

**ECONOMIC AND FISCAL IMPACTS OF
PROPOSED JOB CREATION PROGRAM
IN THE STATE OF COLORADO**

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January 2, 2009

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EXECUTIVE SUMMARY

The Governor's proposed job growth incentive program will have a positive impact both economically and fiscally on the state of Colorado. This program promotes growth in Colorado firms, and incents outside firms to relocate to the state. It incentivizes job creation from firms paying higher-than-average wages (110% of average), generally resulting in the creation of primary jobs in industries that export goods and services nationally or globally, thus bringing greater outside investment to the state of Colorado. In addition, these firms have a profound multiplier effect on Colorado's economy, leading to additional employment along the supply chain from industry expenditures and sales, as well as increased household spending when employees receive their paychecks.

Increased employment and industry activity will result in positive tax revenues to the state, net of program costs and costs of providing government services to residents and employees. While other government entities in the state do not bear the cost of the program, counties, cities, school districts, and special districts stand to fiscally benefit from increased industry activity through increased sales and property tax revenues generated from the businesses and employees.

The BRD utilized a universally accepted input-output model acquired by the state of Colorado in the 1990s, customized with current data and assumptions to show the costs and benefits associated with the job growth creation program. The model employs conservative assumptions, positing both the potential revenues and costs associated with increased employment. Using 50% of the employer's FICA contribution as the *metric* for the incentive ensures that the state's incentive contribution is always lower than what is directly received through individual employee income taxes (4.63% vs. 3.83%), and grows proportionally through time.

Assuming 20 new employees (the base qualifier) are added in an industry that pays higher-than-average wages, the model estimates \$5.6 million in new direct output in Colorado in 2009. Total output (direct and indirect) would increase by \$12.4 million. Direct state tax revenues, net of incentive costs and costs of providing state government to these new employees and residents, totaled \$9,425 in 2009. Total government revenues at the state, county, city, school district, and special district levels collectively totaled \$500,000.

While forecasts produced by the model show the overall program as a net positive to the state, the magnitude of benefit is dependent on the level of employment and particular industry of employment.

INTRODUCTION

This study examines a job growth incentive program proposed in the state of Colorado as it relates to employment, wages, taxes, and state GDP. The analysis examines impacts over a five-year period.

The tax structure in Colorado disaggregates sales and property taxes to numerous governmental agencies, including state, county, and city governments, schools districts, special districts, community colleges, and others. Thus, tax revenues garnered through industry growth have impacts on multiple agencies. The state is the sole recipient of income taxes, while sales taxes are shared by multiple entities. The state does not receive property taxes.

The purpose of the study and methodology are discussed below. The impact of job incentive program on current and projected output (page 4), employment (page 5), earnings (page 7), and taxes (page 8) are detailed. Concluding remarks (page 10) round out the paper.

PURPOSE OF THE STUDY

The Business Research Division at the Leeds School of Business was asked by the Colorado Governor's Office of Economic Development and International Trade (OEDIT) to conduct a study examining the economic and fiscal impacts of the proposed job growth incentive program. The study was designed to model the impact of the incentive on total output, employment, and wages of industries that typically pay higher than average wages; as well as the indirect and fiscal impacts of these industries.

This study was completed by Dr. Richard L. Wobbekind, Executive Director of the Business Research Division and Dean for MBA and Enterprise Programs; Gary Horvath, Managing Director of the BRD; and Brian Lewandowski, Research Analyst at the BRD.

METHODOLOGY

The impact of the job creation program depends on the level of interest by employers (i.e., the number of jobs that are actually created due to program incentives), as well as meeting the EDCC's qualifications. Given this uncertainty, this model does not forecast the expected total job creation, but rather models the impact of 20 new employees, which is the minimum for a company to qualify for incentives. Detailed explanations of each line in the model, including assumptions, are provided in Appendix 1 and Appendix 2.

This model is driven off employment in 23 separate industries that pay higher than average wages in Colorado (*See Appendix 3 for a list of the 23 industries*). These 23 industries represent 43% of Colorado's GDP and 25% of employment. The actual proposed program is not industry specific, but given the wage qualifier, it is likely that almost any job creation would naturally transpire in one of these sectors. Otherwise, the implication is that a company would be paying a disproportionate amount for labor compared to their peers. Average, minimum, maximum, and median statistics generated from the 23 industry results

were used to produce one output that represents all industries with higher than average wages.

The BRD acquired Regional Input-Output Modeling System (RIMS II) multipliers for Colorado from the Bureau of Economic Analysis that correspond to North American Industry Classification System (NAICS) two-digit subsector codes. Direct industry output multipliers indicate the number of employees per million in industry output, or inversely, the level of output per employee. Output driven by multipliers was compared to state GDP divided by state employment.

Indirect output refers to increased economic activity generated in the supply chain of the direct industry, as well as increased household (induced) spending. For instance, increased sales of finished lumber at a retail outlet would result in increased activity in forestry, transportation, manufacturing, and perhaps wholesale trade prior to touching the retail outlet. Some of that activity will flow to households through wages, which will be re-spent in the economy on consumer goods, rents, etc. (the induced effect). Indirect and induced are referred to simply as “indirect” in this study. Indirect industry output was calculated using output multipliers.

Direct industry employment was fixed in the model at 20 employees, regardless of the industry. Indirect employment, however, varied depending on the specific industry because some industries have a more labor-intensive supply chain than others. Indirect employment was driven off direct employment using employment multipliers. Scenarios were modeled for greater levels of employment, and the results may be found in Appendix 4.

Direct wages were retrieved from the Colorado Department of Labor and Employment, Quarterly Census of Employment and Wages for 2007, and grown at the historical compound annual growth rate that occurred in the state from 2001-2007. Indirect wages were derived from total direct wages (average wage x direct employment) using wage multipliers.

This study examined income (nonfederal), sales, and property taxes generated by the company operations (a.k.a. “corporate”), direct employees, and indirect employees. Corporate income taxes were calculated by dividing total corporate income taxes revenues reported in Colorado’s Comprehensive Annual Financial Report (CAFR) by total employment in the state. This yields corporate taxes on a per employee basis. Corporate sales taxes were estimated taking 30% of total direct output, a conservative estimate of firms’ expenditures on taxable goods in the state, multiplied by the average county, city, and special district sales tax rates. Corporate property taxes were estimated by dividing the state’s total commercial assessed property values by total employment in the state, multiplied by the average property mill levy for counties, cities, school districts, and special districts.

Employee income taxes were calculated by multiplying the state income tax rate by total earnings. Off-site employee taxes included sales and property. Taxable expenditures were derived by multiplying average wages by the percentage of income spent on taxable goods, as indicated in the Consumer Expenditures Survey produced by the Bureau of Labor Statistics. Taxable expenditures were then multiplied by average county, city, and special district sales tax rates. Total assessed residential property values were divided by total population, then multiplied by the average county, city, school district, and special district mill levies to estimate residential property taxes. Similar iterations were applied to indirect employee consumer spending and property taxes.

