



# **COLORADO'S GENUINE PROGRESS INDICATOR (GPI): AN UPDATE**

A Comprehensive Metric of Economic Well-Being in Colorado from 1960-2012

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In January 2014, the Colorado Fiscal Institute released a report calculating, for the first time, a Genuine Progress Indicator — or GPI — for Colorado. GPI is a metric expressed in dollars that is increasingly used by economists to measure *economic well-being* as opposed to merely *economic growth*. In our report, we also discussed why the standard measurement for economic growth, Gross Domestic Product — or GDP — was not a useful way to measure economic well-being.

Our research showed that from 1960 to 2011, Colorado's GDP had tripled, but its GPI had only doubled. In other words, the economic well-being of Coloradans had trailed far behind the state's economic growth.

This report updates Colorado's Genuine Progress Indicator, or the CO-GPI, with 2012 data. And what the data shows is that while there has been a notable uptick in state GPI of 4.2 percent, as expressed in dollars, since our initial report, that gain was diminished by a corresponding increase in the costs of income inequality.

## Understanding GDP and GPI

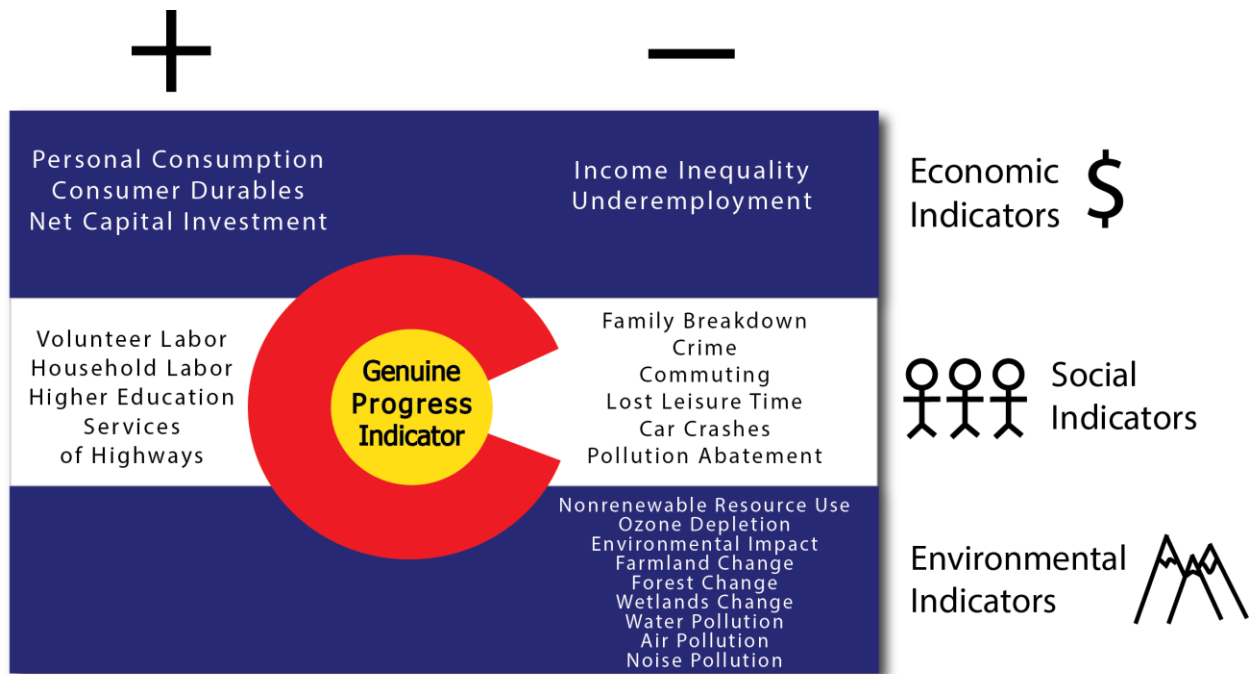
Being a broad measure of economic activity, Gross Domestic Product does not make any distinction between dollars spent that add to our economic well-being and dollars spent that do not. GDP also omits environmental externalities and ignores negative social conditions ranging from family breakdown to crime as well as positives like volunteerism, household labor and economic benefits from farms and forests.

The new metric, the Genuine Progress Indicator, gets closer to the reality of economic well-being by establishing an accounting method that considers factors that contribute to and detract from Coloradans' economic welfare.

GPI starts with a proxy for material welfare — the amount of goods and services Coloradans themselves buy each year — known as personal consumption expenditures. This is then adjusted for income inequality.

With adjusted personal consumption as the baseline, GPI adds the monetary value of activities that add to economic well-being but are not counted in the standard GDP framework. These include things like household labor, volunteer labor and benefits of higher education. GPI then subtracts the monetary cost of the expenditures that we incur to protect the depletion of our natural and social capital. These include things like the cost of auto accidents, costs of crime, lost leisure time and pollution.

Twenty-four indicators were included to generate the Colorado GPI for the years 1960-2011. Our report herein uses 2012 data to update all of these indicators.



## Notes about the update:

All dollars figures in the first release of the CO-GPI were in 2000 terms. For the 2012 update, all dollar figures were adjusted into 2009 constant dollars. Several of the environmental indicators that rely on land cover data get updated every five years. The 2011 data was just recently released and incorporated into the update, which had the effect of slightly changing data between 2007 and 2011 since before the actual 2011 figure was known, extrapolation from the 2007 levels was used.

## Methods Behind the GPI

The GPI framework starts with personal consumption expenditures — which can be thought of simply as the amount of goods and services Coloradans themselves buy each year. This is then adjusted for income inequality. With adjusted personal consumption as the baseline, GPI adds the monetary value of activities that add to economic well-being but are not counted in the standard GDP framework. These include things like: household labor, volunteer labor and benefits of higher education. GPI then subtracts the monetary cost of the expenditures that we incur to protect the depletion of our natural and social capital. These include things like: cost of auto accidents, costs of crime, lost leisure time and pollution. It also subtracts the money Coloradans spent on items that must be spent to abate the negative outcomes that result from the way we live and consume. For example, money spent to dispose of our waste.

