Lewis County
Department of Public Works

ROAD FUND RESERVE

June 28, 2002

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BACKGROUND

The Resolution adopting the 2002 budget of the Lewis County Road Fund included a Budget Proviso directing the review of Road Fund Reserves, so that a policy might be established toward maintenance of an appropriate reserve level. Various factors come into consideration in establishing fund reserves, including; reserve forecast period, emergency expenditure preparedness, revenue predictability, expenditure trends, philosophy toward financial risk, and an evaluation of the inter-relationship between fund reserve balance and un-funded need.

Over the last several years, the 6-year revenue/expenditure forecast has been utilized as a strategic budget-planning tool. Proposed annual budget expenditure levels are extended out 6 years, then compared against the 6-year revenue forecast, to determine if spending patterns of the current budget cycle are likely to result in an acceptable fund balance in 6 years. More development of the concept of "acceptable fund balance" is the purpose of this review.

An unstated, yet assumed goal of Road Fund management is to deliver an appropriate quantity and quality of road program services at a rate that neither depletes the fund nor excessively grows the fund. Some generalizations and perhaps over-simplifications of road fund management follow. If the fund is being depleted, either revenues are inadequate to meet the need, or, the quantity and quality of services are being delivered at too high a rate. Conversely, if the fund is consistently growing, while quantity and quality of services are perceived to be adequate, there can be temptation to reduce the revenue stream through cuts in taxation or diversion of funds to other needy programs in County government. Recent experience tells us the fund balance has been growing due to a slowdown in construction project delivery, which creates an illusion of excess revenue, and a tempting target for the ever-popular cut in assessments. In the current tax climate, an assessment cut made to address the immediacy of a fund balance grown too large could be extremely difficult to reinstate once the fund is drawn down.

Another phenomenon pertaining to adequate funding is apparent cultural acceptance of a functionally sub-standard local road system. While congestion issues are only beginning to be noticed in the urbanized areas of Lewis County, many of the safety issues associated with sub-standard roads around the County as a whole seem to be noticed only by those involved in engineering or in accident claims. It is well documented that County roads as a group are the least safe of any in our nation's transportation network, yet little focused attention is brought to bear on the need to adequately fund improvements. An "acceptable fund balance" has been a tongue in cheek term that ignores the large number of un-funded road improvement projects and un-met safety related needs. Instead, the concept of "acceptable fund balance" assumes we are able to address road improvements at approximately our historical rate of project delivery. To improve our rate of project delivery would require additional staff, more use of consultants, or both. Adding staff in an era of general downsizing government, may be justifiable to insiders, yet it appears public perception will continue to hold sway against this as a reasonable option.

Adding consultants, who can be dismissed when the work is done or if the funding gets tight, is generally a more accepted approach to increasing the organizational work capacity. The concept of "acceptable fund balance" for this review assumes Public Works will strive to increase its delivery of construction projects and have some success in doing so.

RESERVE FORECAST PERIOD

Out of convenience, the 6-year revenue and expenditure forecast has been utilized for examination of road fund reserves. The revenue and expenditure worksheet is a form that is completed and submitted to the State on an annual basis. During budget preparation, many assumptions are included in the revenue and expenditure forecast. Some of the recent assumptions include; the latest motor vehicle fuel tax forecast can be projected ahead for 6 years, there will be continued use of road fund interest income toward current expense fund needs, we will continue to fund a constant base level of locally funded road construction activity, and there will be a 2% inflation rate for increases in road maintenance and road administration costs. With each year beyond the upcoming budget year, the sense of uncertainty about these assumptions tends to increase.

While a shorter forecast period such as 4 years may provide more confidence in assumptions, it could also mask the longer term trend. For example, in Exhibit 1, the graphic titled "Road Fund Trends" indicates a stabilizing, or slightly increasing road fund reserve from years 2004 to 2005, then a declining balance from 2005 to 2007. Had the forecast been limited to 4 years, a very rosy outlook for the fund would have been a reasonable conclusion. In this instance, watching trends for an additional two years provides evidence for a much more cautious outlook.

