Pavement Maintenance/Preservation

As described earlier in the Key Issues section, taking care of existing transportation facilities is the most important task. Preserving the investment already made in the regional transportation system is vital. If pavement preservation activities are postponed, a significantly higher cost could accrue. As such, a more detailed analysis of the pavement maintenance and pavement preservation efforts of the counties was undertaken. It was challenging because of the constraints of the data available, and the fact that each jurisdiction reports expenditures differently. It has reaffirmed that the charge to maintain and preserve the county roadway network is demanding -- each county faces distinct challenges because the needs are different and the roadway networks are put together differently. This section will endeavor to identify the difficult task that public works departments have of providing a serviceable roadway network within a limited budget for those rural county roadways serving diverse needs.

Pavement Management

Those responsible for determining appropriate allocation of public funds to various programs and projects have a difficult job indeed. With limited funding they must determine the amount of funds to distribute to numerous worthwhile endeavors such as schools, law enforcement, human services, transportation and other public works activities, and other public functions that ensure the health and general welfare of the populace. Data available from the Washington State Auditors office indicates that on average Counties in Washington State spend approximately 17% of their funding on Transportation Transit and Maintenance and Operations with an additional 7% on Transportation Capital; approximately 25% goes towards Law and Justice while approximately 16% is dedicated to general government and 12% to Health and Human Services.

Likewise, Public Works departments have similar challenges on a more focused agenda to balance budgets with needs. Data from the WSDOT Road and Street Report indicates that on average state wide county transportation expenditures are approximately 36% for maintenance, with 40% on construction activities, 14% on administration, 4% on traffic policing, 2% on debt service and 4% on other activities.

Many different activities compete for the same funding sources. Knowledgeable professionals make the best decisions they can with available information. Sometimes emergencies arise created by natural events that require adjustments to previously planned programs for addressing public works needs and projects.

In order to make the best decisions possible for the maintenance and preservation of a roadway network, it cannot be overemphasized the importance of a Pavement Management System (PMS). A PMS may be very complex with sophisticated computer models, or may be done primarily by hand. All four counties currently use a PMS following the County Road Administration Board requirements. Pavement and roadway condition data are essential to make the best use of available funds. A PMS empowers the governing agency with a systematic approach to performing budget analysis and deciding what repair strategies are most appropriate for which roadways in order to efficiently use available funds.

A PMS typically entails 5 steps that are repeated as necessary every two to three years:

- Mapping Road Network
- Pavement Condition Inventory
- Identify Maintenance & Repair Needs

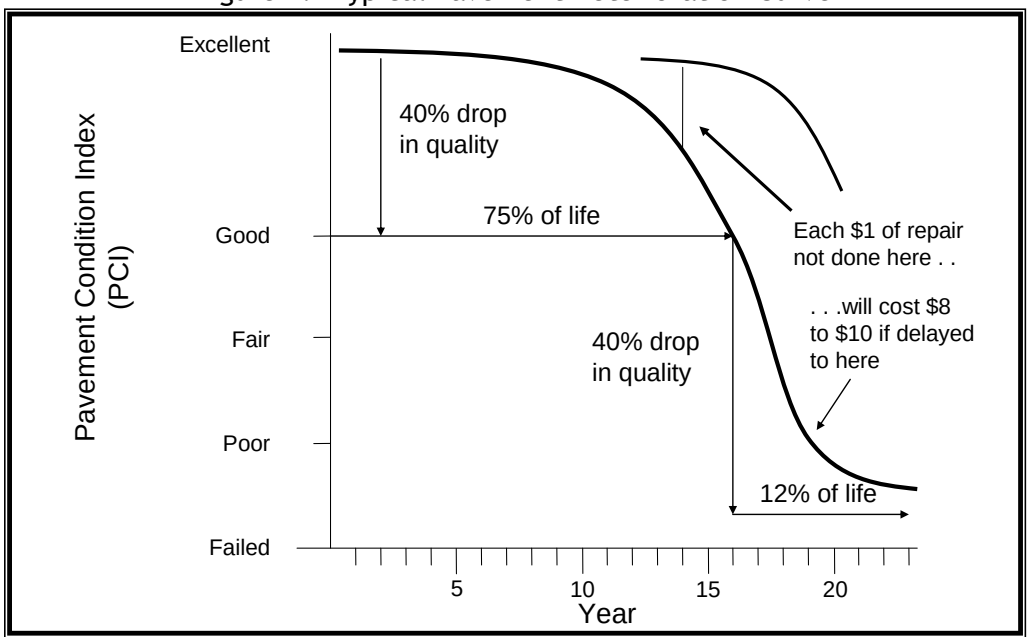
- Analyze repair strategies and establish annual funding levels
- Implement annual program.

