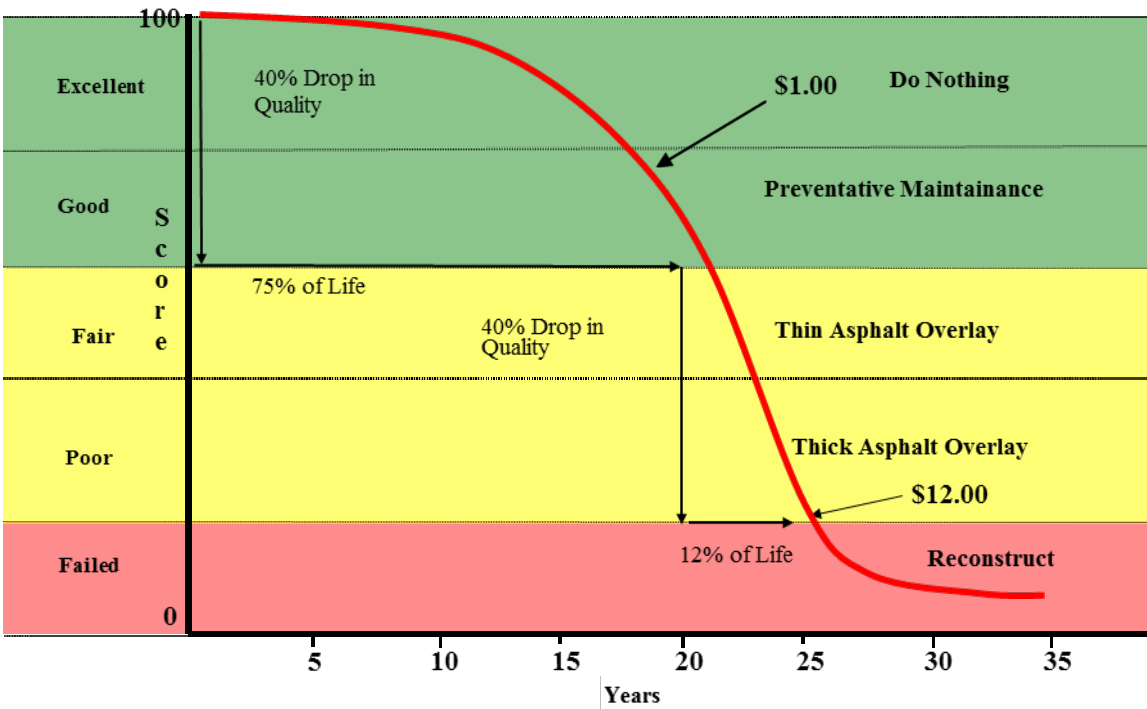
The cost of pavement preservation increases exponentially with pavement deterioration. Failure to maintain a roadway network at the optimal time dramatically increases maintenance cost, decreases drivability and may expose the public to increased risk of higher accident rates.

The “True Value” of Pavement Preservation

The most ineffective, costly way of responding to roadway complaints is a “Worst First” policy. If an agency has postponed maintenance to the point that structural damage is being done to the road then it will require a major rehabilitation to correct. The “Worst First” strategy waits until roads in the system reach a level where pavement preservation is the most expensive technique available. Sadly, “Worst First” is very appealing politically: it reassures the public that they have been heard because the worst roads are being rehabilitated first. However, in reality, this costly and ineffective policy will eventually return all paved roads to gravel roadways.

During the past 20 years, the industry standard range for a paved road system network has been in the 80 to 85 Pavement Structural Condition (PSC) score, on a 100-point scale. However, due to the current economic situation, the counties are experiencing network PSC scores falling to the 75 to 80 range. With the future anticipated budgets, these PSC scores will continue to decline. A critical point in a pavement's serviceability life occurs when it reaches a PSC in the 60 to 70 range. If a preventative maintenance treatment is not applied at this time, the cost of rehabilitation later will be more than **twelve times** that of a preventative maintenance activity.