**Table 1: Components and Methods of Calculation for Colorado's GPI**

<b>Indicator</b>	<b>Impact on Well-Being</b>	<b>Description</b>	<b>Formula</b>
<b>A. Personal Consumption Expenditure</b>	+ baseline	Starting point for GPI.	Personal Income multiplied by the national ratio of consumption to income spending.
<b>B. Income Distribution</b>	+ or -	Severe income inequality has social and economic costs not captured by the GDP.	Gini coefficient in year divided by Gini coefficient at baseline low value multiplied by 100.
<b>C. Inequality-adjusted Consumption Expenditure</b>		Becomes the baseline from which other GPI components are added or deducted.	Row A divided by Row B.
<b>D. Benefits of Consumer Durables</b>	+	Estimates the services provided by household equipment, which is a more accurate measure of value than just the money spent on such long-term items.	Twenty percent of stock of consumer durables.
<b>E. Cost of Consumer Durables</b>	-	The price of durables is subtracted to avoid double counting the value in their services and personal consumption.	Personal Income multiplied by national percentage of spending on consumer durables.
<b>F. Underemployment</b>	-	Involuntary part-time workers, discouraged workers and the chronically unemployed represent reduced well-being.	Underemployed persons multiplied by unprovided work hours per constrained worker multiplied by average hourly wage.
<b>G. Net Capital Investment</b>	+ or -	To avoid consuming its capital as income, a state must increase or at least maintain the supply of capital for each worker to meet the demands of the future labor force.	Net stock of private nonresidential fixed reproducible capital minus the capital requirement, which is the amount necessary to maintain the level of capital per worker.

<b>H. Water Pollution</b>	-	Impairment of water systems create loss to society but are ignored by GDP.	Total benefit of unimpaired waters multiplied by the percentage of streams, rivers, and lakes that are impaired.
<b>I. Air Pollution</b>	-	Money spent to repair damage to health, infrastructure and environment from poor air quality is ignored by GDP.	Emissions of particulate matters, Nitrogen Oxide, Sulfur Dioxide and Volatile Organic Chemicals multiplied by their respective costs per ton.
<b>J. Noise Pollution</b>	-	The World Health Organization (WHO) produced an estimate for damaged caused by noise pollution in U.S.	Ratio of Coloradans living in cities compared to Americans living in cities multiplied by the WHO cost of noise pollution.
<b>K. Wetland Change</b>	+ or -	The value of ecosystem services provided by wetlands like flood control, purified water and dust suppression are not counted in GDP.	Acres of lost or gained wetland multiplied by value per acre.
<b>L. Farmland Change</b>	+ or -	Trading farmland for urbanization creates costs like reduced local food supply that aren't captured in the GDP.	Acres of lost or gained farmland multiplied by the farmland value per acre.
<b>M. Forest Cover Change</b>	+ or -	Losing services like flood control, wildlife habitat and recreation from lost forest land are not captured in GDP.	Acres of forest land lost multiplied by value of forests per acre.
<b>N. Environmental Impact</b>	-	GPI tries to quantify the costs from environmental damage associated with climate disruption.	Consumption of energy multiplied by the marginal social cost of carbon dioxide emissions associated with each energy source.
<b>O. Ozone Depletion</b>	-	GPI captures the economic costs of increased exposure to harmful solar radiation.	Chlorofluorocarbon (CFCs) emissions multiplied by cost per ton.

<b>P. Nonrenewable Resource Depletion</b>	-	Depleting nonrenewable resources creates costs for future generations. The GPI tabulates their cost in the year in which they get used.	Consumption of coal, natural gas, and petroleum multiplied by the cost to replace that energy with renewable resources.
<b>Q. Value of Housework</b>	+	An important economic activity that is omitted in GDP which includes meal preparation, cleaning, repairs and parenting.	Total hours of household work multiplied by the wage one would pay to hire someone else to do that equivalent work.
<b>R. Family Breakdown</b>	-	GDP counts the money spent on divorces as positive as well as traditional family bonding activities that are moved to the market economy such as babysitting.	Costs of divorce on parents and children plus the societal cost of television viewing.
<b>S. Crime</b>	-	Harms well-being from medical expenses and damaged property as well as non-monetary mental costs to the victims.	Monetary costs of each crime plus the non-monetary costs to the victims.
<b>T. Pollution Abatement</b>	-	Money spent to restore quality back to a baseline doesn't add to well-being, so spending on air filters and waste treatment only compensates for externalities created by our economic activity.	Spending on automotive air filters and catalytic converters, plus the cost of sewage, plus the cost of solid waste disposal.
<b>U. Volunteer Work</b>	+	Another activity omitted in GDP since no money is exchanged, but nonetheless is an important part of community well-being.	Total hours of volunteer work multiplied by the average hourly wage for volunteers.
<b>V. Lost Leisure Time</b>	-	GPI counts all work as a positive without accounting for the tradeoff of leisure.	People employed multiplied by each year's lost leisure compared to a baseline year multiplied by the average hourly wage rate.

<b>W. Higher Education</b>	+	The GPI captures the indirect personal and societal benefits of an educated population.	Bachelor's degree holders multiplied by the social benefits per bachelor's degree holder.
<b>X. Services of Highways</b>	+	These services are provided by the government but could be sold. Assumes 75 percent of miles are driven for pleasure and 10 percent of net stock is annual value.	Seven-point-five percent of net stock of highways and streets
<b>Y. Cost of Commuting</b>	-	Commuting adds costs that don't necessarily add to well-being but must be incurred.	Miles traveled to work multiplied by the cost per mile for vehicle use, added to the hours spent commuting multiplied by a reduced wage rate, added to spending on public transport fares.
<b>Z. Car Accidents</b>	-	GDP counts the money spent on property and health damage from car crashes as a positive. GPI corrects for this.	Number of fatal accidents, injury accidents and property-damage-only accidents multiplied by their respective costs.

