

# **The Economic Impact of Increased Production at the Spring Creek Mine**

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**Table of Contents**

Introduction and Summary ..... 4

The Spring Creek Mine ..... 6

Policy Analysis with the REMI Model ..... 8

The Direct Economic Contribution of Increased Coal Production at the Spring Creek Mine ..... 12

The Economic Impact of Expanded Production at the Spring Creek Mine ..... 13

Conclusion ..... 22

References..... 23

Appendix and REMI Tables..... 24

## Introduction and Summary

This report summarizes the findings of an investigation into the likely impacts on the Montana economy of a significant expansion in coal production at the Spring Creek mine operated by Cloud Peak Energy near Decker, Montana. The Bureau of Business and Economic Research at The University of Montana, using a state-of-the-art policy analysis model, analyzed the employment, income, production, and other economic flows that would result from a hypothetical 20 million tons per year increase in mine output. The analysis indicates that such an expansion, if it were to take place, would have a sizable impact on employment, income, production, population, and tax revenues in the state of Montana.

The Bureau of Business and Economic Research is the primary research unit of the School of Business Administration at The University of Montana. Founded in 1948, its mission is to “serve the general public ... by providing an understanding of the economic environment in which Montanans live and work.” The BBER is not an advocacy organization, and this report does not either advocate or argue against increased coal production in Montana. This research report quantifies how the state economy would be impacted if one particular coal expansion project were to take place.

## Summary of Findings

Based upon a scenario where (i) coal output is increased by a total of 20 million tons per year at the Spring Creek mine, with the full expansion phased in over the years 2016-18, and (ii) the coal is shipped west by rail to ocean ports in the northwest to serve Asian markets, we find that the state economy is significantly impacted. Relative to a status quo, no-expansion scenario, we find that by year 2018 that the Montana economy is larger by

- 1,461 jobs, of which 1,220 are private sector job, spread across a wide spectrum of industries and occupations, in all regions of the state;
- \$58.8 million in income received each year collectively by Montana households, of which \$50.6 million per year is after-tax income available for household spending;
- 579 people, with population impacts growing in subsequent years as additional people move to Montana, attracted by job opportunities, and
- \$55.4 million per year in selected state government revenues, resulting from both the taxes levied on coal production as well as the growth in the base for Montana’s other major taxes (excluding the property tax).

It is important to note that these impacts are permanent, recurring each year for which the increased coal production at Spring Creek continues. The \$55.4 million per year of additional state government revenue does not include revenues that are realized by

local governments from either the gross proceeds or property taxes. Additionally, the analysis recognizes that most of the Cloud Peak Energy (CPE) employees who would work at the mine would continue to reside in Wyoming. As described more fully below, in the standard accounting of employment and income data, employment is counted by place-of-work whereas household (personal) income is counted by place-of-residence.

**Table 1**  
**The Economic Impact of Spring Creek Mine Expansion**  
**Impacts Summary**

Category	Units	Impact
Total Employment	Jobs	1,461
Private Sector	Jobs	1,220
Personal Income	\$ Millions	58.8
Disposable Pers. Income	\$ Millions	50.6
Population	People	579
Selected State Revenues*	\$ Millions	55.4

\*Does not include property taxes or revenues to local governments.

The the impacts are considerably larger than the 326 employees (CPE and outside contractors) and \$34.2 million in total employee compensation that the expanded production itself represents, for several reasons. Increased coal production is linked to higher rail volume – with Montana’s rail services covered by workers across the entire state network. Secondly, both rail and coal jobs pay significantly more in wages and benefits than the state average. The spending of those workers, as well as the vendor and supplier purchases by the mine and the railroad, support hundreds of additional jobs in industries such as construction, wholesale and retail trade, health care services, and local public schools. The full accounting of new income flows that result in these new, induced jobs is described more fully below.

We document and detail these findings in the remainder of this report. After a brief description of the mine’s current operations, we describe the analytic flow of this research and document the economic model used to produce the results. We then lay out the key assumptions concerning coal production and rail transportation which coal expansion would require. The fourth section gives the results of the study in greater detail, followed by a conclusion and references. More detailed output is contains in an appendix.

## 1. The Spring Creek Mine

The Spring Creek mine is located in Montana approximately 35 miles north of Sheridan, Wyoming. The mine extracts thermal coal from the Anderson-Dietz Seam, which averages approximately 80 feet in thickness. The Spring Creek mine shipped approximately 19.1 million tons of low sulfur, 9,240 Btu coal in 2011. Coal mined from Spring Creek is shipped primarily to electric utilities and industrial customers in the northwest, midwest, northeast, and southwest United States, and various Canadian provinces and exported to Asian utility customers via the Westshore and Ridley terminals in British Columbia, Canada.