A longer forecast period such as 10 years or even 20 years could be utilized, however the confidence in the assumptions made tends to diminish. This issue is germane, because the certainty with which we make our forecast assumptions is a risk factor, which should influence the size of the fund reserve. For example, if a theoretical bare minimum fund balance were determined, just enough to cover ongoing cash outflow at peak payment period, until tax collections replenish the fund, plus some contingency for emergencies, budget planning based on this bare minimum could be erroneous if some of the assumptions made in the forecast were wrong. A simple invalid assumption about the inflation rate applied to the maintenance budget over 6 years, on the order of 1%, would affect a targeted reserve of $2 million by 10% of the reserve. The ability to make annual corrections lessens the risk of invalid assumptions somewhat, however annual corrections create inefficiencies as projects and programs must overcome inertia each time they stop and start again.

EMERGENCY EXPENDITURE PREPAREDNESS

Flooding damage resulted in significant emergency expenditures during 1996. Road maintenance expenditures alone were almost double the costs of the more routine expenses in the following year. Road fund expenditures exceeded revenues by more than $4 million in 1996, even though many of the costs of damage were reimbursed through federal disaster programs. 'While in

retrospect it appears some errors in judgment were made during that event, it was later confirmed that Lewis County had experienced a 100-year flood, therefore this level of expenditure is not without justification.

The chance of re-occurrence of a flood of that magnitude seems remote. Yet the Nisqually earthquake of February 2001 reminded us that other types of disaster strike Lewis County. The County suffered in the volcanic eruption of Mt. St. Helens, and could experience damages again from eruptions of either Mt. St. Helens or Mt. Rainier. A drought year could result in wildfires across our heavily timbered County.

The Federal Emergency Management Agency has programs in place to rapidly disburse emergency funds to local government. Unfortunately, in the heat of the disaster response, some federal rules and procedures may be misunderstood or misapplied. This introduces another element of risk, not all emergency expenditures will be reimbursed. While many lessons were learned from the floods in 1996, which would not need to be learned again, experience tells us it is not safe to assume disasters are fully funded by the federal government. A disaster contingency should be a component of acceptable fund balance. The amount of that contingency could be placed as high as the amount for which revenues exceeded expenditures in 1996. Or, it could be assumed the experience of 1996 will not be repeated, and our financial exposure in future disasters would not exceed 50% of the extra cost from that year. Alternatively, costs associated with a very large earthquake, or with a cataclysmic mudflow from Mt. Rainier could far exceed what was experienced in ‘96. Ultimately, this question of adequate emergency contingency funds becomes a subjective opinion of reasonable assumption.

REVENUE PREDICTABILITY

The issue of revenue predictability was discussed to an extent under the heading “Revenue Forecast Period”. Public Works Accounting produced Exhibit 2-a, providing a summary of Road Fund revenues received by month in the year ending December 2001. This section briefly expands upon some of the uncertainty with our revenue expectation.

A portion of the motor vehicle fuel tax collected by the State of Washington is directly distributed to the County Road Fund. It has been recognized for some time this revenue source is not tied to the rate of inflation, so its’ purchasing power has been continuously eroding. The amount of the fuel tax revenue does increase with increases in fuel consumption, however this increase in consumption also translates to more wear and tear on the road surfaces, and a higher investment necessary to keep up with wear and tear. There is current legislation to place a fuel tax increase on the ballot this fall. The likelihood of success of the ballot measure is unknown. Revenue sources tied to the current political climate in the legislature or a vote of the people have been viewed very conservatively in the fund forecast.

The Secure Rural Schools and Community Self-Determination Act is helping to sustain the Road Fund. The future of this funding source is yet another uncertainty, as federal policy changes seem to occur every few years. Previous federal legislation that addressed the needs of rural timber counties was programmed to reduce federal support on an annually declining formula.