A systematic procedure should be used each cycle to collect pavement condition inventory information. This provides an up-to-date inventory for better decision making and allows pavement performance to be tracked over time. Several different types of pavement distress can occur, each with different types of potential repair strategies. Often a computer program is used to determine the remaining service life (RSL) for each roadway segment based on the governing distress (the distress that results in the lowest RSL). The RSL represents the years remaining until complete failure of the roadway surfacing. Complete failure occurs when a road segment has an RSL value of 0 and reconstruction of the road section (pavement, base, etc.) is required since the road segment has deteriorated to a point that other repair strategies would not be beneficial. The road is passable, but the surface is possibly turning to gravel, extreme fatigue is visible, sections of pavement may be detached or appear to be islands on the base material.

By evaluating the RSL distribution for the road network, allocation of funds to the appropriate repair strategies can begin. It is important that the repair strategy is focused on the goal of maintaining an average system RSL of 10-12 years which represents a level that can be reasonably sustained.

The goal of the analysis is to determine the best distribution of funds, among the available repair strategies, that should be completed each year to produce an average system RSL of 10 to 12 years at the least cost. Failure to maintain pavement at the necessary levels results in a decrease in the RSL and a correspondingly greater future cost to increase the average RSL to the desired level. Figure 4 emphasizes the importance of routine roadway maintenance activities prior to severe deterioration of pavement condition.

Figure 4. Typical Pavement Deterioration Curve



Repair strategies are chosen based on the condition of the road segment. Road surfaces RSL will dictate the repair strategy that should be used. Each repair strategy has multiple repair methods. The repair method used to implement a repair strategy should be based on the standard practices of the City/County. A new strategy is prepared for a two year

period and updated to re-evaluate the pavement condition every two years thereafter. There are five generally accepted repair strategies explained below.

Deferred Action is always a viable option when developing a repair strategy. Most road networks will include a wide spectrum of RSLs for individual road segments. For the first few years after original construction, roadways should require very little maintenance. Likewise, when road segment RSLs becomes less than 3, routine and preventative maintenance will no longer improve the RSL. Reconstruction becomes the only alternative that will improve the RSL for road segments that have deteriorated to this stage. Reconstruction costs are very high and often not available in the maintenance funds. Therefore maintenance for certain roadways will be deferred until adequate funds are available to produce beneficial results that improve the road network system as a whole.

Routine Maintenance is usually driven by existing defects in the road surface. This maintenance can be used to prevent further deterioration of the roadway. Road segments that have RSLs greater than 7 to 10 years can benefit from routine maintenance. Examples of possible routine maintenance treatment alternatives include: crack sealing, cold patches, dig-out and cold patch, and fog coating.

Preventative maintenance is used to stop the deterioration on roadways before the surface distresses become a serious problem. This strategy provides the most benefit to a roadway if implemented before the RSL is below 7 years. Examples of possible preventative maintenance treatment alternatives include: sand seal, scrub seal, single chip seal, slurry seal, micro-surfacing.

Rehabilitation includes repair alternatives such as overlays and recycling. This strategy should be reserved for road surfaces that have a RSL between 1 to 7 years. The implementation of this strategy can require intense scheduling and will require allocation of a significant portion of the budget. This strategy should be reserved for road segments that fit into a major planning scheme. A possible candidate for such a strategy would be a road segment that is bordered by a newly constructed portion of that road and improving the segment would increase the overall performance of the road. Examples of possible rehabilitation strategy treatment alternatives include: plant mix seal, thin hot mix overlay <2in., hot surface recycling, rotomill and overlay.