Spring Creek mine utilizes a highly efficient combination of dragline open-pit operations with truck-shovel assist to produce significant volumes of coal each year. Spring Creek mine is permitted for 24 million tons of coal a year. In 2005 and again in 2009, the Spring Creek mine received the Excellence in Surface Mining and Reclamation Award from the Office of Surface Mining. These awards recognized significant achievements in developing reclamation with hydrologic and biologic diversity and for intensive effort in establishing rare plants on reclamation.

While the mine, the mining jobs, and the coal production all take place in the state of Montana, most of the workers employed by the mine reside in Wyoming. As described in the next section, an expansion in production is expected to follow this pattern as well. Economic statistics, such as those presented in this report, can report employment and wages in one of two ways:

- A place-of-work basis reports jobs, wages, and other concepts on the basis of where the employment is located.
- A place-of-residence basis reports those same concepts according to the location where the worker lives.

The economic data from the U.S. Bureau of Economic Analysis that are used in this study report jobs, wages and salaries on a place-of-work basis. Income, which includes wages and salaries as well as other items – such as rents, dividends, and transfer payments – is reported on a place-of-residence basis. We follow that same accounting framework in this report.

Figure 1.1  
Spring Creek Mine



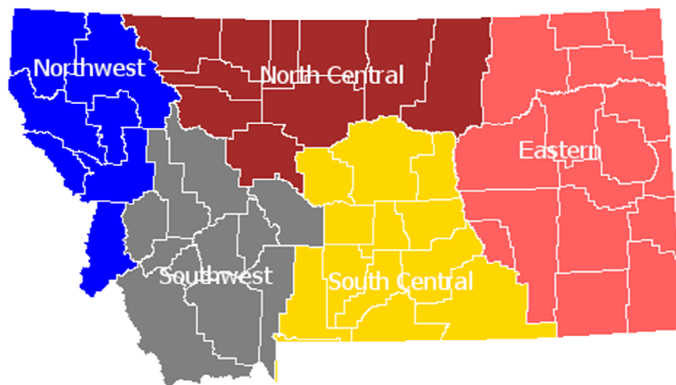
## 2. Policy Analysis with the REMI Model

Economic impacts occur because of events or activities that create new expenditures. Spending that is new – which is over and above existing expenditures and does not simply displace spending elsewhere in the region – not only adds to economic activity in its own right, but it also induces further spending as the recipients of wages, sales and tax revenues spend a portion of their income in the local economy. Changes in the path of investment, migration, and prices and wages are possible as well.

The basic tool used in this study to assess the economic contribution of the Spring Creek mine expansion is an economic model, calibrated to represent the interactions in the Montana economy, leased from Regional Economic Models, Inc.. The REMI model is one of the best known and most respected analytical tools in the policy analysis arena and has been used in more than a hundred previous studies as well as dozens of peer-reviewed articles in scholarly journals. It is a state-of-the-art econometric forecasting model that incorporates dynamic feedbacks between economic and demographic variables. The REMI model forecasts employment, income, expenditures and populations for counties and regions based on a model containing over 100 stochastic and dynamic relationships as well as a number of identities. A full explanation of the design and operation of the model can be found in Treyz (1988).

The model used in this study disaggregated the state economy into five regions: Northwest, Southwest, North Central, South Central, and Eastern. It explicitly recognizes trade flows that exist between these regions, as well as between the regions and the rest of the world. The definition of the regions is shown in Figure 2.1 below.