This federal bill provides constant revenue through 2005, the end of the current act. Beyond 2005 it is impossible to predict what funding support, if any, might replace the Secure Rural Schools and Community Self-determination Act. The strategy for the forecast has been to assume some funding remains beyond 2005, however at a level more consistent with the annually declining formula of the prior act.

Uncertainty with continuation of programs emanating from both the state and federal level translates to risk in the forecast of future road fund balance. This risk should be considered in any concept of acceptable fund balance.

EXPENDITURE TRENDS

Expenditure trends should be considered from the standpoint of historical activity on accounts payable and how the challenges in delivery of the construction program can affect the fund balance.

In the fall of 2001, the Accounting Section of Public Works performed a review of high activity months for accounts payable. Their findings were:

A.P., high 3 consecutive months		
	August	$1,203,620
	September	$1,173,527
	October	$ 970,383
3 month total		$3,347,530

Accounts payable tend to increase dramatically during and immediately following the summer construction season. In a strong construction year, accounts payable could easily exceed the 3-month total shown above.

One of the unique aspects of budgeting and forecasting in the Road Fund as opposed to most other budgets in County government is the significant fluctuation that can occur from year to year because of the construction program. The planned construction program varies annually because the nature and scope of the projects changes. In planning of the annual and 6-year construction program, there is consideration for relative consistency in the amount of local dollars used from year to year to fund construction. In practice there is never a constant expenditure of local funds from year to year, among the reasons it varies is the variability of local match required for grants from state or federal sources.

An aspect of acceptable fund balance is how delay in delivering a part of the planned construction program affects the balance. As work progresses, unforeseen problems tend to occur, and some projects get setback for next year. The funds set up for these setback construction projects remain in the current year until the next budget cycle, and add to the appearance of extra money in the fund. While Engineering strives to improve upon project delivery, it is anticipated there will never be 100% successful delivery of the construction

program from year to year, because too many factors are beyond the control of Public Works. The staffing levels at environmental permit agencies can affect timelines for permits required for construction. Unanticipated right-of-way disputes can set back construction schedules for months or years while legal process is pursued. Since delay of a part of the construction program in any given year seems to be a fact of life, there is somewhat of a financial cushion built into the projected year-end fund balance. For the purpose of planning and budgeting, it is assumed that projects in the new draft annual and six-year programs will proceed as envisioned. This is the best information available at the time budgets and fund balance forecasts are prepared.

Public Works Accounting also produced Exhibit 2-b, providing a summation by month of Road Fund Expenditures for the year ending December 2001. The most informative aspect of this exhibit is the cumulative balance by month at the bottom of the table. In the line just above, a profit or loss is provided, subtracting the expenses in Exhibit 2-b from the revenues in Exhibit 2-a. The cumulative balance by month shows us that in 2001, in the month of September, our yearly cumulative loss was $3,340,836.01. Therefore, minimum reserves at December 31, 2000 needed to be at least this amount to cover cash flow requirements in 2001.

FINANCIAL RISK

An evaluation of risk factors and degree of risk associated with each, and subsequently compiling each factor to obtain a sense of cumulative risk, is a concept that could work well for some situations. In the road fund, to reiterate some of the risk factors, we have; the nuances of uncertain state and federal funding appropriations, a relatively unpredictable risk associated with various disasters, and potential for cost inflation affecting salaries, equipment, and supplies. Another unknown is how new environmental regulation will affect our expenditures. When the uncertainties of these various factors are considered in total, one could draw the conclusion that any mathematical formula developed to calculate these risks would be, in one scenario, incredibly complex and time consuming to develop, or in another scenario, it would be an assumed risk based on an awareness and subjective sense of the risk. Borrowing from the concept of diminishing returns, where there is a point at which marginal additional effort does not produce comparable marginal additional return, the quality of the risk formula is not expected to improve substantially beyond the subjective approach, if more research and analysis were applied. Therefore a subjective approach to risk, emphasizing awareness, is recommended.