TOTAL OUTPUT

DIRECT AND INDIRECT OUTPUT IS ESTIMATED AT \$5.6 MILLION AND \$6.8 MILLION, RESPECTIVELY, IN 2009, GROWING TO \$27.9 MILLION AND \$34.0 MILLION IN 2013 (TABLE 1 AND TABLE 2). TOTAL OUTPUT (DIRECT AND INDIRECT) IS ESTIMATED AT \$12.4 MILLION IN 2009, WITH 13 OF THE 23 INDUSTRIES BETWEEN \$4 AND \$12 MILLION (

The following histogram plots the results from 23 industries in bins of total output (direct and indirect). At minimum, the addition of 20 new employees in one industry would have a \$2.7 million economic impact on Colorado. Conversely, one high-impact industry would have a \$36 million economic impact on the state. Most industries modeled (70%) had between a \$4 million and \$16 million economic impact on the state. (See Figure 1.)

Figure 1). The magnitude of change from year to year is due primarily to the step employment growth in the model (20 direct employees per year), and in part to model growth assumptions (inflation, appreciation, etc.). Variability between minimum and maximum output is attributable to variances in industry output per employee (i.e., the oil and gas extraction sector has higher output per employee than performing arts, museums, and related).

Total output per employee for industries paying higher than average wages was calculated at \$147,381 (2009), compared to \$103,081 in Colorado for all industries (2007) and \$101,525 in the United States for all industries (2007).

TABLE 1: DIRECT OUTPUT, 2009-2013

Direct Output	2009	2010	2011	2012	2013
<i>Average</i>	\$5,582,845	\$11,165,689	\$16,748,534	\$22,331,379	\$27,914,223
<i>Min</i>	1,060,800	2,121,599	3,182,399	4,243,199	5,303,999
<i>Max</i>	15,880,578	31,761,156	47,641,734	63,522,312	79,402,890
<i>Median</i>	4,753,304	9,506,607	14,259,911	19,013,214	23,766,518

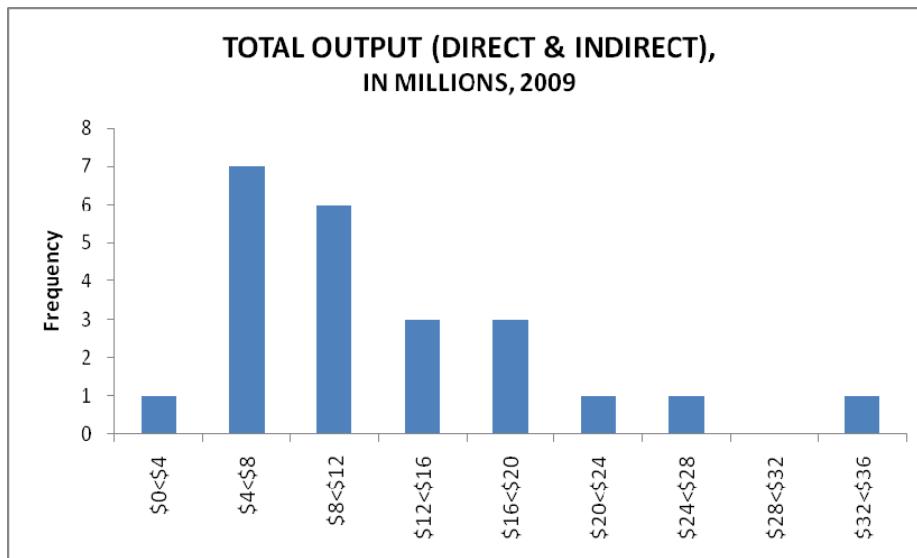
TABLE 2: INDIRECT OUTPUT, 2009-2013

Indirect Output	2009	2010	2011	2012	2013
<i>Average</i>	\$6,795,848	\$13,591,696	\$20,387,544	\$27,183,391	\$33,979,239
<i>Min</i>	1,611,355	3,222,710	4,834,064	6,445,419	8,056,774

<i>Max</i>	19,723,678	39,447,356	59,171,034	78,894,712	98,618,390
<i>Median</i>	5,315,021	10,630,043	15,945,064	21,260,085	26,575,107

The following histogram plots the results from 23 industries in bins of total output (direct and indirect). At minimum, the addition of 20 new employees in one industry would have a \$2.7 million economic impact on Colorado. Conversely, one high-impact industry would have a \$36 million economic impact on the state. Most industries modeled (70%) had between a \$4 million and \$16 million economic impact on the state. (See Figure 1.)

FIGURE 1: HISTOGRAM OF TOTAL OUTPUT (DIRECT AND INDIRECT), 2009



EMPLOYMENT

Direct employment was modeled at 20 FTEs in 2009, growing in steps of 20 new full-time equivalent employees (FTEs) each year through 2013 (Table 3). The selection of 20 FTEs was intended to model the minimum impact of the program as 20 FTEs is one qualifier for the tax incentives. Scenarios were modeled for greater levels of employment, and the results may be found in Appendix 4.

INDIRECT EMPLOYMENT IS A FUNCTION OF DIRECT EMPLOYMENT AND THE EMPLOYMENT MULTIPLIER BASED ON THE DIRECT INDUSTRY. SOME INDUSTRIES HAVE A LABOR-INTENSIVE SUPPLY CHAIN (E.G., 1 OIL AND GAS EXTRACTION JOB SUPPORTS 4.58 INDIRECT JOBS), WHILE OTHERS ARE LESS LABOR-INTENSIVE (E.G., ONE AMBULATORY HEALTH-CARE SERVICES JOB SUPPORTS 1.3 INDIRECT JOBS). INDIRECT EMPLOYMENT IS EXPECTED TO GROW FROM 64 NEW FTES IN 2009 TO 320 IN 2013 (

Table 4). For most industries, total employment (direct and indirect) increased by 60 to 80 employees in 2009 (The following histogram plots the results from 23 industries in bins of total employment (direct and indirect). At minimum, the addition of 20 new employees in

one industry would result in 38 total new jobs in the state. Conversely, one labor-intensive industry would have result in 139 total new employees in Colorado. Most industries modeled (57%) resulted in between 40 and 80 new total jobs. (See Figure 2.) Figure 2).

TABLE 3: DIRECT EMPLOYMENT, 2009-2013

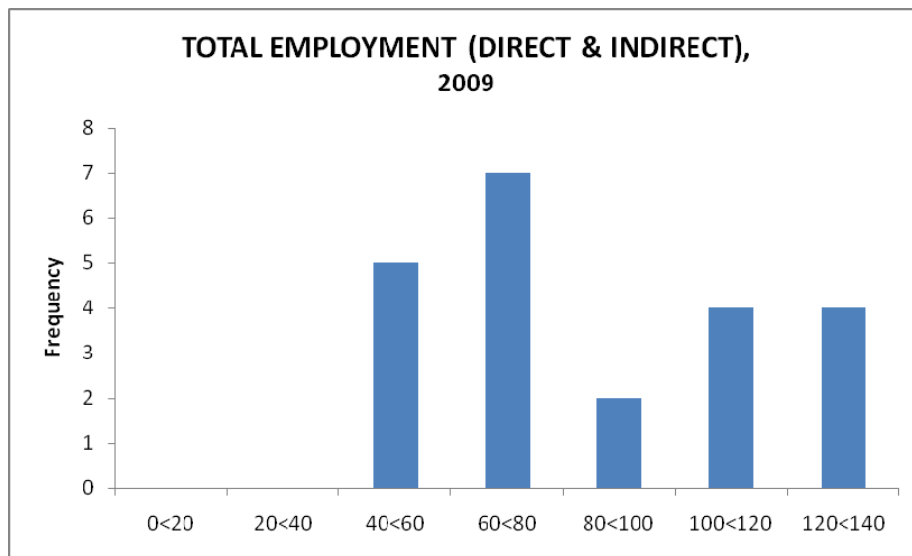
Direct Employment	2009	2010	2011	2012	2013
<i>Average</i>	20	40	60	80	100
<i>Min</i>	20	40	60	80	100
<i>Max</i>	20	40	60	80	100
<i>Median</i>	20	40	60	80	100

TABLE 4: INDIRECT EMPLOYMENT, 2009-2013

Indirect Employment	2009	2010	2011	2012	2013
<i>Average</i>	64	128	192	256	320
<i>Min</i>	18	36	53	71	89
<i>Max</i>	119	238	357	476	595
<i>Median</i>	53	105	158	210	263

The following histogram plots the results from 23 industries in bins of total employment (direct and indirect). At minimum, the addition of 20 new employees in one industry would result in 38 total new jobs in the state. Conversely, one labor-intensive industry would have result in 139 total new employees in Colorado. Most industries modeled (57%) resulted in between 40 and 80 new total jobs. (See Figure 2.)