Reconstruction includes repair alternatives such as complete removal and replacement of a failed pavement section. Improving the road horizontal and vertical alignment, guard rail and drainage are all elements of a reconstruction strategy. This strategy will require considerable funding and lead time to allow for proper design. Reconstruction of a road segment is going to increase the RSL to nearly 20 years. Therefore, this strategy is reserved for roads that are at the end of there design life. Examples of possible reconstruction strategy treatment alternatives include: Thick Overlay (3 inch depth), Rotomill & Thick Overlay, Base Repair with Pavement Replacement, Cold Recycling & Thick Overlay, or Base and Pavement Replacement.

Table 13 displays the benefit different treatment strategies provide in increased RSL over the existing roadway segments RSL along with typical material costs for such treatments. In only 5 years since the 2005 Addendum, these costs have increase from 150-400% making it even more difficult keep up with maintenance treatment.

Table 13. Typical Pavement Treatment Costs and Increased Remaining Service Life

MAINT. TYPE	TREATMENT TYPE	TREATMENT COST		BENEFIT OF TREATMENT (in yrs.) BASED ON RSL EXISTING							
		Per Sq. Yd	Per mile*	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20
Routine	Crack Seal	$1.00	$16,374	0	0	0	0	1	2	3	4
Preventative	Single Chip Seal	$1.00	$16,429	0	1	3	5	5	5	5	5
Rehabilitation	Thin Hot Mix Overlay (<2")	$7.20	$118,272	0	4	6	7	7	7	7	7
Reconstruction	Thick Overlay (3")	$11.94	$196,134	12	12	12	12	12	12	12	12
Total Reconstruction	Base & Pavement Replacement	$20.00	$550,000 - $1.1 M **	20	20	20	20	20	20	20	20

* Cost per mile includes only material costs and assumes 28 foot wide pavement surface (12' travel lanes with 2' shoulders), additional cost would be associated with wider lanes or shoulders. Substantial additional cost is associated with mobilization, traffic control, striping, or other site specific efforts.
Treatment costs for cities are typically higher and can be as much as double the cost per mile due to additional roadway width and traffic issues.
Costs estimate assume construction costs only. Administration, mobilization, traffic control and other site specific efforts are not included.

** Total Reconstruction can be very expensive and a large range of costs is being experienced by many jurisdictions. The primary reason for such high wide ranging cost is the fact that when total reconstruction activities are undertaken a roadway must be built to current standards of width, horizontal and vertical alignment.

For each treatment type, the treatment improves the RSL of a segment based on the segments current condition. As an example, crack sealing adds no additional life to a pavement that has a RSL of 9 or less. Above 9, crack sealing adds from 1 to 4 years, depending on the current pavement condition. Another example is chip sealing. Chip sealing is one of the most widely used preventative maintenance treatments. Chip sealing roads with RSL of 7 or greater increases the roads RSL by 5 years. However, applying a chip seal to a road with a 4 to 6 RSL only adds 3 years, and applied to a road with a 1 to 3 RSL only adds 1 year. It can be seen that applying chip seals to roads with RSLs of 6 or less is not a cost effective approach.

County Routine Maintenance Activities

The importance of maintaining the transportation system was discussed above in the existing transportation section of the RTP as well as in the Key Issues section. This section will briefly describe several of the routine transportation system maintenance activities that go on regularly. Some are directly related to taking care of pavements or roadway surfaces while others are not but serve a vital function to ensure the safest operation of the transportation network possible. Many of these activities are performed by county crews:

- Gravel and Dirt roadways are graded
- Rock is added to gravel roadways regularly
- Pavement cracks are sealed to prevent more serious degradation in later years
- Potholes in paved surfaces are repaired
- Shoulder maintenance including guardrails, grading, roadside vegetation
- Signage and pavement markings
- Drainage ways such as roadside ditches and culverts. This effort is critical in that if water does not move it can seriously damage the roadway below the surface.
- Bridge maintenance
- Snow removal

- Traffic Services
- Litter Cleanup
- Pavement Markings
- Asotin County also maintains some urban roadways that require sweeping and street lights with associated electricity costs.

Table 14 provides a summary of expenditures for each county over the previous 10 year period. It must be understood that county engineers and others make the best use of funding that they can with available information. The table indicates only the expenditures on the types of activities listed above, but does not attempt to identify unmet needs. There are likely many miles of county roadways that are being untreated because more serious problems exist elsewhere. Each roadway must often wait its turn in priority order.