## Change in economic well-being from 2011 to 2012

The Colorado GPI increased by 4.2 percent, or \$1,038 per capita, from 2011 to 2012. This was the biggest one-year increase in GPI since 2000. This was much better than the slight increase of \$54 per capita from 2010 to 2011. The 2012 figure is still below the pre-recession peak in 2007 however.

The increase in GPI was largely driven by a sizable increase in the economic components of the GPI, most of which came from increases in personal consumption and net capital investment as the economy drastically improved. These gains were dampened by an increase in the cost of income inequality.

The environmental components improved by 3.1 percent, or \$262 per capita. This improvement was largely driven by the decreases cost of nonrenewable resource depletion as Colorado used less petroleum and natural gas. The environmental component was also boosted by increases in farmland and forest acreage.

The social components decreased by 4.9 percent, or by \$270 per capita. This was mainly the result of fewer hours spent performing household labor. The cost of lost leisure time and the cost of automobile accidents both increased from 2011, while the value of volunteer hours improved Colorado's GPI.

## Colorado GDP vs. GPI

As shown in figure 1, GDP per capita more than tripled since 1960 while GPI per capita only doubled.

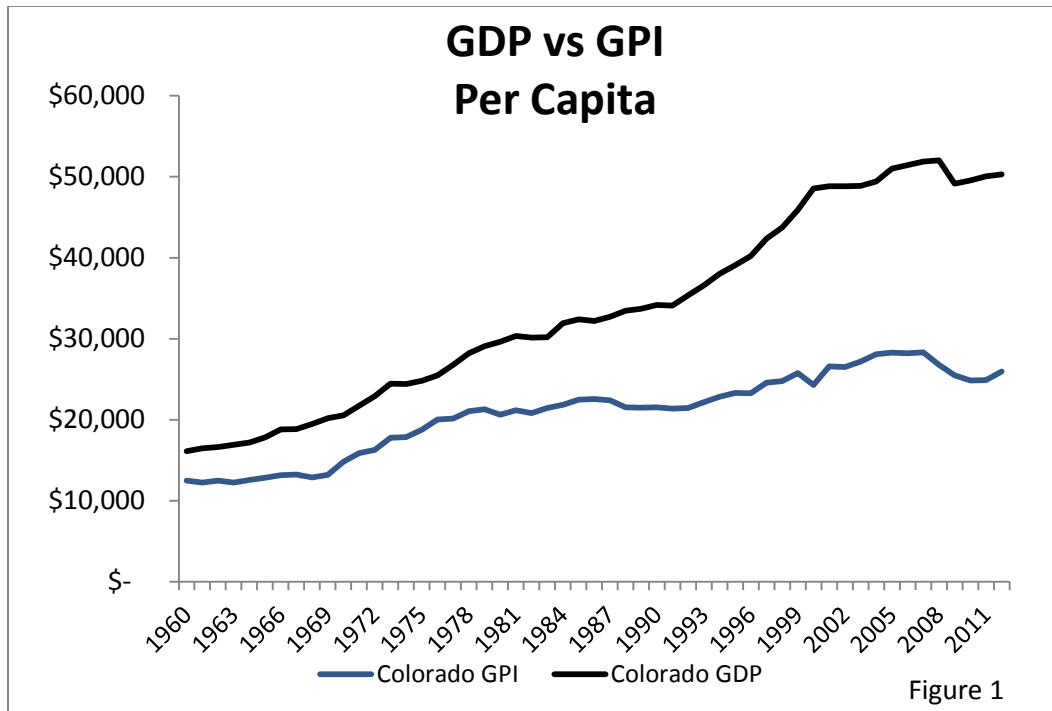




Figure 2 plots the percent change in both GDP and GPI, which illustrates two distinct periods. During the period from 1960 to 1980, GPI per capita growth rates closely matched that of the GDP. Beginning around 1980, growth in GPI per capita began to bottom out while GDP per capita continued with strong growth rates.

