

Evaluating Cost Effectiveness at WSDOT

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RMWPPP October 2015

Bozeman, MT



Equivalent Uniform Annual Cost (EUAC)

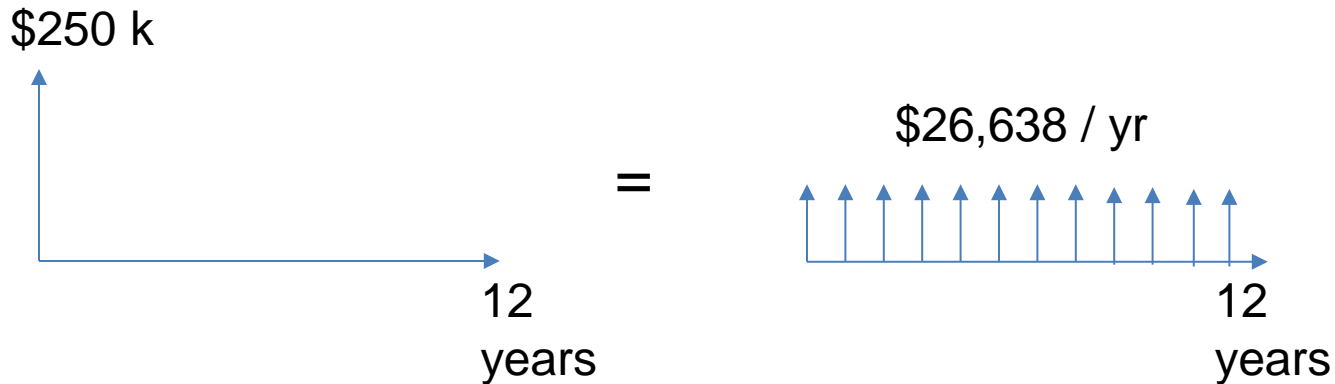
- EUAC is a simple value that can be directly compared with the annual cost of a different project, or an alternative treatment
- EUAC is easier to calculate, since the time periods comparing alternatives can be different
- When using EUAC, there is no need to consider Salvage Value.

Cost-Effectiveness

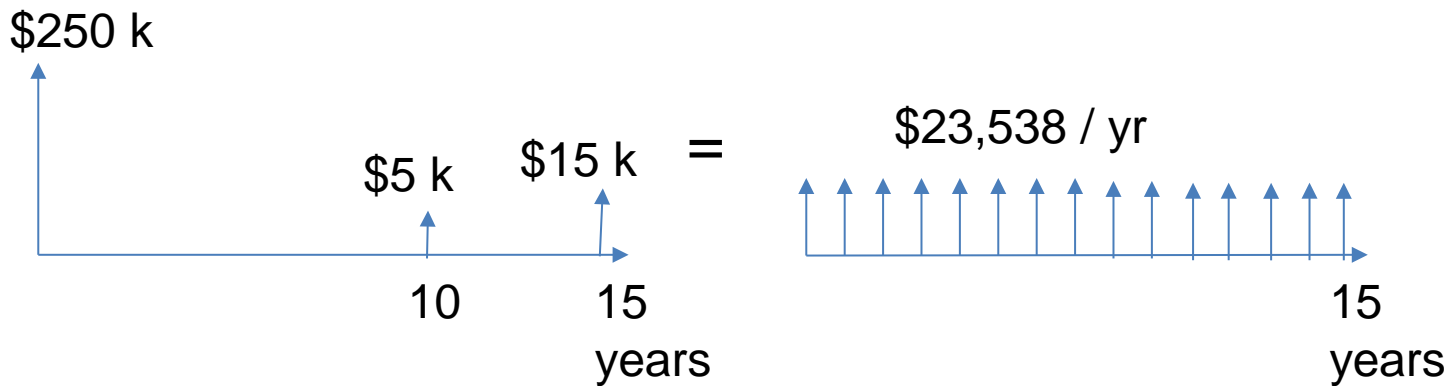
- Evaluates the cost of acceptable pavement performance (\$/lane-mile/year)
- Simpler than Benefit/Cost analysis, since difficult to express benefit of extending pavement life in terms of dollars

Performance Measures

- Historical Cost of Pavement Service
 - EUAC (\$ / lane-mile year)
- Expected Cost of Future Pavement Rehab
 - LCCA (\$ / lane-mile year gained)
- ESAL Efficiency
 - Divide EUAC by average ESALs
 - \$ / ESAL



Calculation of EUAC for an asphalt pavement resurfacing (\$250k for 12 year period).