Examination of Table 14 quickly reveals that considerable funding is required in order to perform the routine maintenance activities described above. Funds reported in the table do not include construction funds for new roads or reconstruction of roads that have failed pavement, nor bridge replacement funds. These are typically only accomplished when grants which require local matching funds are obtained.

The amount of funding spent on snow removal, which can vary greatly from year to year, has a direct effect on the level of effort that can be put toward other maintenance activities.

Table 14. Historical Expenditures for Roadway Maintenance and Preservation

Year	Asotin County	Columbia County	Garfield County	Whitman County
1999	$1,269,723	$1,671,880	$1,087,068	$3,978,967
2000	$1,268,848	$1,256,833	$1,163,415	$3,614,751
2001	$1,335,681	$1,763,152	$1,234,902	$3,611,997
2002	$1,314,207	$1,568,397	$1,047,448	$3,752,925
2003	$1,496,320	$2,267,404	$1,125,014	$3,520,480
2004	$1,471,924	$1,019,022	$1,196,072	$4,108,625
2005	$1,445,292	$1,624,669	$1,316,580	$4,208,935
2006	$1,655,365	$1,422,211	$1,235,391	$3,992,095
2007	$1,834,379	$1,875,436	$1,405,834	$4,270,719
2008	$1,845,618	$1,377,000	$1,609,031	$4,915,548
Total	$14,937,357	$14,174,124	$11,333,687	$35,996,075
Average/Year	$1,493,736	$1,584,600	$1,242,076	$3,997,504
Center-line Miles	400.21	503.34	447.11	1908.61
Average/Mile	$3,732	$3,148	$2,778	$2,094

Source: WSDOT Financial Planning and Economic Analysis

Expenditures for non-paved roadways is considerable given the amount of mileage that each county has of graveled roadways (75% of total regional roadway mileage region). When you consider that non-paved surfaces require more frequent maintenance activities, it is easier to understand the maintenance costs for these critical roadway connections for county farms.

Also significant in the maintaining of the roadway system is the number of structures less than 20 feet in length. The replacement of these structures does not have a designated funding source and can expend a significant portion of county maintenance funds.

Pavement Preservation and Maintenance

Pavement preservation activities primarily include chip sealing of roadways that have deteriorated so much that a new surface must be put in place. Although crack sealing is often done immediately prior to chip sealing, chip sealing involves much more. Although different treatment methods can be used, the basic concept is that additional road thickness is added. Sometimes old roadway surface is milled away and removed or recycled in order to place the new surface on the best bed possible without completely reconstructing the roadway. Typically, for older roadways, it is most beneficial to perform pavement preservation activities every 5 to 7 years. If pavement preservation activities are not performed regularly every 5 – 7 years then pavement deterioration will occur at an increased rate and the cost to repair the pavement goes up substantially as discussed earlier.

Table 15 (shown on the following two pages) shows the historical expenditures by county to preserve arterial pavement and what they have been able to accomplish with funds spent. Data is unavailable to determine the level of effort spent on non-arterial paved surfaces. Examination of Table 15 shows two key issues:

- Although each county's allocation of money received from the County Arterial Preservation Program (CAPP) are relatively consistent throughout the years, the total eligible expenditures for some counties are sporadic. This is most likely due to the counties contributing more to the program in order to perform certain preservation activities.
- Over the last 6 years the percentage of arterial roadway pavements that have been treated ranges from 37% in Whitman County to over 99% in Garfield County. This is an important number in that 85% to 120% of paved surfaces should have been treated during this 6 year period in order to minimize long-term preservation costs and maximize the useful life of the roadway.

Clearly the available funding to preserve pavements in some counties is inadequate to meet the need and in the not so distant future many roadways that have not received preservation treatment will be beyond possible preservation and require total reconstruction. This will involve substantial investment in order to keep important roadways on the freight and transportation system from deteriorating to a point where they either need to be reconstructed for millions of dollars per mile, or are left to revert to gravel.

It should be noted that cities prefer overlays as their pavement preservation activity for arterial roadways. A better result is obtained with less frequent application and is more suited for urban areas with pedestrians and higher traffic volumes. Overlays are not always achievable, however, due to the significantly higher cost. Some overlays are performed but many cities often have to use chip seals in order to treat more roadways within their annual budget. Smaller cities are dependent on counties to perform reimbursable work while county crews are doing preservation work and counties primarily use chip seals for preservation activities. WSDOT also indicated that the higher cost of various treatments also significantly affects how they do business in recent years.