**Figure 2.1**  
**Economic Regions**



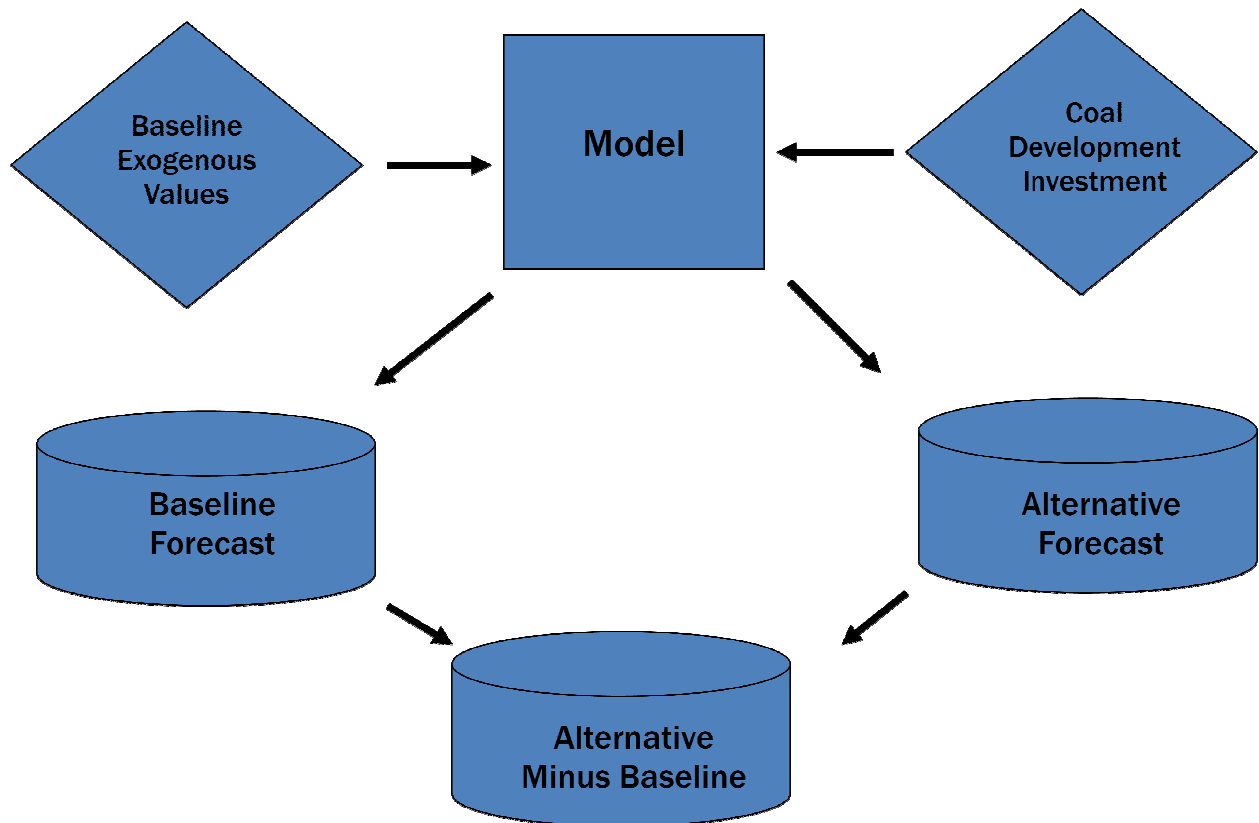


**Table 2.1**

**South Central Montana Counties**

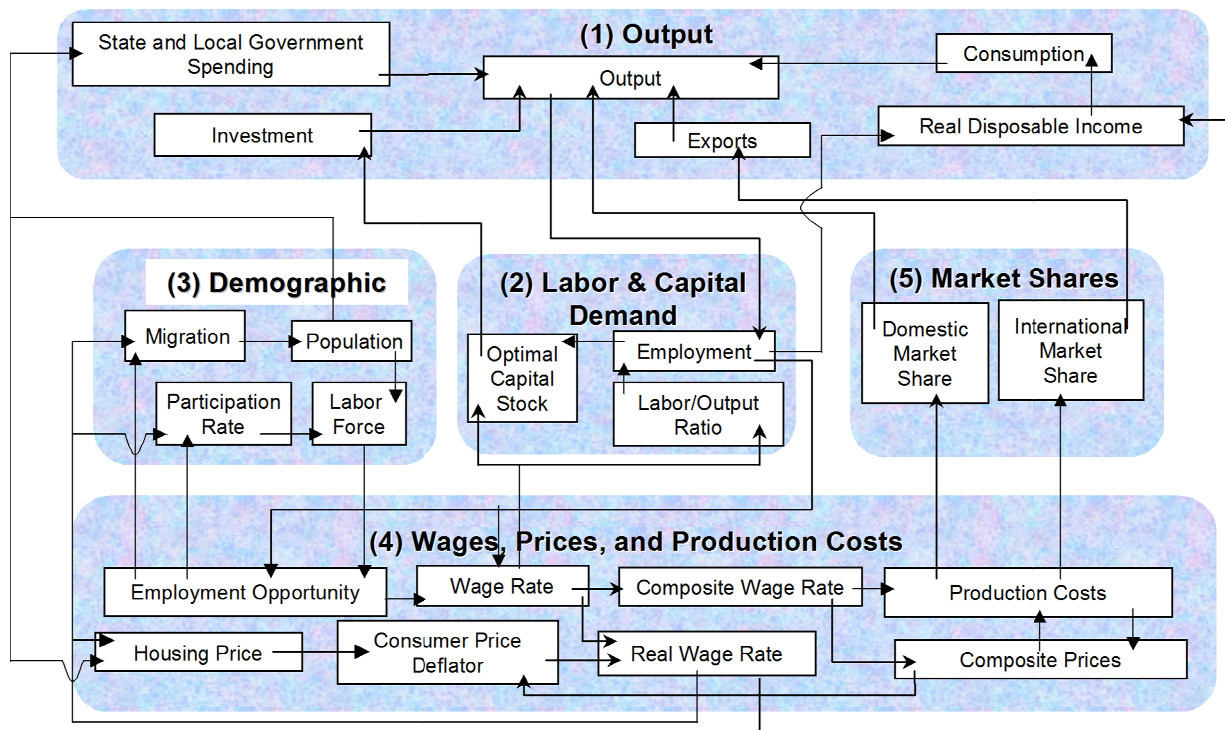
Big Horn	Sweet Grass
Carbon	Treasure
Fergus	Wheatland
Golden Valley	Yellowstone
Judith Basin	
Musselshell	
Petroleum	
Stillwater	