FIGURE 2: HISTOGRAM OF TOTAL EMPLOYMENT (DIRECT AND INDIRECT), 2009



WAGES

The average wage in Colorado in 2007 was \$47,276 (QCEW), thus at 110%, the average wage for that year to qualify for the proposed incentive would have been \$52,004. Using the 2001-2007 wage growth in Colorado of 2.7%, 2009 wages would be \$49,864, and thus average wages to qualify for the program would be \$54,850.

While the proposed program is not limited to certain industries, for the sake of illustration, this study modeled industries with average wages at least 110% of the state average. There were 23 such industries in 2007. *See Appendix 3 for a list of the 23 industries.*

Direct average wages in the model averaged \$82,021, and ranged from \$56,123 to \$134,181, and were a function of actual observed wages in the 23 industries in 2007, inflated for 2009-2013 (Table 5). Indirect average wages resulting from the model averaged \$47,416, and ranged between \$29,369 and \$91,937 in 2009 (Table 6).

TABLE 5: DIRECT AVERAGE WAGES, 2009-2013

Direct Wages	2009	2010	2011	2012	2013
<i>Average</i>	\$82,021	\$84,235	\$86,510	\$88,846	\$91,244
<i>Min</i>	56,123	57,638	59,194	60,793	62,434
<i>Max</i>	134,181	137,803	141,524	145,345	149,270
<i>Median</i>	77,920	80,023	82,184	84,403	86,682

TABLE 6: INDIRECT AVERAGE WAGES, 2009-2013

Indirect Wages	2009	2010	2011	2012	2013
<i>Average</i>	\$47,416	\$48,696	\$50,011	\$51,361	\$52,748
<i>Min</i>	29,369	30,162	30,977	31,813	32,672
<i>Max</i>	91,937	94,419	96,968	99,587	102,275
<i>Median</i>	42,213	43,353	44,523	45,725	46,960

COST OF GOVERNMENT

Regardless of the tax credits, the state must still provide government services to new employees and residents that result from the proposed incentives. The cost of state government for employees generated by the incentives is estimated at \$17,880 in 2009, growing with employment and inflation (Table 7). These new employees are also residents in the state, consuming state government resources primarily utilized by residents. The residential cost of government for these new workers and their families is estimated at \$49,889 in 2009.

TABLE 7: COST OF GOVERNMENT, 2009-2013

Cost of Government	2009	2010	2011	2012	2013
Residents	-\$49,889	-\$102,772	-\$158,783	-\$218,062	-\$280,754
Employees	-17,880	-36,832	-56,906	-78,151	-100,619

Total	-67,769	-139,604	-215,689	-296,213	-381,374
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TAXES

TOTAL DIRECT AND INDIRECT TAXES GENERATED BY THE JOB CREATION INCENTIVE, NET OF THE TAX CREDITS, WERE ESTIMATED AT \$500,000 IN 2009, GROWING TO \$2.7 MILLION IN 2013 (TABLE 8). STATE TAXES FROM DIRECT EMPLOYMENT AND OPERATIONS, NET OF PROGRAM COSTS AND COST OF GOVERNMENT, WAS \$9,425 IN 2009, GROWING TO \$18,251 IN 2013 (TABLE 9). NET STATE GOVERNMENT REVENUES RANGED BETWEEN -\$33,985 IN 2009 TO \$104,564. MOST INDUSTRIES GENERATE FLAT, TO SLIGHTLY POSITIVE, NET DIRECT STATE REVENUES (

The following histogram plots the results from 23 industries in bins of direct state sales taxes. At minimum, the addition of 20 new employees in one industry would result in a deficit of \$34,000, net of tax incentives and the cost of providing state government services to new workers and their families. Conversely, a high tax-yielding industry would result in \$105,000 in new state tax revenues. Most industries modeled (65%) resulted in between - \$20,000 and \$23,000 in new state tax revenues. (See Figure 3.)

Figure 3).

This model assumes that each employee is responsible for paying the cost of government for 2.15 residents in the state. Thus, cost of government is tabulated for each employee, as well as for 2.15 residents per employee. Net direct state tax revenues fall negative for some industries given the conservative cost of government calculation.

TABLE 8: NET TOTAL TAXES (ALL LEVELS), 2009-2013

Net Tax Collected	2009	2010	2011	2012	2013
<i>Average</i>	\$499,958	\$1,018,343	\$1,555,928	\$2,113,513	\$2,691,929
<i>Min</i>	222,557	453,342	692,704	941,001	1,198,609
<i>Max</i>	1,137,941	2,315,298	3,533,709	4,794,871	6,100,547
<i>Median</i>	422,413	863,641	1,324,461	1,805,682	2,308,140

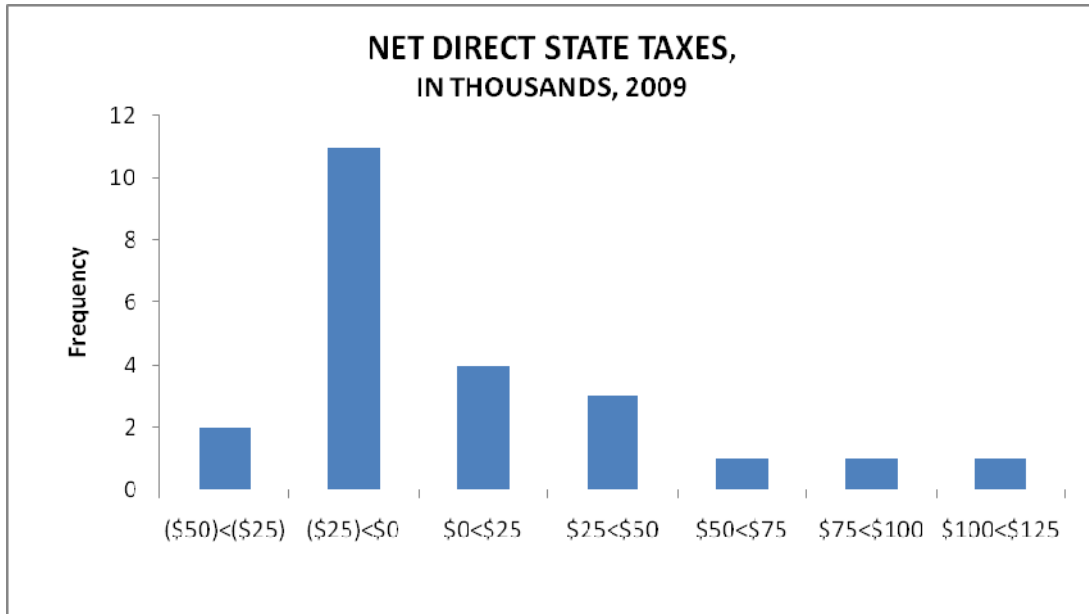
TABLE 9: NET DIRECT STATE TAXES, 2009-2013