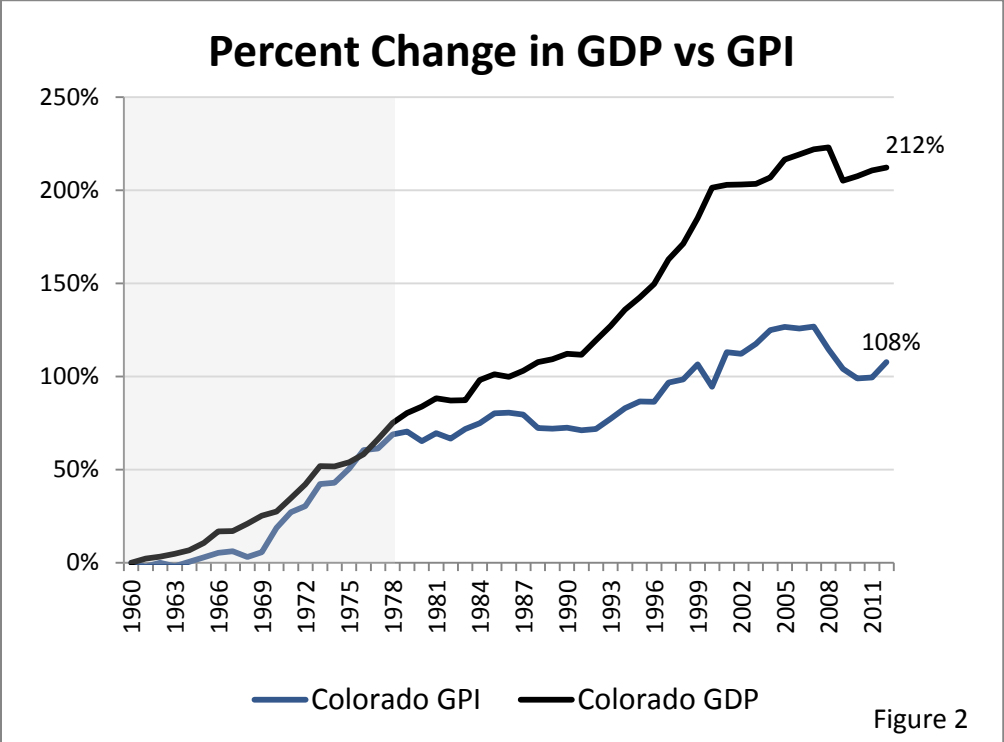


Figure 3 shows the trend of the largest deductions from the Colorado GPI. The cost of nonrenewable resource depletion has always been a large deduction, while other costs like income inequality and the cost of lost leisure time have dramatically increased over the past several decades.

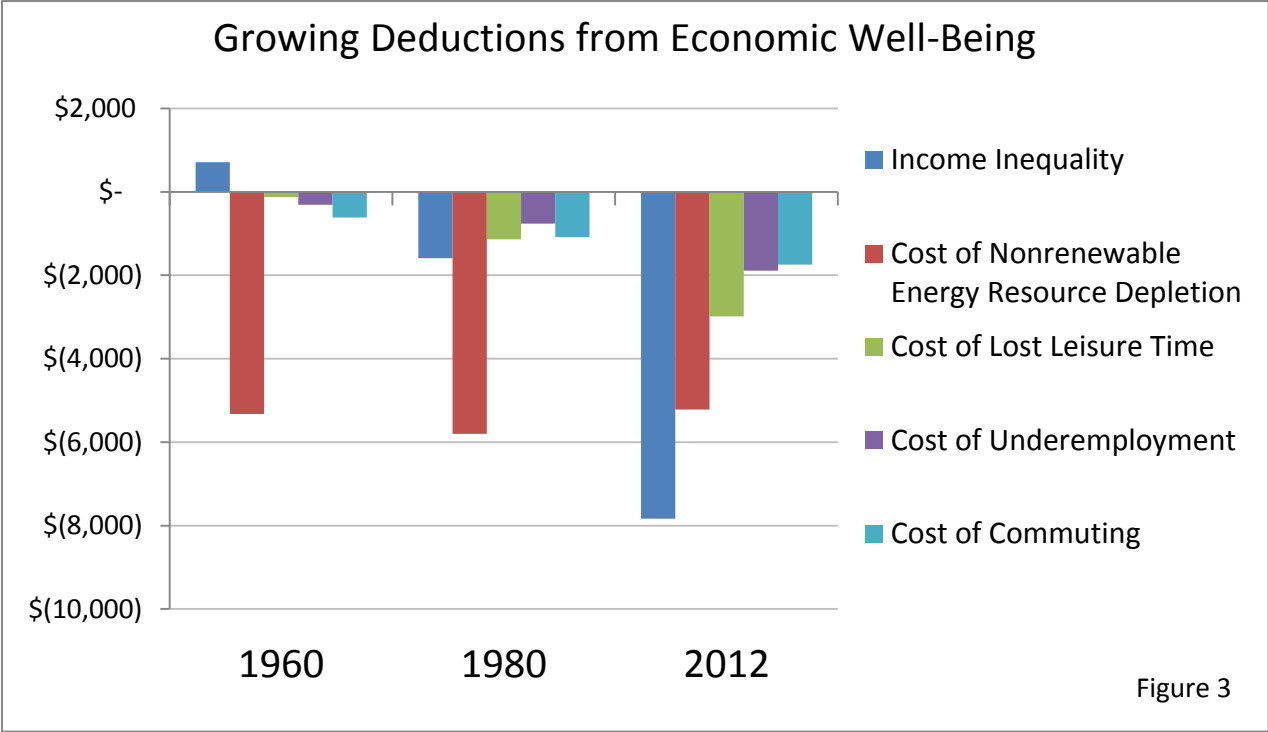


Figure 3

This implies that the benefits from increased economic growth have been partially offset by costs associated with income inequality, natural resource depletion, regrettable expenditures and other breakdowns in social and economic well-being that are captured by the GPI — reaffirming the fact that pure economic data does not tell the whole story

## A look at each of the CO-GPI's indicators for 2012

### **Personal Consumption**

After falling four consecutive years since its peak in 2007 at \$35,920, personal consumption per capita increased 2.9 percent, jumping from \$34,121 to \$35,099, though, this is still below the 2007 peak.

### **Income Inequality**

Since the cost of inequality is the difference between personal consumption and adjusted-personal-consumption, the cost of income inequality per capita actually increased slightly from \$7,688 in 2011 to \$7,837 in 2012 even though there was a slight decrease in the state's Gini coefficient from 0.4588 in 2011 to 0.4576 in 2012.

### **Services of Consumer Durables**

For the fifth straight year, services of consumer durables per capita declined from the 2007 peak. It was \$5,984 in 2012 from \$6,116 in 2011.

### **Cost of Consumer Durables**

Although Colorado still is not buying as many durables per capita as before the recession, durable spending is still up. In 2012, the cost of consumer durables was \$3,690, and in 2011, it was \$3,651.

### **Cost of Underemployment**

Finally pulling out from the Great Recession in 2009, there was a fall in underemployment from 15.1 percent in 2011 to 14.6 percent in 2012, which translates into 11,000 fewer Colorado workers who were underemployed from the previous year. This led to a per capita drop in the cost of underemployment from \$1,947 to \$1,887.