**Figure 2.2**  
**Policy Analysis with the REMI Model**



The use of the model to derive the results of this study is illustrated graphically in Figure 2.2. First, a baseline projection of the economy is produced using the model, utilizing inputs and assumptions which extrapolate growth and conditions of recent history. The model is then used a second time, with identical inputs – except that in this alternative scenario, the activity associated with coal development (including rail) is added. Thus the Spring Creek mine expansion is a change that ultimately produces a different economy, reflecting not only the addition of the production, employment, and expenditures of the project, but how the rest of the economy reacts to those changes. The difference between the baseline and alternative scenarios of the economy represents the economic impact of the Spring Creek mine expansion.

## REMI Model Linkages (Excluding Economic Geography Linkages)



The model utilizes historical data on production, prices, trade flows, migration, and technological change to calibrate the relationship between five basic blocks of the regional economy as depicted above: output, labor and capital demand, population and labor force, wages and prices, and market shares. The changes in production, labor demand, and intermediate demand caused by the construction and operation of an expanded Spring Creek mine causes these blocks of the economy to react and adjust to a new equilibrium. As described above, the difference between the baseline and the alternate scenario is the ultimate impact of coal development.

The essential philosophy of the model is that regions throughout the country compete for investment, jobs, and people. When events occur in a region they set off a chain reaction of actions causing dollar flows toward better investment and production opportunities, followed over time by a flow of workers and households toward employment opportunities and higher wages. The model embodies an 82-sector input-output matrix that describes the technological interdependence of production sectors of the economy, as well as extensive trade and capital flow data to determine the share of each sector's demand that can be met by local production.

The model is extremely well suited for the analysis described in this report. As seen in several of the energy studies listed in the references section, it has been used for similar analyses of energy-related investment and opportunities.

As powerful and flexible as the model is, the answers it provides are only as good as the questions posed to it. The majority of work in this study is carefully crafting the inputs used to construct a scenario of the Montana economy that faithfully represents all of the investments and production that encompass the Spring Creek mine expansion.

### 3. The Direct Economic Contribution of Increased Coal Production at the Spring Creek Mine

The first step in the analysis of the economic impact of increased coal production at Spring Creek is to identify the increased economic activity that is directly associated with the expansion. An increase of production in the amount of 20 million tons annually would represent a more than doubling of coal output at the facility. Such an increase would require an expansion in capital and equipment to mine, process, and deliver the coal to the railcars that would begin its journey to the ultimate customer. It would also require a significant expansion of the labor force and higher purchases of everything from electricity to work uniforms, on an ongoing basis, for each year that the mine operates at this higher level.

The current operations of the mine provide a basis for estimating these increases. In 2011 the Spring Creek mine produce approximately 19.1 million tons of coal using 256 regular employees and a full time equivalent of 55 on-site contractors. We estimate that the expansion would result in 326 additional jobs (including contractors). At the current compensation rate of approximately \$105,000, this would represent an increase in total compensation of \$34.2 million. The increase in other purchases and payments made by the mine as a consequence of expanded operation, including taxes payments to state and local governments, follow straightforwardly using current operations as a base.