Net Direct Fiscal Gain	2009	2010	2011	2012	2013
<i>Average</i>	\$9,425	\$16,096	\$19,881	\$20,647	\$18,251
<i>Min</i>	-33,985	-70,944	-111,017	-154,348	-201,087
<i>Max</i>	104,564	206,672	306,206	403,045	497,061
<i>Median</i>	-5,408	-13,868	-24,201	-37,067	-52,416

The following histogram plots the results from 23 industries in bins of direct state sales taxes. At minimum, the addition of 20 new employees in one industry would result in a deficit of \$34,000, net of tax incentives and the cost of providing state government services to new workers and their families. Conversely, a high tax-yielding industry would result in

\$105,000 in new state tax revenues. Most industries modeled (65%) resulted in between - \$20,000 and \$23,000 in new state tax revenues. (See Figure 3.)

FIGURE 3: HISTOGRAM OF NET DIRECT STATE TAXES, 2009-2013



CONCLUSION

The proposed job growth incentive program will stimulate economic growth, fuel job growth in industries paying higher-than-average wages, and increase public revenues at various levels of government in Colorado. At minimum, taking the average impact from 23 industries with higher-than-average wages in the state, if one company adds 20 employees per year, the direct economic benefit is \$5.6 million and total economic benefit is \$12.4 million in 2009. Under this scenario, there will be 84 new direct and indirect jobs in the state, generating \$500,000 in new taxes for the state, counties, cities, school districts, and special districts, combined. The cost of the program to the state would be \$62,746, based on the FICA metric. Direct state taxes generated from the 20 new employees, net of tax incentives and cost of government for these new employees and residents, is estimated at \$9,425.

Scenarios did arise showing a net negative impact on state taxes, albeit small, primarily in industries with low comparative output per employee when only direct employment was considered. It should be noted, however, that in every circumstance, new employment resulted in positive total tax revenues when summing all taxing entities (state, county, city, school district, and special district).

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APPENDIX 1: COLORADO JOB CREATION IMPACT MODEL (OIL & GAS EXTRACTION INDUSTRY EXAMPLE)

This model output is a snapshot of the *Oil and Gas Extraction industry*, one of the 23 industries in the state that pay wages greater than 110% of average. Outputs from this model were averaged for all 23 high-paying industries to formulate the results in the paper.

	B	C	D	E	F	G	H	I
2	GOVERNOR'S JOB CREATION PROGRAM		Average Earnings	110%				
3	- State Analysis -							
4	Oil and gas extraction							
5	Output		2009	2010	2011	2012	2013	5-Year Total
6	Total Output	Base Output	-	11,823,825	23,647,650	35,471,475	47,295,300	
7		New Output	11,823,825	11,823,825	11,823,825	11,823,825	11,823,825	
8		Total Output	11,823,825	23,647,650	35,471,475	47,295,300	59,119,125	59,119,125
9		Additional Output (Multiplier on Base)	-	14,630,801	29,261,602	43,892,403	58,523,204	
10		Additional Output (Multiplier on New Spending)	14,630,801	14,630,801	14,630,801	14,630,801	14,630,801	
11		Total Indirect Output	14,630,801	29,261,602	43,892,403	58,523,204	73,154,005	73,154,005
12		Total Output (Direct and Indirect)	26,454,626	52,909,252	79,363,878	105,818,504	132,273,130	132,273,130
13	Operations		2009	2010	2011	2012	2013	5-Year Total
14	Operations	State Income Taxes	4,344	8,687	13,031	17,375	21,718	65,155
15		<i>New State Income Taxes</i>	4,344	4,344	4,344	4,344	4,344	21,718
16		Operations-Related Taxable Expenditures	3,547,148	7,094,295	10,641,443	14,188,590	17,735,738	53,207,213
17		State Sales Taxes	102,867	205,735	308,602	411,469	514,336	1,543,009
18		<i>New State Sales Taxes</i>	102,867	102,867	102,867	102,867	102,867	514,336
19		County Sales Taxes	43,255	86,510	129,766	173,021	216,276	648,828
20		<i>New County Sales Taxes</i>	43,255	43,255	43,255	43,255	43,255	216,276
21		City Sales Taxes	122,754	245,507	368,261	491,015	613,769	1,841,306
22		<i>New City Sales Taxes</i>	122,754	122,754	122,754	122,754	122,754	613,769
23		Special District Sales Taxes	24,734	49,468	74,202	98,936	123,670	371,009
24		<i>New Special District Sales Taxes</i>	24,734	24,734	24,734	24,734	24,734	123,670
25		County Property Taxes	7,412	14,825	22,237	29,650	37,062	111,186
26		<i>New County Property Taxes</i>	7,412	7,412	7,412	7,412	7,412	37,062
27		City Property Taxes	3,026	6,051	9,077	12,102	15,128	45,383
28		<i>New City Property Taxes</i>	3,026	3,026	3,026	3,026	3,026	15,128
29	School District Property Taxes	14,741	29,482	44,223	58,963	73,704	221,113	
30	<i>New School District Property Taxes</i>	14,741	14,741	14,741	14,741	14,741	73,704	
31	Special District Property Taxes	1,092	2,183	3,275	4,366	5,458	16,373	
32	<i>New Special District Property Taxes</i>	1,092	1,092	1,092	1,092	1,092	5,458	