UN-FUNDED NEED

If a perception develops that road fund reserves are becoming too large, the reality of unfunded need should come to light. This is an area where the long-term vision for the County road system becomes important. The rural lifestyle we enjoy is likely to continue under the current Comprehensive Plan for Lewis County, so road improvements associated with congestion or capacity problems will not be much of a factor for the next twenty years. There is apparent need in the geometric and roadside safety areas. Common geometric problems that should be addressed are; substandard width of pavement, horizontal and vertical curvature that is inadequate for the posted speed limit, inadequate super-elevation, and poor angles of

intersection. Roadside safety concerns include; lack of or inadequate shoulders, roadside hazards such as steep slopes without guardrail, outdated or marginally functional guardrail, culverts with ends that are not properly beveled. There is a multi-million dollar backlog of un-addressed need on the Lewis County road system. The long-term vision should be correction of deficiencies throughout the County, to provide for a safer, lower risk road system. It is recognized that all problem areas cannot be addressed immediately, the cost is too high, and the logistics are impractical. Instead, they are addressed as funds and competing priorities allow. To reduce a fund balance that has grown large, rather than preserve the funds for un-met needs, sends a message that a safer road system is a lower priority than the short-term popularity gained through a tax cut. Instead, addressing problems with constrained or hindered capacity for project delivery should be the focus.

OTHER COUNTIES

In the fall of 2001, several other Counties were informally polled via e-mail. A few of them responded as follows:

Cowlitz County Public Works indicated they had recently experienced some cash flow problems in the Road Fund, because of unanticipated delay in receipt of grant revenues. In the past they had determined their minimum fund balance needed to be *$1.5* million, however because of the delayed grant revenue, they had been forced to borrow from the Solid Waste fund. There was a new recommendation that the minimum balance be maintained in the $2 to *$2.5* million range.

Chelan County Public Works responded that a previous Director, Lloyd Berry, had a rule of thumb that minimum fund balance needed to be about $2 million. Berry's successor, Dick Anderson, had a target minimum fund balance of $1.5 million.

Franklin County Public Works responded they target as a minimum balance the amount of cash necessary to cover payments before tax receipts arrive. If there is an unusually large construction project, they factor that in.

CONCLUSIONS

Acceptable fund balance is subjective, however certain premises are apparent. The fund must have adequate reserves to meet cash flow requirements in a year when an aggressive construction program is achieved. The fund must have a contingency for emergency expenditures. Because all programmed construction spending will rarely, if ever occur, there is a built in "cushion" in cash flow requirements. The cushion can offset some of the risk of unreliable revenues timing. One approach to setting an acceptable fund balance follows:

2001 Cash Flow Requirements	$3.3 million
Upward adjust cash flow for strong construction	1.7 million

Downward adjust for construction delivery "cushion"	(1.0 million)
Emergency contingency	$1.0 million
Net total acceptable fund reserve	$5.0 million

There is no right or wrong answer to acceptable fund balance. A target year-end fund balance of $5.0 million is adequate in the current Public Works operating environment, however 10 years from now, entirely new information, significant inflation, or other factors could make the number $5.0 million irrelevant.

When the projected fund balance is well above $5.0 million, that part of the fund in excess of that amount should be invested for 6 to 12 month periods to capture the higher interest earnings potential as compared to more liquid investments. At least $5.0 million should be readily accessible for operations within the fund during the budget period.

As part of the annual budget process, the projected fund balance at the end of the 6-year forecast period should be compared against the $5.0 million acceptable fund balance. A projected fund balance below $5.0 million at the end of the next budget year will require expenditure reductions in the submitted budget. If the fund is projected to drop below $5.0 million in years 2 through 6 of the forecast period, this should be taken under advisement by Department management in consultation with the County Commissioners, and appropriate expenditure reductions should be weighed against the likelihood of improved revenues in the forecast period, and weighed against the ramifications of cuts in road services.