### **Net Capital Investment**

Three years since the dramatic drop of 2009 in U.S. net capital investment, the nation began to reinvest in capital as the economy pulled itself out from the Great Recession. U.S. net capital investment increased from \$257 billion to \$426 billion from 2011 to 2012. The GPI uses a five-year rolling average to smooth out year to year fluctuations. In Colorado, this caused the per capita value of net capital investment to increase to \$1,180 from \$852 in 2011.

### **Cost of Water Pollution**

Overall, the cost of water pollution in 2012 remained fairly similar to 2011. There was a slight decrease in the amount of lakes impaired, from 13.87 percent in 2008 to 13.439 percent in 2012, however because the value of 100 percent clean water is calculated on a per capita basis (multiplying \$162 by the state population), the increase in population balanced out the slight decrease in impaired waters.

### Cost of Air Pollution

Colorado saw a slight decrease in air pollution per capita dropping from \$249 in 2011 to \$242 in 2012. The drop in air pollution costs was driven by a decrease in emissions of Nitrogen Oxide (NOX), which is mostly found in vehicle emissions, and Sulfur Oxide (SO<sub>2</sub>), found mostly in industrial emissions. There was also a slight decrease in the emissions of Volatile Organic Chemicals (VOCs).

	Cost To Economic Well-being per Ton	2011	2012
Nox	\$340	281,783	264,782
PM10	\$678	331,603	331,312
PM2.5	\$4,313	102,899	102,570
SO <sub>2</sub>	\$1,571	57,033	51,699
VOC	\$842	500,016	496,520

### Noise Pollution

There was very little change in the cost of noise pollution. The trend continues that more people are living in urban locations. Eighty-six percent of Coloradans lived in urban areas in 2012.

### Cost of Wetland Change

The National Land Cover Database updates figures every five years. The 2011 figures were recently published, as were some revisions on the 2006 figures. The 2006 figures were revised downward from 1,051,303 wetland acres to 1,025,806 acres. There was a slight decline in wetland acres from 2011 to the revised 2006 figures. Although there was a slight drop in wetland acres from 2006 to 2011, because population grew by a higher margin, the cost of wetland change per capita actually declined from \$1,035 in 2006 to \$944 in 2011.

### Cost of Farmland Change

Farmland acreage data is available every five years. New data was recently released on 2012 acreage levels. Colorado has gained 282,000 acres of farmland since 2007 which decreased the per capita cost of farmland change from \$1,161 in 2007 to \$1,012 in 2012. Colorado has 31.8 million acres of farmland in 2012, which is still down from the acreage in 1960, when Colorado had 38.6 million acres.

### Cost of Forest Cover Change

Colorado gained 2.5 million acres of forest cover since the last official measurement in 2007. This puts Colorado above the 1960 level of forest cover acreage. The year 2012 was the first in which the value of forest cover change was positive in the GPI, meaning GPI improved in 2012 because of the added forest acreage. In 2012, Forest Cover Change added \$21 per capita to the Colorado GPI.

### Cost of Environmental Impact

Total emissions of CO2 from energy consumption declined from 98.2 million tons in 2011 to 97 million tons in 2012. This reduced the cost per capita of environmental impact from \$687 in 2011 to \$683 in 2012.

### **Cost of Ozone Depletion**

No change to very minor deduction in the CO-GPI

### **Cost of Non-Renewable Energy Depletion**

There was a slight decrease in the per capita cost of non-renewable energy depletion, dropping from \$5,398 in 2011 to \$5,220 in 2012. This decline was caused by the decrease in the costs to replace energy consumed outside the electrical sector, since energy consumed the outside electrical sector is much more expensive to replace.

### **Value of Household Work**

There was a slight decrease in hours spent on household activities from 1.77 hours a day in 2011 to 1.74 hours a day in 2012. This amounts to about 11 less hours of household work per year. This led to a decrease in value of household work per capita from \$6,547 in 2011 and \$6,275 in 2012.

### **Cost of Family Changes**

There was no significant change in divorce rate and TV viewing.

### **Cost of Crime**

The cost of crime per capita slightly decreased from \$198 in 2011 to \$197 in 2012, driven primarily by the decrease in the number of sexual assaults. This continues the downward trend in cost of crime since the peak in 1981, when it was at \$413 per capita.

	<b>Cost to Economic Well-being per Incident</b>	<b>2011</b>	<b>2012</b>	<b>Annual Change</b>
Murders	\$ 2,836,085	155	162	4.5%
Sexual Assaults	\$ 121,009	2,285	2,113	-7.5%
Robberies	\$ 9,804	3,299	3,395	2.9%
Aggravated Assaults	\$ 11,620	10,346	10,353	0.1%
Break-And-Enters	\$ 1,886	25,725	26,157	1.7%
Larceny Thefts	\$ 401	96,054	101,021	5.2%
Vehicle Thefts	\$ 5,345	11,002	12,092	9.9%

### **Cost of Pollution Abatement**

This indicator is made up of three factors: air pollution abatement, water pollution abatement and waste disposal. Air pollution abatement increased slightly driven by the rise in car registrations from 4,332,251 to 4,561,896. Water pollution abatement costs declined because of a smaller number of new

septic tanks. The cost of waste removal also declined because about 7,000 fewer tons of waste were removed in 2012. Overall, the per capita cost of personal pollution abatement decreased from \$245 in 2011 to \$241 in 2012.

**Value of Volunteer Work**

The volunteer rate improved in 2012 to 33.1 percent, which was up from 32.6 percent the year prior. There was an overall increase of 10.6 percent in total volunteer hours from 2011. Overall, this caused the per capita value of volunteer work to jump from \$570 in 2011 to \$622 in 2012. Colorado also jumped up in rate of volunteering rankings from the 13<sup>th</sup> best volunteer state to the 12<sup>th</sup> in 2012.