Typical Pavement Life Curve



Pavement Distresses – Structural

Washington counties use the “Surface Condition Field Rating Manual for Asphalt Pavements - 1992” for the collection of flexible pavement rating data, per WAC 136-70-040. There are 14 pavement defects described in the manual. At a minimum, counties are required to rate their Paved Arterial network (Collector and Arterial roads). The following core structural pavement defects are required to be collected for pavement condition ratings:

- Transverse cracking
- Longitudinal cracking
- Alligator cracking
- Patching

Transverse Cracking – this is an environmental distress caused by thermal expansion and contraction due to low and high temperatures. The cracks extend perpendicular to the centerline, either partially or fully across the roadway width.



Longitudinal Cracking – denotes a structural distress where pavement is failing under heavy loading. The cracks run parallel to centerline and usually appear in the wheel paths or paving construction joints.



Alligator Cracking – is associated with heavy, repeated traffic loading and base failure. This defect appears when several discontinuous longitudinal cracks begin to interconnect, forming many pieces resembling the pattern of alligator skin.



Patching – potholes and/or depressions formed by base failure, utility trenching, or delamination of the pavement surface. A patch is an area of paved road surface that has been replaced with new material to repair the existing pavement.



Pavement Management System

A Pavement Management System (PMS) is a methodology for maintaining road surfaces by systematically analyzing pavement life cycles and pavement ratings to determine timing of pavement preservation, as well as selecting the most cost effective pavement rehabilitation type. A PMS will also allow development of a pavement rehabilitation budget that will prevent major road deterioration.

By knowing when pavement preservation is cost effective, a county can spend its limited pavement preservation dollars on the most cost effective rehabilitation. Counties can significantly reduce the need for and cost of routine pavement maintenance by properly preserving the existing paved roadway surfaces.

VisRate – Pavement Rating Software

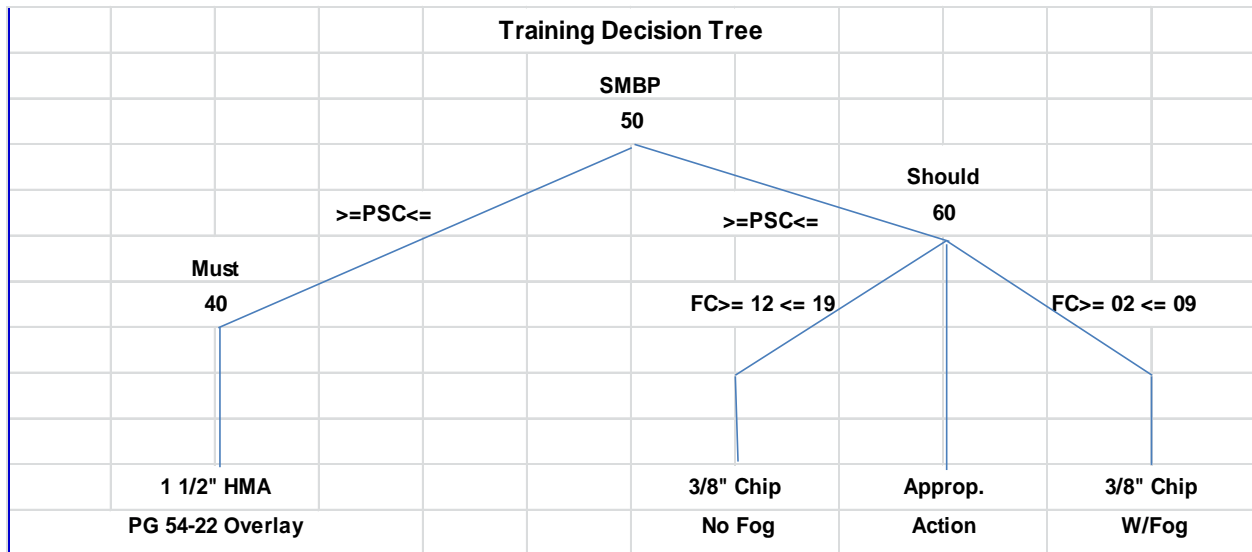
Using a laptop computer, a two-person county crew can rate up to fifty lane miles of paved roads in a day using VisRate, a computer program provided to the counties by CRAB to assist them with the visual pavement rating process. Prior to VisRate, visually rating twenty lane miles of paved roads was considered a productive day.

