

Summary of Private Capital and Operating Transportation Costs

To better understand the total costs of transportation, VRT worked with Boise State and COMPASS to estimate the how much the residents of Ada and Canyon County pay in owning and operating their vehicles. We then compared thoses costs to the public agency costs included in the long range current Communities in Motion 2.0 plan.

Capital Cost:

Table 1: Average Vehicle Costs Per Household (Thousands)				
	Idaho	Ada County	Canyon County	Ada & Canyon County Total
Households		176	73	248
Registered Vehicles ¹	1,489	348	164,168	512,170
Annual Total Vehicle Sales	\$4,200,000	\$982,000	\$463,000	\$1,445,000
Annual Vehicle Sales/Household		\$5.6	\$6.4	\$5.8
Vehicles/Household ²				2.06
¹ Registered Vehicles as of 2018 (ITD)				
² Average vehicles per household is not used in any equation in this table. This is only for reference.				

First we found the total amount of [households](#) in both Ada and Canyon County (248,000). Then we found the 2018 total [registered vehicles](#) for the state of Idaho, Ada County and Canyon County. Then, we took the annual total vehicle sales (\$4.2mil) and divided it by the households in the year 2018.

Multiplying both Ada and Canyon County households (as shown above in bold) by the annual vehicle sales/household, we were able to get the total capital costs for the two counties (\$1.4 billion). With that number we were able to assume that the distribution of new and used car sales would follow the household car distributions of current registered vehicles in both Ada and Canyon County. For the projected forecasts, we applied a 4% inflation rate based off COMPASS's Communities in Motion 2.0 plan.

Table 2: Predicted Capital Costs After Inflation Based on Model Forecasts					
Inflation			4%	4%	4%
Year	2018	2020	2025	2030	2040
Households	248,400	263,177	300,120	337,080	399,920
Annual Vehicle Sales/Household	\$5,800	\$6,100	\$7,400	\$9,000	\$13,300
Total Capital Costs ¹	\$1,445,000,000	\$1,592,000,000	\$2,209,000,000	\$3,019,000,000	\$5,301,000,000
¹ Future estimates are based on the change in number of households and inflation					

Operating Costs:

We used the data from the [COMPASS household projections](#) and the COMPASS Vehicle Miles Traveled (VMT) for the current and projected years. First, we took the total VMT in Ada and Canyon County (3.6 million) and divided that number by the total amount of households in the counties. This provided the VMT per household (14,500). Then the per mile costs for the average vehicle was calculated at \$0.19 (fuel, maintenance, repairs and tires). These expenses were multiplied by the VMT per household (14,500) and cars per household (2.06). Then, we found the fees per vehicle from the Department of Motor Vehicles (registrations, licenses, and auto insurance fees). This then provided the annual per vehicle costs per household.

Table 4: Operating Costs Per Household Based on Vehicle Miles Travelled

	2019 Estimate	2025 Estimate	2030 Estimate	2040 Estimate
Average Miles Driven Per Year for all households	3,604,000,000	4,298,000,000	4,814,000,000	5,769,000,000
Average Annual Miles driven per household ¹	14,500	14,500	14,500	14,500
Fees Per Vehicle²				
Registration Fees	\$57.00			
License Fees	\$7.01			
Auto Insurance Fees	\$573.00			
Auto per Household³	2.06			
2018 Per Mile Costs - AAA Your Driving Costs Brochure Average Vehicle (pg 9)				
Fuel	\$0.11			
Maintenance, repair & tires	\$0.08			
Total	\$0.19			
¹ Average annual miles/household were rounded. Also assumed they would stay constant through the projections. ² Vehicle fees are assumed to grow ONLY with inflation. ³ Household vehicle count stays the same through projected years.				

Lastly, we applied a 4% inflation rate starting after the year of 2018. We assumed that these are direct out of pocket costs only, and vehicle fees grow only with the inflation rate. We also assumed that the household vehicle count stays the same (2.06) and fuel and maintenance costs increase only with the inflation rate of 4%. The results for 2018 is \$4,100 spent per household on just operating costs. All numbers shown are rounded off to the nearest dollar.

Table 5: Total Operating Costs per Household through Projected Years at a 4% Inflation Rate

Inflation		4%	4%	4%	4%
	2018	2020	2025	2030	2040
Registration Fees¹	\$117	\$117	\$148	\$180	\$267
License Fees	\$14	\$14	\$18	\$22	\$32
Auto Insurance Fees	\$1,181	\$1,228	\$1,494	\$1,818	\$2,692
Average cost Per Mile²	\$0.19	\$0.19	\$0.24	\$0.30	\$0.44
Miles driven *cost per mile	\$2,794	\$2,895	\$3,490	\$4,234	\$6,331
Total - avg household cost on transportation	\$4,100	\$4,300	\$5,200	\$6,300	\$9,300

Source: COMPASS VMT Projections, DMV

Assume a straight line VMT growth between forecasted years.

¹ Registration fees are based on the \$57.00/vehicle multiplied by the 2.06 vehicles per household. Registration and license fees were increased in the years 2025, 2030 & 2040 to keep up with inflation.

² Fuel and maintenance costs increase ONLY with inflation.

Table 6: Total Costs per Household through Projected Years at Different Inflation Rates

	2018	2020 ¹	2025	2030	2040
Annual Household Operating Costs	\$4,100	\$4,200 - \$4,300	\$4,600 - \$5,200	\$5,100 - \$6,300	\$6,200 - \$9,300
Annual Household Capital Costs	\$5,800	\$5,900 - \$6,100	\$6,600 - \$7,400	\$7,200 - \$9,000	\$8,800 - \$13,300
Total Annual Household Costs	\$9,900	\$10,100 - \$10,400	\$11,200 - \$12,600	\$12,300 - \$15,300	\$15,000 - \$22,600

¹ Range is based on 2% to 4% inflation

Conclusion:

The estimated private transportation operating and capital costs for each household in Ada and Canyon County over the next 20 years, after adjusting for inflation, will total as much as \$118 billion. That is between 8 and 10 times more than the total agency costs for funded and unfunded projects in the current long range transportation plan.

Table 7: Projected 2040 Totals of Private investment at Different Inflation Rates

Inflation	4%	3%	2%
Annual Operating Costs	\$48,722,000,000	\$43,227,000,000	\$38,458,000,000
Annual Capitol Costs	\$69,194,000,000	61,641,000,000	\$54,840,000,000
Grand Total	\$118,194,000,000	\$104,868,000,000	\$93,298,000,000

Table 8: Comparison of Household Costs to Public Agency Budgets

Inflation	2%	4%
Household Costs (2040)	\$93,298,000,000	\$118,194,000,000
Public Agency Budgets (2040)	\$11,400,000,000	\$11,400,000,000
Household Costs/Agency Budgets	8.2	10.4

Takeaway:

Considering only the agency budgets on transportation creates an incomplete picture that misses as much as 90% of the total transportation costs. The main cost drivers for household transportation are individual vehicle ownership and the energy costs associated with their travel. Including household costs for transportation could lead public agencies to consider how their investments impact the main cost drivers for transportation and develop a plan that is designed to lower household transportation costs.