**Cost of Lost Leisure Time**

Lost leisure time per worker remained about the same in 2012, but because more workers had jobs in 2012, that same level of lost leisure time was multiplied by more workers. This caused the cost of lost leisure time per capita to increase from \$2,940 in 2011 to \$2,985 in 2012.

**Value of Higher Education**

There was a 1.36 percent increase in the number of Coloradans with bachelor’s degrees or higher, while there was a commensurate increase in population. Thus, the value of higher education per capita remained stable at \$3,256.

**Services of Highways and Streets**

There was a slight increase in the services of highways per capita from \$969 to \$979 in 2012.

**Cost of Commuting**

The mean travel time to work remained unchanged at 24.5 minutes. There was a slight decrease in the percentage of people carpooling from 9.8 percent to 9.7 percent in 2012. There was also a decrease in the proportion of workers driving to work from 75.5 percent to 74.4 percent. But because the number of employed Coloradans grew in 2012, it meant more workers spent that time commuting. This caused the per capita cost of commuting to increase to \$1,743 from \$1,737.

**Cost of Car Crashes**

The per capita cost of car crashes increases in 2012 to \$340 from \$329.

	2011	2012	Annual Increase
Total Fatalities from Car Crashes	263	274	4.2%
Number of Injuries from Car Crashes	22,706	23,833	5.0%
Number Property Damage Only Crashes	41,321	43,372	5.0%

## APPENDIX A: DETAILED CO-GPI RESULTS

Colorado GPI Components in Billions 2009 Dollars							
YEAR	Genuine Progress Indicator	+	+ or -	+	+	-	-
		Personal Consumption Expenditures	Income Inequality	Adjusted Personal Consumption	Services of Consumer Durables	Cost of Consumer Durables	Cost of Underemployment
1960	22.086	23.460	0.337	24.710	4.356	3.226	0.543
1961	22.532	24.705	0.342	25.655	4.544	3.193	0.653
1962	23.694	25.699	0.337	27.133	4.702	3.503	0.617
1963	23.709	26.634	0.353	26.854	4.934	3.774	0.660
1964	24.699	27.888	0.350	28.309	5.111	4.042	0.664
1965	25.470	29.281	0.353	29.520	5.341	4.383	0.643
1966	26.377	30.515	0.355	30.584	5.609	4.552	0.644
1967	27.184	31.425	0.360	31.040	5.966	4.583	0.684
1968	27.288	33.543	0.366	32.580	6.251	5.103	0.719
1969	28.552	35.260	0.372	33.679	6.626	5.278	0.764
1970	32.970	37.219	0.355	37.219	7.044	5.171	0.956
1971	36.560	40.370	0.362	39.585	7.377	5.897	1.156
1972	39.131	44.293	0.376	41.817	7.802	6.701	1.256
1973	44.324	47.634	0.371	45.669	8.334	7.303	1.280
1974	45.348	48.163	0.384	44.527	8.918	6.728	1.382
1975	48.554	49.265	0.371	47.175	9.353	6.783	1.809
1976	52.695	52.431	0.366	50.960	9.793	7.685	1.810
1977	54.294	55.508	0.376	52.501	10.309	8.347	2.043
1978	58.293	59.249	0.379	55.587	10.923	8.861	1.971
1979	60.621	61.201	0.380	57.266	11.661	8.713	1.881
1980	60.000	61.455	0.384	56.824	12.224	7.929	2.224
1981	63.052	63.362	0.379	59.361	12.470	7.976	2.235
1982	63.681	65.551	0.390	59.695	12.604	7.996	2.963
1983	67.216	70.361	0.393	63.600	12.858	9.077	2.898
1984	69.212	73.104	0.392	66.240	13.317	10.013	2.491
1985	72.150	75.642	0.396	67.832	13.782	10.568	2.737
1986	72.957	77.480	0.406	67.853	14.227	11.264	3.256
1987	73.053	78.011	0.412	67.363	14.707	11.151	3.253
1988	70.187	79.073	0.432	65.082	15.195	11.224	2.946
1989	70.349	81.125	0.443	65.029	15.854	11.161	2.746
1990	71.214	82.066	0.445	65.558	16.491	10.663	2.653
1991	72.323	83.848	0.445	67.010	17.024	10.103	2.853
1992	75.003	87.896	0.448	69.790	17.229	10.593	3.228
1993	80.003	94.108	0.436	76.710	17.345	11.608	3.139
1994	85.074	100.081	0.434	81.972	17.553	12.817	2.910
1995	89.141	105.130	0.436	85.665	17.864	13.408	2.931
1996	91.247	110.055	0.446	87.610	18.315	14.128	3.157
1997	98.700	115.686	0.442	92.995	18.896	14.885	3.043
1998	102.003	122.982	0.451	96.978	19.641	16.250	3.358
1999	108.903	133.136	0.458	103.295	20.758	18.070	3.364
2000	105.045	144.356	0.465	110.323	22.351	19.436	3.167
2001	117.677	149.898	0.446	119.327	24.120	19.958	3.766
2002	118.965	151.859	0.444	121.447	25.790	20.399	4.824
2003	123.005	152.601	0.436	124.469	27.306	19.944	5.507
2004	128.475	157.344	0.434	128.979	28.614	20.227	5.137
2005	131.081	163.545	0.447	130.039	29.833	20.567	4.841
2006	133.070	168.873	0.450	133.380	30.970	20.578	4.502
2007	136.013	172.553	0.452	135.684	31.835	20.545	4.264
2008	130.955	173.278	0.457	134.763	32.330	18.966	5.547
2009	126.672	166.701	0.453	130.792	32.236	17.385	8.826
2010	125.387	171.550	0.457	133.419	31.722	18.254	10.181
2011	127.381	174.588	0.459	135.249	31.293	18.684	9.964
2012	134.528	182.078	0.458	141.421	31.041	19.146	9.791