	2009	2010	2011	2012	2013	5-Year Total
33	Direct Employment					
34	New Base Employment		20	40	60	80
35	Direct New Employment	20	20	20	20	20
36	Total Direct Employment	20	40	60	80	100
37	Average Earnings	133,179	136,774	140,467	144,260	148,155
38	Total Earnings	2,663,573	5,470,978	8,428,042	11,540,799	14,815,501
39	FICA Taxes (50% of Employer Portion) (Metric)	101,882	209,265	322,373	441,436	566,693
40	<i>New FICA Taxes (50% of Employer Portion) (Metric)</i>	<i>101,882</i>	<i>104,632</i>	<i>107,458</i>	<i>110,359</i>	<i>113,339</i>
41	State Direct Income Taxes	123,323	253,306	390,218	534,339	685,958
42	<i>New State Income Taxes</i>	<i>123,323</i>	<i>126,653</i>	<i>130,073</i>	<i>133,585</i>	<i>137,192</i>
43	State Sales Taxes on Taxable Purchases	17,982	36,936	56,899	77,914	100,022
44	<i>New State Sales Taxes on Taxable Purchases</i>	<i>17,982</i>	<i>18,468</i>	<i>18,966</i>	<i>19,479</i>	<i>20,004</i>
45	County Sales Taxes on Taxable Purchases	7,561	15,531	23,926	32,763	42,059
46	<i>New County Sales Taxes on Taxable Purchases</i>	<i>7,561</i>	<i>7,766</i>	<i>7,975</i>	<i>8,191</i>	<i>8,412</i>
47	City Sales Tax on Taxable Purchases	21,459	44,076	67,899	92,977	119,359
48	<i>New City Sales Tax on Taxable Purchases</i>	<i>21,459</i>	<i>22,038</i>	<i>22,633</i>	<i>23,244</i>	<i>23,872</i>
49	Special District Sales Tax on Taxable Purchases	4,324	8,881	13,681	18,734	24,050
50	<i>New Special District Sales Tax on Taxable Purchases</i>	<i>4,324</i>	<i>4,440</i>	<i>4,560</i>	<i>4,684</i>	<i>4,810</i>
51	County Property Taxes	7,502	15,454	23,877	32,791	42,219
52	<i>New County Property Taxes</i>	<i>7,502</i>	<i>7,727</i>	<i>7,959</i>	<i>8,198</i>	<i>8,444</i>
53	City Property Taxes	3,062	6,308	9,746	13,384	17,233
54	<i>New City Property Taxes</i>	<i>3,062</i>	<i>3,154</i>	<i>3,249</i>	<i>3,346</i>	<i>3,447</i>
55	School District Property Taxes	14,919	30,734	47,484	65,211	83,959
56	<i>New School District Property Taxes</i>	<i>14,919</i>	<i>15,367</i>	<i>15,828</i>	<i>16,303</i>	<i>16,792</i>
57	Special District Property Taxes	1,105	2,276	3,516	4,829	6,217
58	<i>New Special District Property Taxes</i>	<i>1,105</i>	<i>1,138</i>	<i>1,172</i>	<i>1,207</i>	<i>1,243</i>
59	Indirect Employment					
60	Current Indirect Employment	-	92	183	275	367
61	New Indirect Employment	92	92	92	92	92
62	Total Indirect Employment	92	183	275	367	458
63	Average Indirect Earnings	64,585	66,329	68,120	69,959	71,848
64	Total Indirect Earnings	5,918,192	12,155,967	18,726,267	25,642,502	32,918,562
65	State Direct Income Taxes	274,012	562,821	867,026	1,187,248	1,524,129
66	<i>New State Income Taxes</i>	<i>274,012</i>	<i>281,411</i>	<i>289,009</i>	<i>296,812</i>	<i>304,826</i>
67	State Sales Taxes on Taxable Purchases	39,955	82,067	126,425	173,118	222,240
68	<i>New State Sales Taxes on Taxable Purchases</i>	<i>39,955</i>	<i>41,034</i>	<i>42,142</i>	<i>43,279</i>	<i>44,448</i>
69	County Sales Taxes on Taxable Purchases	15,615	32,073	49,408	67,656	86,853
70	<i>New County Sales Taxes on Taxable Purchases</i>	<i>15,615</i>	<i>16,036</i>	<i>16,469</i>	<i>16,914</i>	<i>17,371</i>
71	City Sales Tax on Taxable Purchases	48,252	99,110	152,678	209,067	268,390
72	<i>New City Sales Tax on Taxable Purchases</i>	<i>48,252</i>	<i>49,555</i>	<i>50,893</i>	<i>52,267</i>	<i>53,678</i>
73	Special District Sales Tax on Taxable Purchases	9,607	19,733	30,398	41,625	53,436
74	<i>New Special District Sales Tax on Taxable Purchases</i>	<i>9,607</i>	<i>9,866</i>	<i>10,133</i>	<i>10,406</i>	<i>10,687</i>
75	County Property Taxes	34,372	70,807	109,397	150,239	193,433
76	<i>New County Property Taxes</i>	<i>34,372</i>	<i>35,404</i>	<i>36,466</i>	<i>37,560</i>	<i>38,687</i>
77	City Property Taxes	14,030	28,902	44,653	61,324	78,954
78	<i>New City Property Taxes</i>	<i>14,030</i>	<i>14,451</i>	<i>14,884</i>	<i>15,331</i>	<i>15,791</i>
79	School District Property Taxes	68,356	140,813	217,556	298,777	384,675
80	<i>New School District Property Taxes</i>	<i>68,356</i>	<i>70,406</i>	<i>72,519</i>	<i>74,694</i>	<i>76,935</i>
81	Special District Property Taxes	5,062	10,427	16,109	22,123	28,484
82	<i>New Special District Property Taxes</i>	<i>5,062</i>	<i>5,213</i>	<i>5,370</i>	<i>5,531</i>	<i>5,697</i>

	B	C	D	E	F	G	H	I
83								
84	Public Costs	Public Costs	2009	2010	2011	2012	2013	5-Year Total
85		State Direct Costs - Residents	(58,707)	(120,936)	(186,847)	(256,603)	(330,376)	(953,468)
86		<i>New Direct Costs - Residents</i>	(58,707)	(60,468)	(62,282)	(64,151)	(66,075)	(311,683)
87		State Direct Costs - Employees	(17,880)	(36,832)	(56,906)	(78,151)	(100,619)	(290,389)
88		<i>New Direct Costs - Employees</i>	(17,880)	(18,416)	(18,969)	(19,538)	(20,124)	(94,926)
89		Total State Cost of Government	(76,587)	(157,769)	(243,753)	(334,754)	(430,995)	(406,610)
90	Total Taxes	Total Taxes	2009	2010	2011	2012	2013	5-Year Total
91		Total Direct Taxes	525,462	1,061,951	1,609,919	2,169,838	2,742,195	8,109,366
92		<i>Total New Direct Taxes</i>	525,462	530,975	536,640	542,460	548,439	2,683,976
93		Total Indirect Taxes	509,260	1,046,752	1,613,651	2,211,176	2,840,594	8,221,434
94		<i>Total New Indirect Taxes</i>	509,260	523,376	537,884	552,794	568,119	2,691,433
95		Total New Taxes - Direct and Indirect	1,034,723	1,054,351	1,074,523	1,095,254	1,116,558	5,375,409
96		Total Tax Collected	1,034,723	2,108,702	3,223,570	4,381,015	5,582,790	16,330,799
97	Cost of Program	(101,882)	(209,265)	(322,373)	(441,436)	(566,693)	5,375,409	
98	Net Tax Collected	932,841	1,899,438	2,901,197	3,939,579	5,016,097	14,689,151	
99	State Taxes	State - Total Taxes Collected	2009	2010	2011	2012	2013	5-Year Total
100		Total Direct Taxes	248,517	504,664	768,751	1,041,097	1,322,035	3,885,063
101		<i>Total New Direct Taxes</i>	248,517	252,332	256,250	260,274	264,407	1,281,780
102		Total Indirect Taxes	313,967	644,889	993,451	1,360,366	1,746,369	5,059,042
103		<i>Total New Indirect Taxes</i>	313,967	322,444	331,150	340,091	349,274	1,656,927
104		Total New Taxes - Direct and Indirect	562,484	574,776	587,401	600,366	613,681	2,938,707
105		Total Tax Collected	562,484	1,149,552	1,762,202	2,401,462	3,068,404	8,944,104
106		Cost of Program	(101,882)	(209,265)	(322,373)	(441,436)	(566,693)	(1,641,648)
107		Cost of State Government	(76,587)	(157,769)	(243,753)	(334,754)	(430,995)	(1,243,857)
108		Net Direct Fiscal Gain (Loss)	70,048	137,630	202,625	264,908	324,346	999,558
109	Net Total Fiscal Gain (Loss)	384,015	782,519	1,196,076	1,625,273	2,070,716	6,058,599	