Spending additional \$5k on maintenance in year 10 and \$15k in year 15 results in 12% reduction in annual cost.
(Assumed 4% Discount Rate)

Annual Pavement Cost

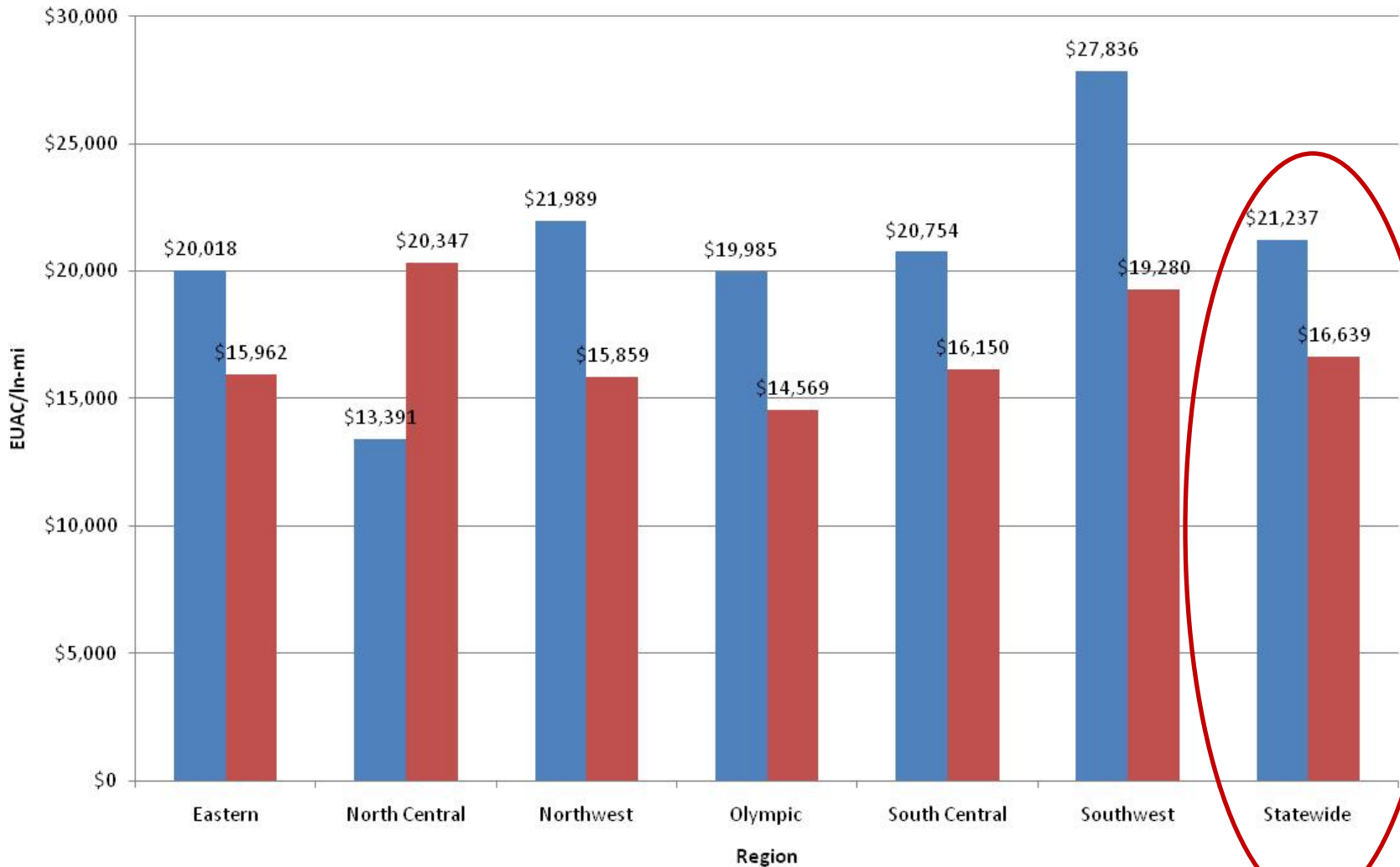
Treatment	Added Life (Years)	Typical Total Cost*	Typical Annual Cost*
Maintenance	2-4	\$5,000	\$1,500
Chip Seal Rehab	6-7	\$40,000	\$7,000
Asphalt Rehab	10-17	\$250,000	\$18,000
Concrete Grind	10-15	\$175,000	\$15,000
Concrete Dowel Bar Retrofit	15-20	\$600,000	\$35,000
Concrete Reconstruction	50-60	\$2,500,000	\$45,000