+ Or -	-	-	-	+ Or -	+ Or -	+ Or -	-	-	-
Net Capital Investment	Cost of Water Pollution	Cost of Air Pollution	Cost of Noise Pollution	Cost of Net Wetland Change	Cost of Net Farmland Change	Cost of Net Forest Cover Change	Cost of Environmental Impact	Cost of Ozone Depletion	Cost of Nonrenewable Energy Resource Depletion
2.069	0.038	1.489	0.132	0.000	0.043	0.000	0.000	0.414	9.416
2.360	0.041	1.525	0.138	0.223	0.089	0.019	0.000	0.462	10.308
2.547	0.043	1.561	0.144	0.447	0.136	0.038	0.000	0.576	10.415
2.868	0.046	1.599	0.150	0.670	0.185	0.058	0.000	0.608	10.252
3.283	0.048	1.637	0.157	0.894	0.237	0.077	0.000	0.630	10.956
3.472	0.050	1.677	0.163	1.117	0.396	0.096	0.027	0.721	11.173
3.664	0.052	1.717	0.170	1.340	0.562	0.115	0.058	0.721	11.602
3.906	0.054	1.758	0.177	1.564	0.732	0.135	0.090	0.759	12.091
3.869	0.058	1.800	0.184	1.787	0.905	0.154	0.133	0.800	13.614
3.851	0.061	1.843	0.192	2.011	1.079	0.173	0.170	0.875	14.098
4.105	0.064	1.888	0.199	2.234	1.179	0.192	0.214	0.946	14.584
4.541	0.069	1.850	0.210	2.457	1.290	0.211	0.252	0.961	14.728
4.836	0.074	1.803	0.221	2.681	1.413	0.231	0.314	1.083	16.149
4.776	0.079	1.756	0.228	2.904	1.543	0.250	0.379	1.154	17.099
4.732	0.080	1.710	0.234	3.128	1.673	0.269	0.413	1.052	16.518
4.857	0.082	1.666	0.241	3.351	1.768	0.288	0.463	0.788	16.313
5.304	0.083	1.636	0.248	3.575	1.871	0.308	0.539	0.730	17.013
5.951	0.085	1.607	0.255	3.798	1.980	0.327	0.619	0.615	17.190
6.415	0.088	1.579	0.261	4.021	2.092	0.346	0.668	0.531	17.220
6.797	0.090	1.551	0.268	4.245	2.594	0.365	0.726	0.432	17.144
6.217	0.092	1.524	0.275	4.468	3.079	0.385	0.764	0.395	16.884
5.614	0.094	1.495	0.279	4.692	3.557	0.404	0.800	0.393	15.887
5.940	0.097	1.467	0.283	4.915	4.045	0.423	0.862	0.312	16.237
6.486	0.099	1.438	0.287	5.138	3.949	0.442	0.884	0.356	16.057
6.612	0.100	1.410	0.291	5.362	3.860	0.458	0.999	0.401	16.814
7.206	0.102	1.382	0.295	5.585	3.778	0.473	1.060	0.360	16.618
7.659	0.102	1.361	0.300	5.848	3.701	0.488	1.099	0.408	16.325
7.431	0.103	1.340	0.304	6.110	3.630	0.504	1.151	0.383	16.648
6.995	0.103	1.319	0.308	6.372	3.639	0.519	1.251	0.462	17.289
6.304	0.104	1.299	0.312	6.634	3.649	0.535	1.321	0.365	17.328
5.842	0.105	1.278	0.316	6.897	3.658	0.550	1.406	0.216	17.586
5.707	0.107	1.296	0.324	7.159	3.667	0.566	1.488	0.180	18.441
5.998	0.108	1.314	0.332	7.421	3.676	0.581	1.564	0.158	18.492
6.478	0.110	1.332	0.340	7.075	3.876	0.618	1.713	0.131	20.001
7.527	0.111	1.350	0.347	6.728	4.083	0.656	1.791	0.080	19.875
8.769	0.112	1.368	0.355	6.381	4.297	0.693	1.847	0.035	20.294
10.060	0.112	1.386	0.363	6.035	4.517	0.730	1.986	0.001	21.251
11.210	0.113	1.316	0.370	5.688	4.744	0.767	2.037	0.001	20.983
12.599	0.113	1.347	0.378	5.341	5.010	0.805	2.182	0.000	21.994
13.022	0.114	1.119	0.386	4.995	5.280	0.842	2.266	0.000	22.222
12.710	0.114	1.294	0.393	4.648	5.550	0.879	2.501	0.001	23.430
12.304	0.114	1.120	0.398	4.301	5.823	0.916	2.778	0.000	25.893
12.250	0.114	1.583	0.404	4.418	6.101	0.916	2.773	0.000	25.681
12.349	0.113	1.522	0.409	4.534	6.004	0.916	2.875	0.000	25.849
13.100	0.111	1.469	0.414	4.651	5.902	0.916	3.020	0.000	26.638
13.490	0.111	0.863	0.420	4.767	5.798	0.916	3.143	0.000	27.361
12.820	0.110	0.903	0.425	4.884	5.690	0.916	3.250	0.000	27.375
9.915	0.110	0.950	0.431	4.886	5.580	0.745	3.436	0.000	28.353
7.496	0.110	0.988	0.436	4.888	5.518	0.574	3.453	0.000	28.431
5.394	0.111	1.061	0.442	4.891	5.454	0.402	3.398	0.000	27.929
4.301	0.111	1.141	0.447	4.893	5.388	0.231	3.568	0.000	28.601
4.362	0.111	1.275	0.453	4.895	5.322	0.060	3.515	0.000	27.621
6.123	0.113	1.257	0.458	4.897	5.255	-0.111	3.543	0.000	27.080