While not financially connected to the mine, there is a direct connection between coal output at Spring Creek and railroad transportation within the state of Montana. Current coal production at the mine is shipped by rail to both domestic and international customers, utilizing the rail network in both the western and eastern directions from the mine. It is envisioned in this analysis that the additional coal produced at Spring Creek would be shipped by rail to northwest ports. While the precise rail route is unknown, a glance at a railroad map shows that the likely routes within Montana will involve both BNSF Railway and Montana Rail Link (MRL) lines.

Similarly to the expansion of coal production, the shipment of an additional 20 million tons of coal annually on Montana's rail network requires additional equipment, workforce, and supplies and services of all types. MRL, a Montana-based railroad with a significant network between the Spring Creek mine and the northwest, currently employs about 985 people and has current traffic of about 15 trains a day. In the operating phase, MRL has estimated that it could serve the rail demands a Spring Creek mine expansion would create with an additional 180 workers.

We have used this information to create a rail expansion scenario that is consistent with expanded production at the Spring Creek mine serving Asian markets. Unlike the mining jobs, the additional rail workers live in Montana. Additionally, they are dispersed throughout the state.

#### 4. The Economic Impact of Expanded Production at the Spring Creek Mine

As described in the second section, the impact that the expansion of the Spring Creek mine's coal output would produce in the Montana economy is estimated as the difference between two different futures for state economic growth. The first is a status quo, "no expansion" scenario which reflects trend growth only. The second scenario is one where investments, expanded production, expanded employment, and other aspects of coal and rail expansion do take place. These new jobs and income flows ultimately produce increases in economic activity that are greater than the direct effects discussed in the previous section, as revenues and wages received by Montana businesses and workers, respectively, are spent again within the state.

The REMI model is used to produce both the expansion and no-expansion scenarios for the Montana economy. The difference between these two projections – in terms of jobs, income, production and other measures of economic activity – in any given year is the economic impact of increased coal production at the Spring Creek mine. The expansion scenario calls for increased coal production beginning in year 2016, ramping up to 20 million tons per year by the year 2018. The economic impacts reported in this section pertain to the first year of full production (2018).

It is important to note that the impacts reported here are permanent, occurring each year that expanded operations continue. In fact, in years beyond 2018 the impacts in most cases grow slightly larger – detailed output from the analysis for subsequent years is reported in the appendix.

##### *Summary of Findings*

The results of this research show that the Montana economy would be larger, more prosperous, and more populous if the Spring Creek mine expanded its output. By the year 2018, we find that a permanent increase of:

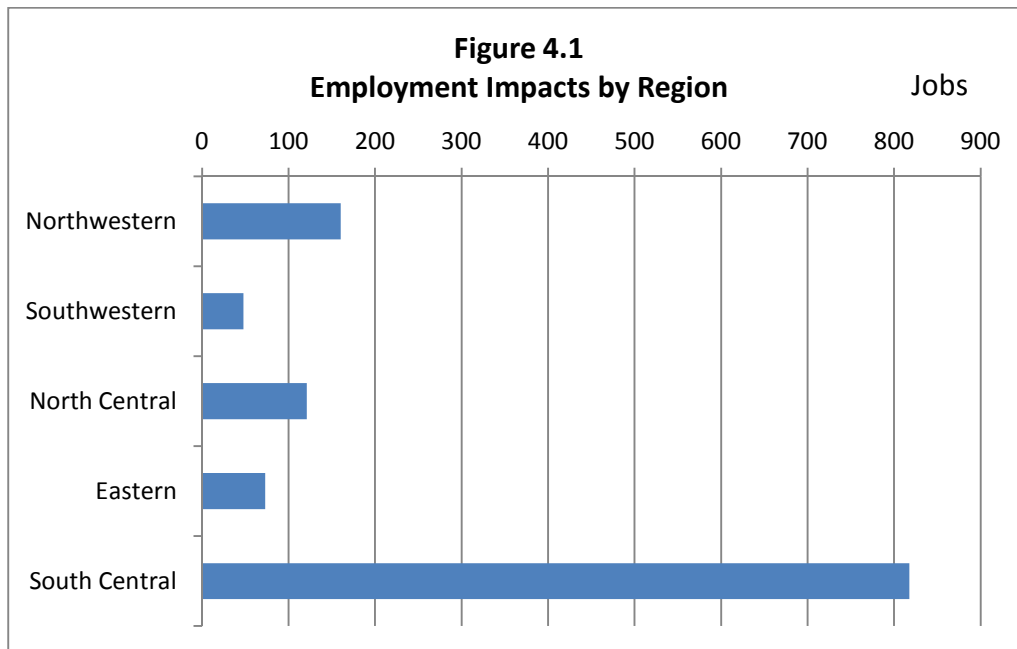
- 1,421 more jobs,
- \$453.5 million in sales,
- \$105.1 million in earnings per year, and
- \$55.4 million in state revenues per year

will occur in the Montana economy as a result of coal expansion at Spring Creek. These increases occur not only because of the mining and rail activities directly tied to the expansion, but also from the induced impacts on the broader economy as the coal-related income and revenues are spent again within the state.