		2009	2010	2011	2012	2013	5-Year Total
110	County - Total Taxes Collected						
111	Total Direct Taxes	65,731	132,321	199,806	268,224	337,616	1,003,698
112	<i>Total New Direct Taxes</i>	50,668	50,668	50,668	50,668	50,668	253,338
113	Total Indirect Taxes	49,987	102,880	158,805	217,894	280,285	809,852
114	<i>Total New Indirect Taxes</i>	49,987	51,440	52,935	54,474	56,057	264,893
115	Total New Taxes - Direct and Indirect	100,655	102,108	103,603	105,141	106,725	518,231
116	Total Tax Collected	115,718	235,201	358,611	486,119	617,901	1,813,550
117	City - Total Taxes Collected						
118	Total Direct Taxes	150,300	301,943	454,983	609,478	765,488	2,282,192
119	<i>Total New Direct Taxes</i>	150,300	150,971	151,661	152,370	153,098	758,400
120	Total Indirect Taxes	62,282	128,011	197,331	270,391	347,344	1,005,360
121	<i>Total New Indirect Taxes</i>	62,282	64,006	65,777	67,598	69,469	329,131
122	Total New Taxes - Direct and Indirect	212,582	214,977	217,438	219,967	222,566	1,087,531
123	Total Tax Collected	212,582	429,954	652,314	879,869	1,112,832	3,287,552
124	School District - Total Taxes Collected						
125	Total Direct Taxes	29,660	60,215	91,706	124,174	157,663	463,420
126	<i>Total New Direct Taxes</i>	29,660	30,108	30,569	31,044	31,533	152,913
127	Total Indirect Taxes	68,356	140,813	217,556	298,777	384,675	1,110,175
128	<i>Total New Indirect Taxes</i>	68,356	70,406	72,519	74,694	76,935	362,910
129	Total New Taxes - Direct and Indirect	98,016	100,514	103,087	105,738	108,468	515,823
130	Total Tax Collected	98,016	201,028	309,262	422,951	542,338	1,573,595
131	Special District - Total Taxes Collected						
132	Total Direct Taxes	31,254	62,808	94,673	126,864	159,394	474,993
133	<i>Total New Direct Taxes</i>	31,254	31,404	31,558	31,716	31,879	157,810
134	Total Indirect Taxes	14,668	30,159	46,508	63,749	81,920	237,005
135	<i>Total New Indirect Taxes</i>	14,668	15,080	15,503	15,937	16,384	77,572
136	Total New Taxes - Direct and Indirect	45,922	46,484	47,060	47,653	48,263	235,382
137	Total Tax Collected	45,922	92,967	141,181	190,613	241,314	711,998

APPENDIX 2: EXPLANATION OF THE MODEL

Total Output

Total output is the total amount of goods and services produced by industry in Colorado.

- Line 6 represents total industry output, estimated using regional input-output multipliers from the Bureau of Economic Analysis. Total output is based on total industry employment divided by the RIMS II employment per \$1 million in output, multiplied by \$1 million.
- Line 7 represents *new* (for that specific fiscal year) industry output, estimated using regional input-output multipliers from the Bureau of Economic Analysis. Total output is based on *new* industry employment divided by the RIMS II employment per \$1 million in output, multiplied by \$1 million.
- Line 8 represents *total* industry output, which is the sum of line 6 and line 7.
- Line 9 is the additional output generated by direct industry activity, commonly known as indirect output. This is derived by multiplying direct output by the output multiplier.
- Line 10 is the additional output generated by *new* direct industry activity, commonly known as indirect output. This is derived by multiplying direct output by the output multiplier.
- Line 11 sums the total indirect base output and new output.
- Line 12 is the sum of direct and indirect output, or total output.

Operations

This section examines the fiscal impact of company operations on the state of Colorado, counties, cities, and special districts.

- Line 14 is the estimated corporate income taxes, calculated by multiplying per employee corporate income taxes paid in the state by total industry employment.
- Line 15 is the estimated *new* corporate income taxes for that year, calculated by multiplying per employee corporate income taxes paid in the state by total industry employment.
- Line 16 represents the estimated taxable expenditures in Colorado, calculated multiplying total output by the expenditures ratio (30%).
- Line 17 is the estimated state sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the state's 2.9% sales tax rate.
- Line 18 is the estimated *new* state sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the state's 2.9% sales tax rate.
- Line 19 is the estimated county sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the 1.22% weighted average county sales tax rate.
- Line 20 is the estimated *new* county sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the 1.22% weighted average county sales tax rate.

- Line 21 is the estimated city sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the 3.46% weighted average city sales tax rate.
- Line 22 is the estimated *new* city sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures and the 3.46% weighted average city sales tax rate.
- Line 23 is the estimated special district sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures, the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 24 is the estimated *new* special district sales taxes derived from taxable industry expenditures made in the state. This is the product of taxable expenditures, the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 25 is estimated company property taxes at the county level. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average county mill levy (18.546) divided by 1,000, and multiplied by total employment in the model.
- Line 26 is estimated *new* company property taxes at the county level. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average county mill levy divided by 1,000, and multiplied by total employment in the model.
- Line 27 is estimated company property taxes at the city level. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average city mill levy (7.57) divided by 1,000, and multiplied by total employment in the model.
- Line 28 is estimated *new* company property taxes at the city level. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average city mill levy (7.57) divided by 1,000, and multiplied by total employment in the model.
- Line 29 is estimated company property taxes for school districts. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average school district mill levy (36.882) divided by 1,000, and multiplied by total employment in the model.
- Line 30 is estimated *new* company property taxes for school districts. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average school district mill levy (36.882) divided by 1,000, and multiplied by total employment in the model.
- Line 31 is estimated company property taxes for special districts. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the average special district mill levy (2.731) divided by 1,000, and multiplied by total employment in the model.
- Line 32 is estimated *new* company property taxes for special districts. This is calculated by dividing total commercial assessed property value in the state by total employment, multiplied by the

average special district mill levy (2.731) divided by 1,000, and multiplied by total employment in the model.

Direct Employment

Total direct employment is modeled at 20 to reflect the minimum potential impact of a successful job creation program. Studying the likely subscribership to this program was beyond the scope of work; however, various scenarios are modeled in Appendix 4 to illustrate the magnitude of impact given greater employment.

- Line 34 refers to direct industry employment (total jobs¹). This number is cumulative to show the compounding impacts of the increasing employment base. This employment is an arbitrary number, selected to model the magnitude of the impact of a successful job creation program.
- Line 35 refers to *new* direct industry employment. This employment is an arbitrary number, selected to model the magnitude of the impact of a successful job creation program.
- Line 36 is total direct industry employment, calculated summing base employment (Line 34) and new employment (line 35).
- Line 37 is average earnings. When examining the impact of general industry, this is simply average earnings in Colorado (total wages divided by total employment), multiplied by 110%. When viewing specific industries, this is the average wage for that industry in the state. It is assumed that average wages are forecast to grow at 2.7%, the historical rate from 2001-2007.
- Line 38 represents total earnings, calculated multiplying total direct employment (line 36) by average earnings (line 37).
- Line 39 represents 50% of the employer's portion (50%) of Federal Insurance Contribution Act (FICA) taxes (3.83%). This is the estimated total earnings multiplied by the 3.83%. This is the tax credit *metric* for which the state will calculate incentives for companies. FICA taxes will not be used as the incentive, nor will they be used to fund the program.
- Line 40 represents 50% of the employer's portion (50%) of Federal Insurance Contribution Act (FICA) taxes (3.83%). This is the tax credit *metric* for which the state will calculate incentives for companies. FICA taxes will not be used as the incentive, nor will they be used to fund the program.
- Line 41 is the estimated employee income taxes, calculated by multiplying total employment by average earnings by the state income tax rate (4.63%).