Counties' Operation of a Pavement Management System (PMS) - Mobility

Roadway and pavement information is located in the county Road Log. A computer software program, Mobility, is provided to the thirty-nine counties by CRAB for the maintenance of the Road Log. The Road Log is updated annually (see WAC 136-60-010). Mobility PMS uses information stored directly in the Road Log. In order to insure a successful PMS one of the most important elements is communication. A good start is having a meeting with all entities involved: Engineering, Road Maintenance, and Utilities Department just to name a few. Getting everyone on-board early in the process is critical to the success of a PMS program.

The next step in building the PMS is to design a "Decision Tree" that reflects the best fit and meets the expected rehabilitation needs of the road system. A Decision Tree is a set of rules by which each Road Log segment in the network is evaluated. A decision tree rule can be as simple as just one rule, or as complex as five or more rules in a collection. A Rehabilitation Type, Rehabilitation Date, and Rehabilitation Cost are then calculated for each Road Log segment based on the Decision Tree. Two additional reports are also produced by Mobility PMS: Network Condition Report, and the Pavement Management Project List Report. These reports are instrumental in defining the overall network condition. Project selection is an extremely tough balancing act that requires the impartiality of a Pavement Management system to analyze the entire system network and make recommendations on the correct rehabilitation type. One very important facet to remember about using a PMS, is that it is intended to be a "Guide"; sound engineering judgment will always prevail. A Decision Tree and a Rules Collection are shown below; please keep in mind that these are used for Mobility PMS training purposes only. PMS analyzes each road segment by first using the PSC score. If the PSC score is between the Should Must Break Point (SMBP = 50) and the Should PSC score of 60 then the road segment continues down the decision tree to the right. A PSC score of 40 to 49 moves the road segment to the left side of the tree and continues down through the rules.

Training Decision Tree:



FC = Function Class, PCC = Portland Concrete Cement, SMBP = Should Must Break Point

Training Decision Tree						
Group #	Surface Type	Rehabilitations	Item	Operator	Value	Break Point
1	ACP	3/8 Chip W/Fog	PSC	>=		SMBP
2	ACP	1 1/2 HMA PG 54-22 Overlay	PSC	<		SMBP
3	BST	3/8 Chip W/Fog	FC*	>=	02	
3	BST	3/8 Chip W/Fog	FC	<=	09	
4	APC	3/8 Chip No Fog	FC	>=	12	
4	APC	3/8 Chip No Fog	FC	<=	19	
5	PCC*	Appropriate Action	PSC	<=		SHOULD

FC = Function Class, PCC = Portland Concrete Cement

Pavement Preservation Options:

Within each Pavement Managers “Tool Box” are numerous pavement rehabilitation options. The key is being able to select the correct rehabilitation that will function in the environmental conditions, handle traffic loading, and provide safety to the public, all the while being cost effective. The following is a list of some Pavement Preservation options:

Hot Mix Asphalt (HMA)

A thin lift of HMA, less than 2” is applied

Pre-Level

HMA spread by either a grader or a paving machine, used to correct roadway defects and crown.

Chip Seal (BST)

Hot asphalt emulsion is sprayed on road surface followed by a layer of rock chips.

Slurry Seal

Hot asphalt emulsion is sprayed on road surface followed by a layer of very small rock chips and uses sand as filler.

Sand Seal

Thin layer of hot asphalt emulsion followed by a top layer of sand.

Fog Seal

Light spray of hot emulsion used over new chip seals to lock in the aggregate and reduce the dust. Fog Seal can be used over existing pavements that are oxidized and have minor raveling.

Crack Seal

Hot applied sealant is applied under pressure to fill cracks from the bottom up to prevent water intrusion.

Use of Chip Seals

Though not always the first choice in years past, Chip Sealed roads are now becoming the industry standard for Pavement Preservation when applicable. The following pictures explain the Chip Seal process as well as a picture of Pre-Coated aggregate being broomed.