##### *Employment Impacts*

The expanded operation of the Spring Creek mine has a sizable impact on Montana jobs. The 1,421 permanent jobs that are created as a result of the expansion are spread across the five regions of the state, as shown in Figure 4.1, with roughly two-

thirds of the new jobs located in the south central region, which includes both Billings and the mine itself.



Job impacts propagate throughout the state through a number of mechanisms. First, the rail transportation employment and spending take place all along the rail network, which is distributed throughout the state. Jobs in a broad spectrum of industries are induced as the spending of coal and rail workers, as well as the spending of the companies, shows up as income for the businesses they buy from. This includes both private goods and services as well as increased demand for public services such as schools.

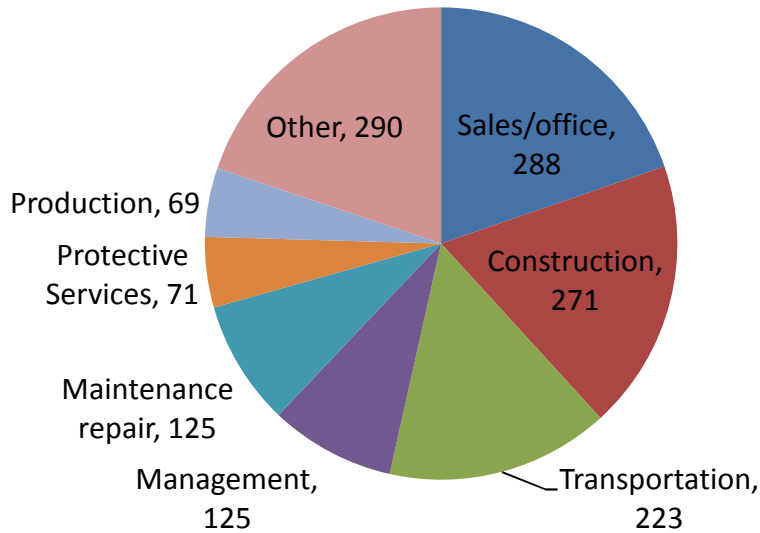
The industries adding the most jobs are mining and transportation and warehousing, as shown in Table 4.1. Since these are the industry categories directly impacted by increased coal production, this is not a surprising outcome. Yet those two industries account for only 35 percent of the 1,421 new jobs created due to mine expansion. Local government jobs are increased by 185, largely through increased employment in local public schools and other local services. As shown in the table, most segments of the economy are affected by mine expansion and the spending by businesses and workers that occurs as a result.

**Table 4.1**  
**Employment Impacts**

<b>Industry</b>	<b>Jobs</b>
Mining	322
Transportation and Warehousing	185
Local Government	180
Construction	167
Professional and Technical Services	96
Retail Trade	77
Health Care and Social Assistance	64
Other Services, except Public Administration	63
State Government	61
Administrative and Waste Services	59
Real Estate and Rental and Leasing	49
Accommodation and Food Services	43
Wholesale Trade	39
Finance and Insurance	15
Arts, Entertainment, and Recreation	13
Utilities	10
Manufacturing	8
Information	4
Educational Services	4
Management of Companies and Enterprises	1
Forestry, Fishing, Related Activities, and Other	0
<b>TOTAL</b>	<b>1,461</b>

It is also possible to consider employment impacts in terms of the occupations of the new jobs. As shown in Figure 4.2, the occupations affected by coal production expansion at the Spring Creek mine are quite varied, with Sales and Office, Construction and Extraction, and Transportation occupations gaining the most jobs.

**Figure 4.2  
Employment Impacts by Occupation**



*Income Impacts*

Increased coal production not only would create new permanent jobs in the Montana economy, it would produce a permanent increase in annual income flowing to Montana households. As was the case for employment, the income impacts reflect both the direct impacts of the mining and transportation activities directly tied to coal production as well as the propagation of those direct effects throughout the economy.

The expansion in coal production at the Spring Creek mine would create a permanent increase in income received by Montana households – defined as personal income – of \$58.8 million per year. As detailed in Table 4.2, this consists of a \$54.2 million increase in earnings net of benefits and Social Security contributions, plus a \$4.7 million increase in unearned income. After taxes, Montana households will collect \$50.6 million more per year because of increased coal operations.