Table 15. Arterial Preservation Historical Expenditures and Accomplishments for Counties

Asotin County

Year	Eligible Arterial System Centerline Miles	Total Eligible Expenses (x $1,000)	CAPP contri-bution (%)	Total County Expenditures (x $1,000)	Arterial Roadway Treated			
					Seal-coat (miles)	Overlay (miles)	Total (miles)	Percent
1998	93.9	121.8	98.7	1.6	6.7	0.0	6.7	7.1%
1999	95.0	106.5	85.5	15.4	15.2	0.0	15.2	16.0%
2000	95.0	121.2	84.6	18.7	12.2	0.0	12.2	12.8%
2001	95.8	123.1	84.2	19.4	7.7	0.0	7.7	8.0%
2002	95.8	126.0	83.3	21.0	9.1	0.0	9.1	9.5%
2003	95.8	153.0	69.1	47.3	7.0	0.0	7.0	7.3%
2004	95.1	125.5	84.6	19.3	2.3	0.0	2.3	2.4%
2005	95.1	108.9	98.7	1.4	6.9	0.0	6.9	7.3%
2006	95.1	435.0	28.9	309.3	16.5	0.0	16.5	17.4%
2007	96.5	194.5	71.7	55.0	6.4	0.0	6.4	6.6%
2008	100.4	156.0	78.1	34.2	10.5	0.0	10.5	10.5%
6 Year Total		**$1,173**	**60.2**	**$467**	**49.6**	**0.0**	**49.6**	**51.4%**
6 Year Average		**$195**	**71.9**	**$78**	**8.3**	**0.0**	**8.3**	**8.6%**

6 Year Average Annual Expenditures per mile (x $1,000) $1.948

Columbia County

Year	Eligible Arterial System Centerline Miles	Total Eligible Expenses (x $1,000)	CAPP contri-bution (%)	Total County Expenditures (x $1,000)	Arterial Roadway Treated			
					Seal-coat (miles)	Overlay (miles)	Total (miles)	Percent
1998	133.7	247.7	53.5	115.2	50.5	12.6	63.1	47.2%
1999	133.7	346.1	37.5	216.3	28.3	0.0	28.3	21.2%
2000	133.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
2001	135.4	448.0	39.7	270.1	46.7	0.0	46.7	34.5%
2002	136.1	175.0	81.8	31.9	14.4	0.0	14.4	10.6%
2003	137.7	211.9	68.9	65.9	15.0	0.0	15.0	10.9%
2004	137.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
2005	137.7	309.3	48.8	158.4	16.0	0.0	16.0	11.6%
2006	137.7	242.0	98.8	2.9	12.8	0.0	12.8	9.3%
2007	141.0	307.0	83.4	51.0	16.9	0.0	16.9	12.0%
2008	141.2	443.8	37.8	276.0	15.2	0.0	15.2	10.8%
6 Year Total		**$1,514**	**63.4**	**$554**	**75.9**	**0.0**	**75.9**	**54.6%**
6 Year Average		**$252**	**56.3**	**$92**	**12.7**	**0.0**	**12.7**	**9.1%**

6 Year Average Annual Expenditures per mile (x $1,000) $1.787

Garfield County

Year	Eligible Arterial System Centerline Miles	Total Eligible Expenses (x $1,000)	CAPP contri-bution (%)	Total County Expenditures (x $1,000)	Arterial Roadway Treated			
					Seal-coat (miles)	Overlay (miles)	Total (miles)	Percent
1998	122.2	309.6	40.4	184.5	28.0	1.0	29.0	23.7%
1999	122.2	187.5	65.2	65.3	19.0	1.0	20.0	16.4%
2000	122.2	328.9	38.7	201.6	26.0	0.0	26.0	21.3%
2001	122.2	252.4	51.6	122.2	26.1	0.0	26.1	21.4%
2002	122.2	130.6	99.0	1.3	23.7	0.0	23.7	19.4%
2003	121.1	308.5	42.6	177.1	25.1	0.1	25.2	20.8%
2004	126.9	295.2	44.2	164.7	23.5	4.2	27.7	21.8%
2005	126.3	299.3	46.2	161.0	21.5	0.0	21.5	17.0%
2006	126.3	229.1	71.0	66.4	6.0	0.5	6.5	5.1%
2007	126.3	246.5	78.6	52.8	12.7	0.0	12.7	10.1%
2008	126.3	322.3	46.6	172.1	31.0	0.0	31.0	24.6%
6 Year Total		**$1,701**	**53.3**	**$794**	**119.8**	**4.8**	**124.6**	**99.4%**
6 Year Average		**$283**	**54.9**	**$132**	**20.0**	**0.8**	**20.8**	**16.6%**
6 Year Average Annual Expenditures per mile (x $1,000)								**$2.245**