PR
4/29/02

Exhibit 1

10/23/01
Lewis County Road Fund
6-Year Budgeted Revenues and Expenditures

Year	Revenues	Expenditures	Difference	Balance
2001				$8.4
2002	$18.6	$20.3	-$1.7	$6.7
2003	$18.5	$20.0	-$1.5	$5.2
2004	$21.3	$22.0	-$0.7	$4.5
2005	$15.3	$14.9	$0.4	$4.9
2006	$14.5	$15.1	-$0.6	$4.3
2007	$14.6	$15.4	-$0.8	$3.5

All amounts (approx) in $Million

Exhibit 2a

Totals For Year Ending December 2001

Exhibit 2-a		January	February	March	April	May	June	July	August	September	October	November	December	Total
Revenues														
311.10.00.00	Property Taxes	28,266.73	128,359.85	234,816.71	1,507,327.64	1,057,237.50	(36,694.84)	35,041.82	48,281.37	186,002.69	1,365,099.87	707,854.99	(30,368.56)	5,231,225.77
312.10.00.00	Private Harvest Tax						590,918.02					991,866.54		1,582,784.56
317.20.00.00	Leasehold Excise Tax		678.27		75.10		1,698.81		1,915.19		107.25		1,243.09	5,717.71
322.40.00.00	Street & Curb Permits	100.00	165.00	449.00	158,235.86	830.50	701.00	(155,452.86)	1,847.50	231.00	1,786.30	865.00	583.45	10,341.75
332.10.66.50	USDA-Schools & Roads			6,715.81										6,715.81
333.10.66.50	USDA-Fed Forest												2,063,497.62	2,063,497.62
333.20.20.50	USDOT/WSDOT-Highway					43,093.13				418,770.63			164,444.06	626,307.82
333.83.51.60	FEMA								7,255.75	7,335.12				14,590.87
334.01.80.00	Dept of Military										2,431.81			2,431.81
334.03.10.00	DOE					30,672.09		197,741.15	14,116.18			90,113.84	112,241.74	444,885.00
334.03.60.00	Dept of Transportation							27,862.28				65,451.86	48,801.94	142,116.08
334.03.71.00	Rural Arterial Projects												8,119.31	8,119.31
334.03.72.00	Road Admin. Board	29,180.49	25,473.09	23,366.38	21,386.66	25,584.86	25,007.94	26,560.17	25,090.30	22,776.94	32,766.62	25,484.96	27,021.89	309,700.30
334.05.60.00	OEA-Work Study Progra.		129.94	236.44		475.23	282.75	124.31				184.60	630.50	2,063.77
335.02.32.00	Non Timber Revenue	4.40												4.40
335.02.33.00	Timber Sale ST First Land		1,372.17	1,097.74	17,974.54	8,212.28						9,925.25	27,818.91	66,400.89
336.00.89.00	Veh Fuel Tax		538,922.40	232,917.17	212,872.31	252,386.17	237,007.21	261,639.66	248,627.56	213,432.49	322,509.37	250,539.32	264,399.08	3,035,252.74
338.42.00.00	Shared Road Maint.					88.17	1,911.73		2,832.08	11,871.00	20,031.26	15,945.17	75,090.24	127,769.65
338.58.00.00	Planning & Devmt Services								2,500.00				705.20	3,205.20
341.43.00.00	Budgeting & Accounting		5.60	77.32	0.10	27.42	105.48	4.20	155.66	889.38	960.16	841.62	5,237.25	8,304.19
341.50.10.00	Map Plan & Print Sales	303.00	183.50	120.00	(120.00)					11.50				498.00
341.50.10.01	GIS-Map Plan & Print Sales		56.50	1,644.00	296.00	388.00	1,123.00	878.25	490.18	3,176.00	220.00	775.50	1,996.50	11,043.93
343.20.00.00	Engineering Fees								199,587.19					199,587.19
344.10.00.00	Road Main & Repair Charges			493.94	(473.23)	289.71	1,922.64	183.18	987.34	1,031.62	271.74	315.83	6,856.14	11,878.91
344.90.00.00	Other Trans Fees & Char												6,054.10	6,054.10
345.83.00.00	Plan Checking Fee	200.00	150.00		150.00		150.00	450.00					150.00	1,250.00
349.14.00.00	Budgeting & Account & Audit				900.00	1,380.40	559.12	3,348.29		2,448.30	67.03		127.63	8,830.77
349.42.00.00	Road Maintenance Services					5,153.43	8,989.52	11,543.40	396.20	3,152.00	7,516.08	1,728.79	25,242.86	63,722.28
359.90.00.00	Misc Fines & Penalties		200.59											200.59
361.40.00.00	Interest on Contracts								3,891.26					3,891.26
361.90.00.00	Other Interest Earned	131.52	129.99	116.59	79.69	98.27	56.66	138.55	29.86	36.42	34.35	51.75	47.69	951.34
362.40.00.00	Spaces & Fac. Leases ST		25.00											25.00
362.50.00.00	Spaces & Fac. Leases LT	9.86	3,068.27				13,487.24	330.39	163.18		1,212.18		8,068.86	26,339.98
366.90.00.00	Other Interest Misc Revenue											3,348.30	3,348.30	6,696.60
369.90.00.00	Miscellaneous Revenue	59.15		40.00	21.76			371.06	382.50	421.44	144.00	166.05	447.94	2,053.90
369.90.01.00	Misc Revenue Leave Transfer							1,521.23						1,521.23
395.10.00.00	FA Sale Proceeds									2,323.00				2,323.00
395.10.04.00	Sale of FA-Timber		12,058.00											12,058.00
395.10.10.00	Forest Board Yield	220,733.92	78,147.77	68,216.79	112,730.48	39,486.16	14,971.92	46,522.21	9,870.46	90,035.95	74,130.97	48,840.37	15,486.98	819,173.98
397.00.00.00	Operating Transfers In												11,464.37	11,464.37
	Revenue Total By Month	278,989.07	789,125.94	570,307.89	2,031,456.91	1,465,403.32	862,198.20	458,807.29	568,419.76	963,945.48	1,829,288.99	2,214,299.74	2,848,757.09	14,880,999.68