The fact that both coal and rail jobs pay substantially more than the average for all Montana jobs can be seen by an examination of the place-of-work components detailed in Table 4.3. The impact of increased coal production on Earnings by Place of Work, which includes wages and salaries, benefits, and business proprietors’ income, is \$105.1 million per year. Roughly three-quarters of this impact comes from increased wage and salary disbursements.

Even though the 1,461 net new jobs created as a result of increased coal expansion represents a small fraction of the entire state economy, the new jobs added produce a measureable impact on the average wages, compensation, and earnings of all Montana jobs. The average wages per job across the entire economy increase by about \$50 per



year due to coal expansion. Comparable changes occurred to average compensation per job, which includes benefits, as well as total earnings, which includes business proprietors' income.

**Table 4.2**  
**Personal Income Impacts, \$ Millions**

Category	Impact
Total Earnings by Place of Work	105.1
Total Wage and Salary Disbursements	77.7
Supplements to Wages and Salaries	22.4
Employer contributions for employee pension and insurance funds	14.2
Employer contributions for government social insurance	8.2
Proprietors' income with inventory valuation and capital consumption adjustments	5.0
Less: Contributions for government social insurance	16.0
Employee and self-employed contributions for government social insurance	7.9
Employer contributions for government social insurance	8.2
Plus: Adjustment for residence	-34.8
Gross In	-32.8
Gross Out	2.1
Equals: Net earnings by place of residence	54.2
Plus: Rental, Personal interest, and Personal dividend income	4.0
Plus: Personal current transfer receipts	0.7
Equals: Personal Income	58.8
Less: Personal current taxes	8.2
Equals: Disposable personal income	50.6

\* Total earnings data are derived from records of employers who are located in Montana. Since some Montana workers are employed by out-of-state firms, and some Montana firms employ workers from other states, the adjustment for residence nets out these two impacts to produce an estimate of Montana residents' income.

**Table 4.3**  
**Compensation Impacts**

Category	Units	Impacts
Wage and Salary Disbursements	\$ Millions	77.7
Compensation	\$ Millions	100.1
Earnings by Place of Work	\$ Millions	105.1
Average Annual Wage Rate	\$ Thousands	0.050
Average Annual Compensation Rate	\$ Thousands	0.065
Average Annual Earnings Rate	\$ Thousands	0.058

Note: Compensation includes cash and non-cash employee benefits, including health, retirement, and other employer-funded programs. Earnings includes employee compensation and proprietor's income. All compensation is measured on a place-of-work basis.

### *Output Impacts*

Output, or gross sales, across the Montana economy will see significant impacts as a result of increased coal production at Spring Creek. Because of the highly productive and capital intensive nature of the surface mine at Spring Creek, the output impacts are more heavily concentrated in the mining industry than was the case for employment, as shown in Table 4.4. The \$295.8 million in coal output in year 2018 is consistent with 20 million tons additional output, valued at prices third-party analysts expect to see in the coming years.

But there is significant impact on the output of other sectors as well. Transportation and Warehousing, which includes rail transportation output, would realize \$66.6 million in additional output statewide due to coal expansion. A wide variety of industries, from Real Estate and Construction to Retail Trade and Health Care, will see sizable gains as well.

**Table 4.4**  
**Output (Gross) Impacts**  
 (Private Sector, \$ Millions)

Industry	Impact
Mining	295.8
Transportation and Warehousing	66.6
Construction	20.1
Real Estate and Rental and Leasing	10.6
Professional and Technical Services	9.8
Wholesale Trade	8.1
Utilities	7.3
Health Care and Social Assistance	7.0
Retail Trade	7.0
Administrative and Waste Services	4.9
Finance and Insurance	4.4
Manufacturing	4.0
Other Services, except Public Administration	3.0
Accommodation and Food Services	2.4
Information	1.3
Management of Companies and Enterprises	0.6
Arts, Entertainment, and Recreation	0.4
Educational Services	0.1
Forestry, Fishing, Related Activities, and Other	0.0