Whitman County

Year	Eligible Arterial System Centerline Miles	Total Eligible Expenses (x $1,000)	CAPP contri-bution (%)	Total County Expenditures (x $1,000)	Arterial Roadway Treated			
					Seal-coat (miles)	Overlay (miles)	Total (miles)	Percent
1998	416.0	741.6	57.4	315.9	21.1	10.5	31.6	7.6%
1999	416.0	720.5	57.8	304.1	16.1	4.8	20.9	5.0%
2000	414.8	426.7	100.0	0.0	7.6	4.2	11.8	2.8%
2001	414.6	426.5	99.8	0.9	6.5	3.4	9.9	2.4%
2002	414.3	768.9	46.9	408.3	14.0	3.5	17.5	4.2%
2003	417.4	637.3	85.2	94.3	14.1	8.1	22.2	5.3%
2004	417.4	598.6	75.7	145.5	15.3	0.0	15.3	3.7%
2005	418.0	1118.7	41.0	660.0	15.5	4.5	20.0	4.8%
2006	418.0	911.2	59.0	373.6	29.7	2.5	32.2	7.7%
2007	419.1	809.6	63.6	294.7	29.0	1.6	30.6	7.3%
2008	418.8	853.7	58.3	356.0	34.4	0.4	34.8	8.3%
6 Year Total		**$4,929**	**61.0**	**$1,924**	**138.0**	**17.1**	**155.1**	**37.1%**
6 Year Average		**$822**	**63.8**	**$321**	**23.0**	**2.9**	**25.9**	**6.2%**
6 Year Average Annual Expenditures per mile (x $1,000)								**$1.962**

Source: County Road Administration Board Annual Reports and County Engineer review.

The following table was prepared to show the level of effort that would be needed in order to provide best practices of pavement maintenance and preservation for the jurisdictions in the Palouse Region, the calculations are based on 20 year maintenance plan with crack seals being performed every 3 years and chips seals every 7 years. The cost is based on an average construction cost per square yard and does not include administration, mobilization, traffic control or other site specific efforts which could increase the cost significantly. For both Cities and Counties, $1.00 per square yard was used for crack seals and for chip seals. Detailed calculations for each City and County are included in Appendix D.

Table 16. 20 Year Forecast Pavement Maintenance/Preservation Cost

		Crack Seal		Single Chip Seal	
MUNICIPALITY	Miles	20 year cost	average cost per year	20 year cost	average cost per year
Asotin County					
City (all combined)	46.78	$5,925,000	$296,250	$2,539,000	$126,950
County	166.08	$18,513,000	$925,650	$11,110,000	$555,500
Total	212.86	$24,438,000	$1,221,900	$13,649,000	$682,450
Columbia County					
City (all combined)	19.01	$2,408,000	$120,400	$1,032,000	$51,600
County	146.69	$12,883,000	$644,150	$7,731,000	$386,550
Total	165.70	$15,291,000	$764,550	$8,763,000	$438,150
Garfield County					
City (all combined)	18.00	$2,280,000	$114,000	$977,000	$48,850
County	132.75	$13,282,000	$664,100	$7,969,000	$398,450
Total	150.75	$15,562,000	$778,100	$8,946,000	$447,300
Whitman County					
City (all combined)	203.85	$25,823,000	$1,291,150	$11,065,000	$553,250
County	437.45	$43,714,000	$2,185,700	$26,227,000	$1,311,350
Total	641.29	$69,537,000	$3,476,850	$37,292,000	$1,864,600