¹“Employment is measured on a job-count basis for both wage and salary workers and proprietors.” Bureau of Line 14 is the estimated corporate income taxes, calculated by multiplying per employee corporate income taxes paid in the state by total industry employment.

- Line 42 is the estimated *new* employee income taxes, calculated by multiplying total employment by average earnings by the state income tax rate (4.63%).
- Line 43 is the estimated state sales taxes generated by employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the state sales tax rate (2.9%).
- Line 44 is the estimated *new* state sales taxes generated by employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the state sales tax rate (2.9%).
- Line 45 is the estimated county sales taxes generated by employee spending. This is calculated by multiplying average earnings, by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (1.22%).
- Line 46 is the estimated *new* county sales taxes generated by employee spending. This is calculated multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (1.22%).
- Line 47 is the estimated city sales taxes generated by employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (3.46%).
- Line 48 is the estimated *new* city sales taxes generated by employee spending. This is calculated by multiplying average earnings, by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (3.46%).
- Line 49 is the estimated special district sales taxes generated by employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 50 is the estimated new special district sales taxes generated by employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 51 represents the estimated county-level property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average county mill levy (18.546) divided by 1,000, and divided by total population, resulting in per capita county property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 52 represents the estimated *new* county-level property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average county mill levy (18.546) divided by 1,000, and divided by total population, resulting in per capita county property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 53 represents the estimated city-level property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the

average city mill levy (7.57) divided by 1,000, and divided by total population, resulting in per capita city property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.

- Line 54 represents the estimated *new* city-level property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average city mill levy (7.57) divided by 1,000, and divided by total population, resulting in per capita city property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 55 represents the estimated school district property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average school district mill levy (36.882) divided by 1,000, and divided by total population, resulting in per capita school district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 56 represents the estimated *new* school district property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average school district mill levy (36.882) divided by 1,000, and divided by total population, resulting in per capita school district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 57 represents the estimated special district property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average special district mill levy (2.731) divided by 1,000, and divided by total population, resulting in per capita special district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.
- Line 58 represents the estimated *new* special district property taxes paid by employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average special district mill levy (2.731) divided by 1,000, and divided by total population, resulting in per capita special district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry employment in the model.

Indirect Employment

This section examines the impact of indirect employment generated by the insurgence of direct employment generated by the jobs creation program.

- Line 60 refers to indirect industry employment, or employment that exists due to demand for goods and services at some other point in the supply chain due to direct industry activity. This is calculated by multiplying direct base employment (line 34) by the RIMS II industry employment multiplier.
- Line 61 refers to *new* indirect industry employment, or employment that exists due to demand for goods and services at some other point in the supply chain due to direct industry activity. This is calculated by multiplying new direct employment (line 35) by the RIMS II industry employment multiplier.

- Line 62 is total indirect industry employment, calculated summing base indirect employment (Line 60) and new indirect employment (line 61).
- Line 63 is average earnings, calculated by dividing year 1 total indirect earnings (line 64) by year 1 total indirect employment (line 62). It is assumed that wages in subsequent years are forecast to grow at 2.7%, the historical wage growth rate for all industries in Colorado from 2001-2007.
- Line 64 represents total indirect wages, calculated by multiplying total direct industry wages by the RIMS II wage multiplier.
- Line 65 is the estimated indirect employee income taxes, calculated by multiplying total indirect employment by average earnings by the state income tax rate (4.63%).
- Line 66 is the estimated *new* indirect employee income taxes, calculated by multiplying total indirect employment by average earnings by the state income tax rate (4.63%).
- Line 67 is the estimated state sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the state sales tax rate (2.9%).
- Line 68 is the estimated *new* state sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the state sales tax rate (2.9%).
- Line 69 is the estimated county sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (1.22%).
- Line 70 is the estimated *new* county sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (1.22%).
- Line 71 is the estimated city sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (3.46%).
- Line 72 is the estimated *new* city sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the weighted average county sales tax rate (3.46%).
- Line 73 is the estimated special district sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%) by the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 74 is the estimated new special district sales taxes generated by indirect employee spending. This is calculated by multiplying average earnings by the taxable goods ratio calculated from the Consumer Expenditures Survey (23.3%), by the ratio of taxable sales made in the Denver metropolitan region (58%), and the 1.2% combined special district tax rate for RTD, Scientific and Cultural Facilities, and the Metropolitan Football Stadium District.
- Line 75 represents the estimated county-level property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state

multiplied by the average county mill levy (18.546) divided by 1,000, and divided by total population, resulting in per capita county property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.

- Line 76 represents the estimated *new* county-level property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average county mill levy (18.546) divided by 1,000, and divided by total population, resulting in per capita county property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 77 represents the estimated city-level property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average city mill levy (7.57) divided by 1,000, and divided by total population, resulting in per capita city property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 78 represents the estimated *new* city-level property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average city mill levy (7.57) divided by 1,000, and divided by total population, resulting in per capita city property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 79 represents the estimated school district property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average school district mill levy (36.882) divided by 1,000, and divided by total population, resulting in per capita school district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 80 represents the estimated *new* school district property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average school district mill levy (36.882) divided by 1,000, and divided by total population, resulting in per capita school district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 81 represents the estimated special district property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average special district mill levy (2.731) divided by 1,000, and divided by total population, resulting in per capita special district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.
- Line 82 represents the estimated *new* special district property taxes paid by indirect employees on their homes. This is estimated by taking total residential assessed property values in the state multiplied by the average special district mill levy (2.731) divided by 1,000, and divided by total population, resulting in per capita special district property taxes. This is multiplied by population to employee ratio (2.15), and multiplied by total industry indirect employment in the model.

Public Costs

This section looks at the state-level cost of government. State-level cost of government was examined in order to analyze the net fiscal effects of the incentive program. Other levels of government were not examined on a cost of government basis since they are not providing tax dollars as part of the incentive pool. Therefore, from a local perspective, new activity organically generated or generated by this program is fiscally the same.

- Line 85 refers to the cost of government service provided for state residents as a result of the job incentive program. This is derived by allocating government services primarily consumed by residents, divided by total population, multiplied by total direct employment, and multiplied by population to employee ratio (2.15). Per capita resident government services are estimated at \$1,211 in 2007. Per resident costs are modeled to grow at 3% per year.
- Line 86 refers to the cost of government service provided for *new* state residents as a result of the job incentive program. This is derived by allocating government services primarily consumed by residents, divided by total population, multiplied by total direct employment, and multiplied by population to employee ratio (2.15). Per capita resident government services are estimated at \$1,211 in 2007. Per resident costs are modeled to grow at 3% per year.
- Line 87 refers to the cost of government service provided for employees in the state as a result of the job incentive program. This is derived by allocating government services primarily consumed by business, divided by total employment, multiplied by total direct employment in the model. Per employee government services are estimated at \$686 in 2007. Per employee costs are modeled to grow at 3% per year.
- Line 88 refers to the cost of government service provided for new employees in the state as a result of the job incentive program. This is derived by allocating government services primarily consumed by business, divided by total employment, multiplied by total direct employment in the model. Per employee government services are estimated at \$686 in 2007. Per employee costs are modeled to grow at 3% per year.
- Line 89 represents total state-level cost of government to provide services to residents and employees (Sum line 84 and line 86).