+	-	-	-	+	-	+	+	-	-
Value of Housework	Cost of Family Changes	Cost of Crime	Cost of Personal Pollution Abatement	Value of Volunteer Work	Cost of Lost Leisure Time	Value of Higher Education	Services of Highways and Streets	Cost of Commuting	Cost of Motor Vehicle Crashes
7.433	0.434	0.304	0.347	0.850	0.219	1.095	0.714	1.092	1.444
7.868	0.475	0.345	0.360	0.887	0.207	1.123	0.753	1.159	1.461
8.084	0.515	0.403	0.371	0.913	0.191	1.162	0.811	1.219	1.478
8.312	0.555	0.393	0.381	0.931	0.170	1.212	0.865	1.271	1.495
8.570	0.598	0.369	0.391	0.947	0.149	1.276	0.898	1.335	1.511
8.706	0.632	0.326	0.400	0.954	0.124	1.352	0.967	1.386	1.528
9.191	0.673	0.370	0.410	0.965	0.100	1.440	1.046	1.489	1.545
9.984	0.712	0.393	0.421	0.987	0.071	1.541	1.113	1.567	1.562
11.194	0.752	0.528	0.434	1.019	0.038	1.655	1.156	1.672	1.755
12.257	0.786	0.575	0.445	1.041	0.000	1.781	1.240	1.778	1.797
13.620	0.809	0.714	0.457	1.069	0.044	1.961	1.374	1.880	1.891
15.698	0.847	0.770	0.477	1.107	0.095	2.071	1.391	2.031	1.909
18.654	0.882	0.931	0.504	1.156	0.159	2.235	1.444	2.251	2.161
21.359	0.943	0.935	0.530	1.200	0.232	2.411	1.609	2.445	1.972
21.819	0.975	0.835	0.552	1.222	0.609	2.600	1.953	2.442	1.821
22.760	1.000	0.971	0.577	1.241	0.990	2.801	1.767	2.449	1.861
24.864	1.059	0.906	0.600	1.260	1.456	3.015	1.648	2.602	2.030
25.976	1.157	0.940	0.629	1.280	1.977	3.241	1.568	2.766	2.199
27.359	1.098	1.051	0.675	1.299	2.607	3.480	1.541	2.994	2.248
27.595	1.095	0.988	0.673	1.318	3.210	3.732	1.639	3.130	2.281
27.503	1.153	1.122	0.726	1.338	3.319	3.884	1.805	3.160	2.296
28.422	1.172	1.228	0.732	1.357	3.556	4.272	1.896	3.306	2.535
29.775	1.148	1.052	0.782	1.376	3.776	4.562	1.870	3.434	2.350
29.871	1.233	1.088	0.784	1.396	3.945	4.863	1.747	3.515	2.412
30.248	1.209	1.030	0.815	1.415	4.228	5.178	1.687	3.689	2.314
31.266	1.236	1.084	0.825	1.434	4.414	5.504	1.720	3.777	2.300
32.285	1.239	1.242	0.826	1.454	4.571	5.844	1.827	3.839	2.321
32.418	1.219	1.084	0.839	1.473	4.639	6.195	1.902	3.827	2.254
32.311	1.225	1.053	0.872	1.492	4.771	6.560	1.881	3.865	2.110
32.313	1.222	0.930	0.895	1.511	4.930	6.937	1.891	3.923	2.136
32.085	1.213	0.954	0.880	1.614	5.194	7.434	1.924	4.004	2.161
32.555	1.259	1.153	0.890	1.716	5.541	7.728	1.913	4.200	2.105
33.655	1.297	1.234	0.907	1.818	6.014	8.143	1.921	4.486	2.146
33.788	1.315	1.192	0.961	1.920	6.494	8.570	1.949	4.770	2.085
33.139	1.335	1.136	0.930	2.023	6.978	9.010	2.054	5.052	2.025
32.997	1.371	1.155	0.994	2.125	7.487	9.462	2.298	5.345	1.964
33.559	1.386	1.073	1.090	2.227	8.032	9.926	2.358	5.659	1.903
34.582	1.416	0.978	1.045	2.329	8.834	10.404	2.504	6.144	1.856
35.949	1.460	1.083	1.047	2.432	9.813	10.893	2.595	6.741	2.162
37.604	1.503	1.035	1.128	2.534	10.798	11.396	2.722	7.329	1.978
27.221	1.489	0.921	1.069	2.636	10.861	11.875	2.858	7.294	1.882
33.670	1.527	1.046	1.248	2.738	11.195	12.138	2.918	7.382	2.071
33.733	1.550	1.143	1.124	2.390	11.532	12.562	2.990	7.471	2.163
32.872	1.534	1.141	1.132	3.143	11.961	12.987	3.000	7.732	1.947
32.759	1.578	1.213	1.141	2.989	12.442	13.411	3.372	7.943	1.947
32.502	1.598	1.174	1.157	3.292	12.864	13.769	3.654	8.128	1.790
31.854	1.616	1.099	1.181	2.464	13.566	13.993	4.062	8.413	1.964
33.375	1.597	1.025	1.192	3.940	14.107	14.669	4.437	8.728	1.894
31.513	1.612	1.027	1.198	2.897	14.375	15.197	4.632	8.944	1.806
34.178	1.640	1.044	1.198	3.258	14.712	15.467	4.619	9.034	1.745
34.052	1.671	0.941	1.233	3.299	14.909	15.846	4.745	8.764	1.659
33.500	1.769	1.014	1.256	2.916	15.043	16.662	4.957	8.890	1.683
32.550	1.803	1.023	1.254	3.225	15.486	16.889	5.078	9.040	1.764