Typical Chip Seal Operations:



Typical Chip Seal Operations: Urban Road – High Traffic Volume



Typical Chip Seal Operations: Rural Roads



Typical Chip Seal Operations:

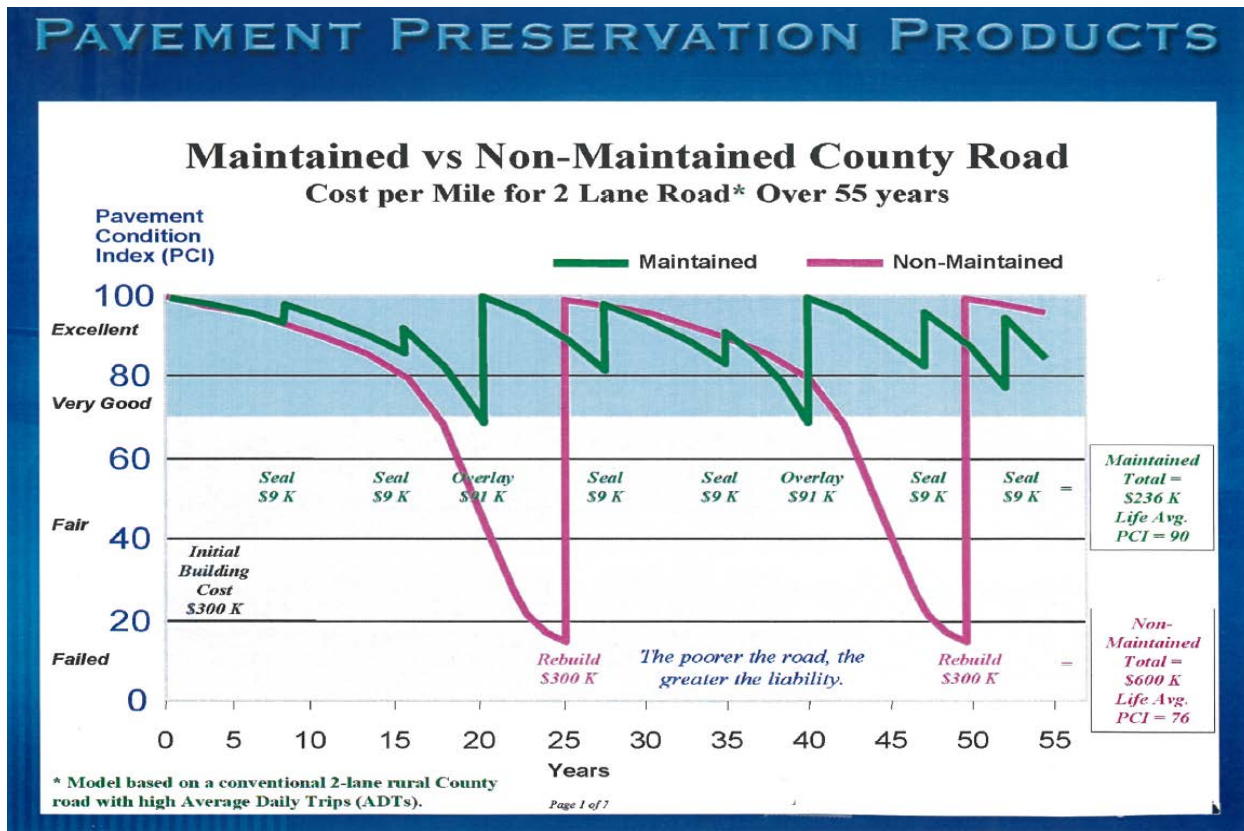


Chip Seal Using Pre-Coated Aggregate



Conclusions:

The consequences of the failure to maintain a paved roadway are staggering. Over a fifty-year life, it will cost approximately \$236,000 to maintain the road surface at an average Pavement Condition Index (PCI) score of 90 over that 50-year period. If that same paved roadway is non-maintained and allowed to fail, then rebuilt every twenty-five years the result is an average PCI of 76, and the road rebuilt at a total cost of \$600,000. The graph below highlights the importance of proper Pavement Preservation techniques: **“The Right Preservation Treatment, at the Right Time, on the Right Road.”**



The continuing challenge of shrinking preservation dollars requires the counties to use innovative and cost saving measures to insure the public’s investment in the road infrastructure. Using recycling processes and recycled materials is one way the counties are stretching their preservation dollar. However, without additional funding, counties will find themselves with a large backlog of roads needing pavement rehabilitation.

Note: PCI – Pavement Condition Index, PSC - Pavement Structural Condition are two methodologies for rating pavement.