Tax Detail

This section aggregates taxes by varying viewpoints – total taxes, state taxes, county taxes, city taxes, school taxes, and special district taxes.

Total Taxes

- Line 91 refers to total direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 92 refers to total *new* direct taxes generated by industry operations, employment, earnings, and off-site employee spending.

- Line 93 refers to total indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 94 refers to total *new* indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 95 is the sum of *new* direct and *new* indirect industry-generated taxes in Colorado. This line is the sum of line 92 and line 94.
- Line 96 refers to total taxes collected (direct and indirect) by summing line 91 and line 93.
- Line 97 refers to the estimated cost of the program using the FICA metric (line 39).
- Line 98 represents aggregate taxes generated in the state of Colorado by the insurgence of new industry spurred by the job incentive program.

State Taxes

- Line 100 refers to total state-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 101 refers to total *new* state-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 102 refers to total state-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 103 refers to total *new* state-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 104 is the sum of *new* state-level direct and *new* state-level indirect industry-generated taxes in Colorado. This line is the sum of line 101 and line 103.
- Line 105 refers to total taxes collected (direct and indirect) by summing line 100 and line 102.
- Line 106 refers to the estimated cost of the program using the FICA metric (line 39).
- Line 107 represents the state-level cost of government to employees and residents in Colorado resulting from the job incentive program.
- Line 108 represents the net direct fiscal gain from the jobs program. It is derived taking total direct state-level taxes, less the cost of the program and the cost of providing state-government.
- Line 109 represents the net fiscal gain from the jobs program (direct and indirect). It is derived taking total state-level taxes, less the cost of the program and the cost of providing state-government.

County Taxes

- Line 111 refers to total county-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 112 refers to total *new* county-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 113 refers to total county-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 114 refers to total *new* county-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.

- Line 115 is the sum of *new* county-level direct and *new* county-level indirect industry-generated taxes in Colorado. This line is the sum of line 101 and line 103.
- Line 116 refers to total taxes collected (direct and indirect) by summing line 100 and line 102.

City Taxes

- Line 118 refers to total city-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 119 refers to total *new* city-level direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 120 refers to total city-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 121 refers to total *new* city-level indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 122 is the sum of *new* city-level direct and *new* city-level indirect industry-generated taxes in Colorado. This line is the sum of line 101 and line 103.
- Line 123 refers to total taxes collected (direct and indirect) by summing line 100 and line 102.

School District Taxes

- Line 125 refers to total school district direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 126 refers to total *new* school district direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 127 refers to total school district indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 128 refers to total *new* school district indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 129 is the sum of *new* school district direct and *new* school district indirect industry-generated taxes in Colorado. This line is the sum of line 101 and line 103.
- Line 130 refers to total taxes collected (direct and indirect) by summing line 100 and line 102.

Special District Taxes

- Line 132 refers to total special district direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 133 refers to total *new* special district direct taxes generated by industry operations, employment, earnings, and off-site employee spending.
- Line 134 refers to total special district indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 135 refers to total *new* special district indirect taxes generated by industry indirect employment and off-site indirect employee spending.
- Line 136 is the sum of *new* special district direct and *new* special district indirect industry-generated taxes in Colorado. This line is the sum of line 101 and line 103.
- Line 137 refers to total taxes collected (direct and indirect) by summing line 100 and line 102.

APPENDIX 3: COLORADO INDUSTRIES GREATER THAN 110% OF AVERAGE WAGES, 2007

Oil and gas extraction
Mining, except oil and gas
Support activities for mining
Utilities
Primary metals
Machinery manufacturing
Computer and electronic product
Electrical equipment and appliance
Other transportation equipment
Petroleum and coal products manufacturing
Chemical manufacturing
Wholesale trade
Pipeline transportation
Publishing including software
Broadcasting and telecommunications
Information and data processing
Federal reserve banks, credit, & related
Securities, commodity, and investments
Insurance carriers and related
Professional, scientific, and technical services
Management of companies and enterprises
Ambulatory health care services
Performing arts, museums, and related

APPENDIX 4: SCENARIOS WITH VARYING EMPLOYMENT

The base model accounted for 20 new employees in 2009, since that is the minimum for a firm to qualify under the proposed incentive program. Using conservative assumptions, the base model effectively shows the direction and marginal changes (per 20 employees) in output, employment, wages, and taxes. The magnitude of change, however, is dependent on the magnitude of new direct employment, which is dependent on the true level of interest in the program. To illustrate the affect of employment on various outputs, employment levels of 20, 125, 250, 375, and 500 have been modeled below (Table 10 through Table 15).

TABLE 10: DIRECT OUTPUT, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	\$5,582,845	\$11,165,689	\$16,748,534	\$22,331,379	\$27,914,223
125	43,841,882	87,683,763	131,525,645	175,367,527	219,209,409
250	69,785,558	139,571,116	209,356,674	279,142,232	348,927,790
375	108,201,483	216,402,966	324,604,448	432,805,931	541,007,414
500	139,571,116	279,142,232	418,713,348	558,284,463	697,855,579

TABLE 11: TOTAL OUTPUT, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	\$12,378,692	\$24,757,385	\$37,136,077	\$49,514,770	\$61,893,462
125	97,006,747	194,013,494	291,020,240	388,026,987	485,033,734
250	154,733,656	309,467,312	464,200,968	618,934,624	773,668,280
375	239,487,102	478,974,203	718,461,305	957,948,406	1,197,435,508
500	309,467,312	618,934,624	928,401,936	1,237,869,247	1,547,336,559

TABLE 12: TOTAL EMPLOYMENT, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	84	168	252	336	420
125	685	1,370	2,055	2,741	3,426
250	1,050	2,100	3,150	4,200	5,249
375	1,632	3,265	4,897	6,530	8,162
500	2,100	4,200	6,299	8,399	10,499

TABLE 13: AVERAGE DIRECT WAGES, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	\$82,021	\$84,235	\$86,510	\$88,846	\$91,244
125	82,021	84,235	86,510	88,846	91,244
250	82,021	84,235	86,510	88,846	91,244
375	82,021	84,235	86,510	88,846	91,244
500	82,021	84,235	86,510	88,846	91,244

TABLE 14: TOTAL TAXES, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	\$499,958	\$1,018,343	\$1,555,928	\$2,113,513	\$2,691,929
125	4,002,085	8,151,762	12,455,218	16,918,872	21,549,378
250	6,249,470	12,729,286	19,449,097	26,418,912	33,649,114
375	9,676,208	19,708,562	30,111,983	40,901,950	52,094,518
500	12,498,940	25,458,571	38,898,193	52,837,824	67,298,228

TABLE 15: TOTAL DIRECT STATE TAXES, 2009-2013

ANNUAL EMP Δ	2009	2010	2011	2012	2013
20	\$9,425	\$16,096	\$19,881	\$20,647	\$18,251
125	28,288	31,932	9,774	(39,392)	(116,820)
250	117,818	201,198	248,517	258,084	228,137
375	170,462	286,751	346,315	346,496	284,525
500	235,636	402,396	497,034	516,167	456,274