Exhibit 2b

Totals For Year Ending December 2001

Exhibit 2-b		January	February	March	April	May	June	July	August	September	October	November	December	Total
Expenses														
	GIS/UST/FLOOD	28,794.39	34,998.10	73,403.00	65,444.10	57,893.87	102,274.40	53,682.32	61,523.63	95,702.02	129,316.26	43,715.71	226,918.20	973,666.00
	Administration	133,043.23	122,609.01	143,052.30	133,791.46	172,451.37	158,852.40	231,166.80	128,711.42	278,362.81	276,623.06	238,081.60	197,606.68	2,214,352.14
	Maintenance	460,413.93	467,066.98	537,739.28	583,382.19	654,676.72	647,286.30	726,077.89	1,228,246.33	717,118.95	637,472.31	900,513.06	725,556.49	8,285,550.43
	Construction	24,616.79	125,573.23	92,476.48	49,730.38	83,242.41	99,427.11	957,255.94	1,377,618.70	421,783.63	341,949.48	212,512.02	160,075.68	3,946,261.85
	Expenses Total By Month	646,868.34	750,247.32	846,671.06	832,348.13	968,264.37	1,007,840.21	1,968,182.95	2,796,100.08	1,512,967.41	1,385,361.11	1,394,822.39	1,310,157.05	15,419,830.42
	Profit <Less> By Month	(367,879.27)	38,878.62	(276,363.17)	1,199,108.78	497,138.95	(145,642.01)	(1,509,375.66)	(2,227,680.32)	(549,021.93)	443,927.88	819,477.35	1,538,600.04	(538,830.74)
	Cumulative Balance by Month	(367,879.27)	(329,000.65)	(605,363.82)	593,744.96	1,090,883.91	945,241.90	(564,133.76)	(2,791,814.08)	(3,340,836.01)	(2,896,908.13)	(2,077,430.78)	(538,830.74)	