Note: City road widths assumes a 32 foot wide road.
Costs estimate assume construction costs only. Administration, mobilization, traffic control and other site specific efforts are not included.
City road miles are taken 2008 WSDOT Revenue & Expenditures Summary.
County road width and miles are actual amounts from the County Road Log.
County road widths vary depending on actual road width
Crack seal cost estimate assumes $1.00 per sq.yd. for counties and cities
Chip seal cost estimate assumes $1.00 per sq.yd. for counties and cities
Crack seal assumes a 3yr maintenance plan
Chip seal assumes a 7yr maintenance plan
Whitman County City road milage includes roads owned by Washington State University (13.68 miles)

It should be noted that the costs above only include the cost to preserve existing paved roads. With 445 miles of unpaved arterials, the Palouse region has 26% of the unpaved arterial roadway mileage in Washington State. This significantly contributes to the fact

that only 30.1% of the Freight and Goods Transportation System of roadways are adequate as shown in Table 5 earlier.

Also, based on the Table 4, the following Table 17 was prepared to calculate the cost to pave all of the existing gravel arterials so that they comply with the Palouse design standard. It was assumed that the surface type of the roadway would be BST due to the fact that 90% of all paved county roads have a BST surface. Also an average roadway width of 26' was used. See Appendix E for the detailed engineers opinion of cost summary.

Table 17. Cost to Pave Current Gravel Arterials

	Asotin	Columbia	Garfield	Whitman
Miles	72.59	88.61	85.52	198.27
Cost/Mile	$ 74,932	$ 74,932	$ 74,932	$ 74,932
Total	$ 5,439,000	$ 6,640,000	$ 6,408,000	$ 14,857,000

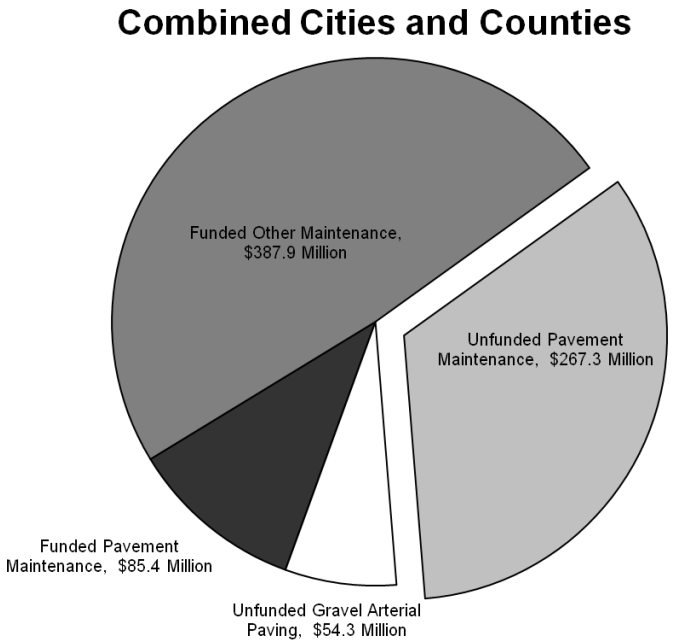
Notes:
Assumes converting existing 26' wide gravel road with BST surface type
Arterial roads also includes collector roadways.

After review of the historic maintenance and preservation expenditures and future maintenance and preservation costs the pie charts shown in Figure 5 were developed to identify the 20 year funding needs for the Palouse region. As a result, based on the 20 year revenue forecast by the WSDOT Financial Planning and Economic Analysis division, the Palouse region is expected to receive $473.3 million dollars in maintenance and preservation funds. Of those dollars $85.4 million is proposed to be used to fund pavement maintenance projects through the CAPP and RAP programs while $387.9 million is for other maintenance described at the beginning of this chapter.

Due to the large amount of road miles within each County, the forecasted revenue for maintenance and preservation of the county roads is not enough to meet the needs of the region. As shown in the Figure, the Palouse region will need an additional $267.3 million dollars in funding in order to keep up with a routine maintenance and preservation program described above. Also, to be able to pave all of the gravel county arterials to a BST roadway surface, the region will need an additional $54.3 million dollars. As a result the 20 year maintenance and preservation forecast for the region identifies that 40% ($321.6 million) of the pavement maintenance projects for the region will be unfunded.