* Per lane mile

Historical ACP \$ / LMY by Region

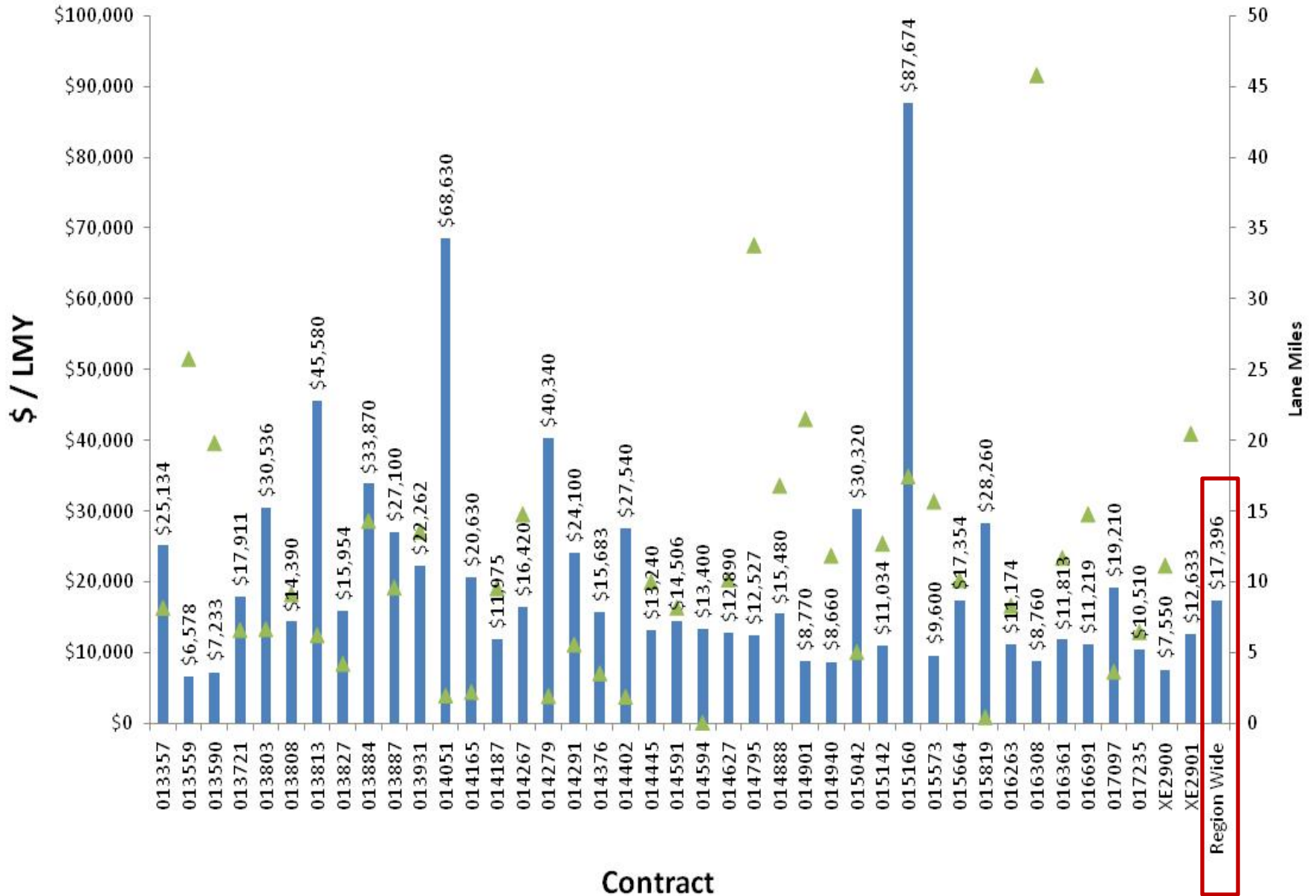
Performance Period

■ Urban ■ Rural



South Central Region ACP \$ / LMY by Contract

■ Weighted Average ▲ Lane Miles



Search: _____ Route: 002 | Direction: I D B | SRMPs: 198.08 - 238.06 | ARMs: 190 - 230 | Length: 40

Select Location | Manage Data Components | Hide Slider

198.08 202.08 206.08 210.05 214.05 218.05 222.06 226.06 230.06 234.06 238.06
 190.00 194.00 198.00 202.00 206.00 210.00 214.00 218.00 222.00 226.00 230.00

<< 1 mi >> Auto Refresh SRMP: 198.08 - 238.06 | ARM: 190.00 - 230.00 |

Search Data Dictionary:

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Lane Configuration

Visual

Show Extra Information? Total Lane Miles: 80

202.08 206.08 210.05 214.05 218.05 222.06 226.06 230.06 234.06

Data Filter:

Economic Performance

Visual

Left Y Axis: Lane Mile Costs
 Right Y Axis: Dollars Per Mile Per ESAL

EUAC Per Lane Mile Dollars Per Mile Per ESAL

198.08 203.08 208.05 213.05 218.05 223.06 228.06 233.06 238.06
 190 195 200 205 210 215 220 225 230