By comparison, the WTP calls for $6.05 billion to preserve, maintain and operate City streets – statewide - as an Unfunded High Priority (pg. 72), while an unfunded medium priority identified on page 78 is for only $41 million to preserve county roads and ferries. Clearly the funds called for by the WTP are grossly inadequate even if all of the $41 million were spent on roadway within the Palouse region.

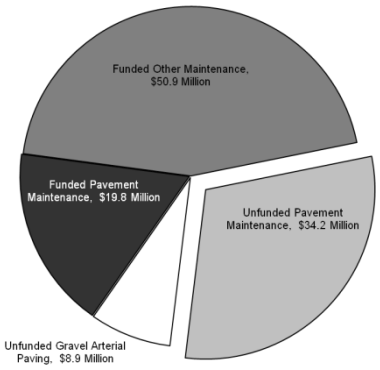
Figure 5. 20-Year Funding Needs for Maintenance and Preservation of City and County Roads



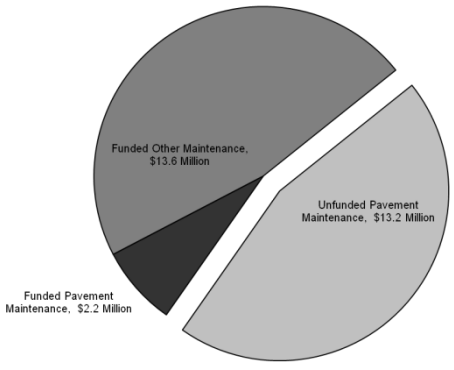
Combined Palouse Cities and Counties
($ in Millions)

Source: WSDOT Financial Planning and Economic Analysis
County Road Administration Board.

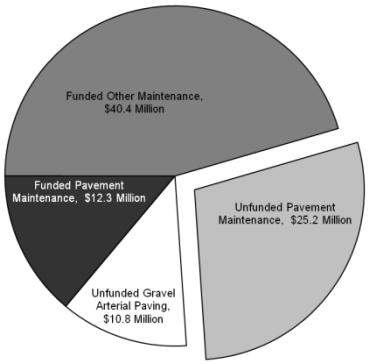
Asotin County



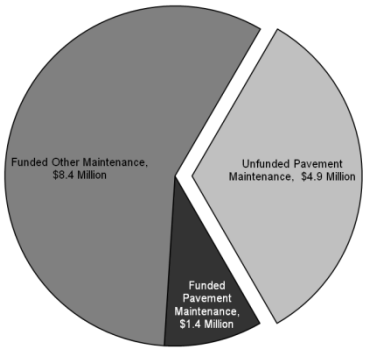
Asotin County - Cities



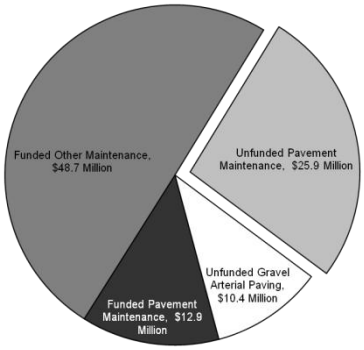
Columbia County



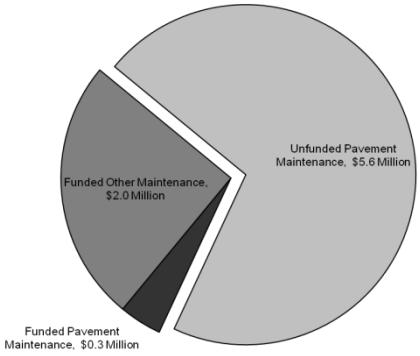
Columbia County - Cities



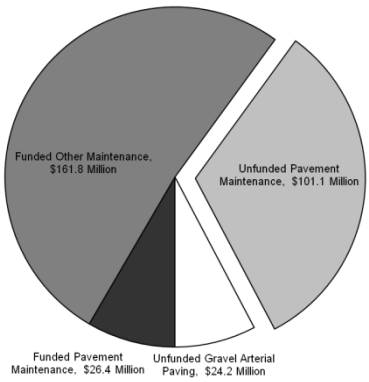
Garfield County



Garfield County - Cities



Whitman County



Whitman County - Cities