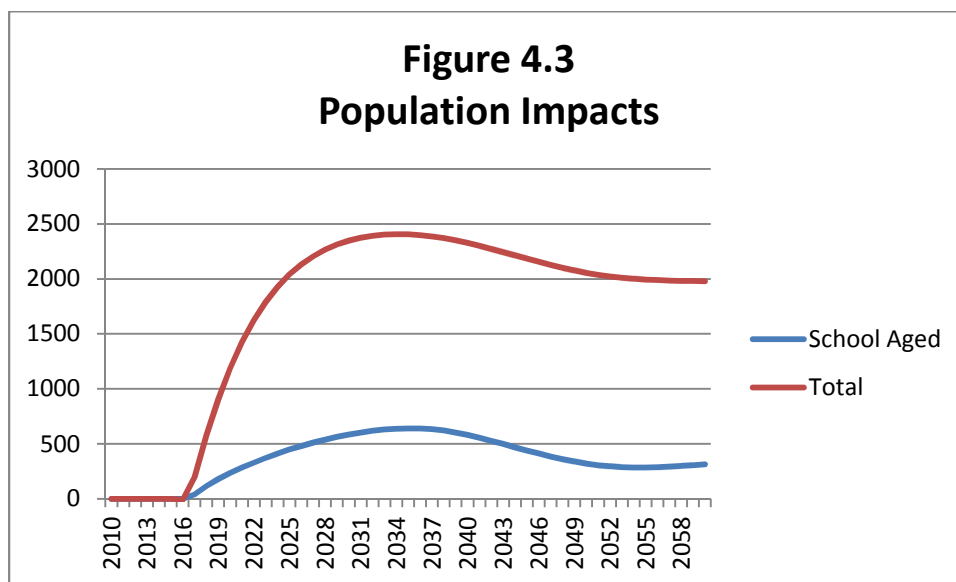
*Population Impacts*

The expansion in the Montana economy that would occur if coal production were increased at Spring Creek mine represents an improvement in the relative job opportunities in Montana. Accordingly, we can expect those opportunities to draw in people from other states and regions. This shows up as a population increase in the coal expansion scenario, compared to the no expansion scenario. The response of population occurs more slowly than other changes, however, for two reasons.

First, the response of people to job opportunities in other states does not occur instantaneously. Rather, it takes time – years, in fact – for people and families to transport their households across the distances involved. The second reason for the slow response of population is due to demographic cycles – as new residents marry and

have children, the impact on population counts grows. Clearly, this unfolds over time as well.

Consistent with all of the findings of this report, we reported that the population of Montana would increase by 568 as a result of an increase in coal output at the Spring Creek mine. As with all other impacts reported here, that impact pertains to the year 2018, which is the first year that the full increase is realized in the coal expansion scenario.



However, as shown in Figure 4.3 above, the impact on population in subsequent years is substantially larger. Demographic effects cause the number to slightly overshoot, but the impacts ultimately settle down to about 2,000 people in the state whose presence here is due to coal expansion. More people creates more demand for housing, services, and public schooling. The impact on the school-aged population peaks at about 650 around year 2035.

#### *State and Local Revenue Impacts*

Coal production has implications for state and local tax revenues that are relatively large compared to other types of industrial development. In addition to these energy-specific taxes, we can expect state and local tax revenues to be larger in a coal expansion scenario because the base for more forms of tax and non-tax revenue is larger. We have estimated the state and local revenue impacts of increased coal expansion at the Spring Creek mine by (i) estimating the impact on the tax or non-tax revenue base (e.g., income, sales, corporate profits), and (ii) using average effective rates to compute an estimated revenue impact. We excluded the property tax from these computations.

As can be seen from Table 4.5, the impact of increased coal expansion at the Spring Creek mine is substantial. Two coal specific taxes – the coal severance tax and the Resource Indemnity and Groundwater Assessment Tax (RIGWAT) – by themselves

yield a permanent new tax stream of \$45.1 million to state government. Other tax and non-tax revenues – including individual and corporate income taxes, selected sales taxes, intergovernmental revenues and other charges and revenues – yield another \$10.4 million per year in revenue the state would not enjoy in a no-expansion scenario.

**Table 4.5**

**State and Local Revenue Impacts (\$ mill.)**

Category	Impact
<b>Selected State Revenues</b>	
Coal Severance Tax	43.9
RIGWAT	1.2
Other Selected Revenues*	10.4
<b>TOTAL</b>	<b>55.4</b>
<b>Selected Local Revenues</b>	
Gross Proceeds Tax	14.7
<b>TOTAL</b>	<b>14.7</b>
<b>TOTAL</b>	<b>70.1</b>

\*Includes intergovernmental revenue, selected sales, individual income, corporate income, and other charges and revenues as classified by the U.S. Census of Governments. Does not include property taxes.

The Gross Proceeds Tax revenue impact of \$14.7 million per year is directed toward the county where the coal production takes place – in this case, Big Horn County.

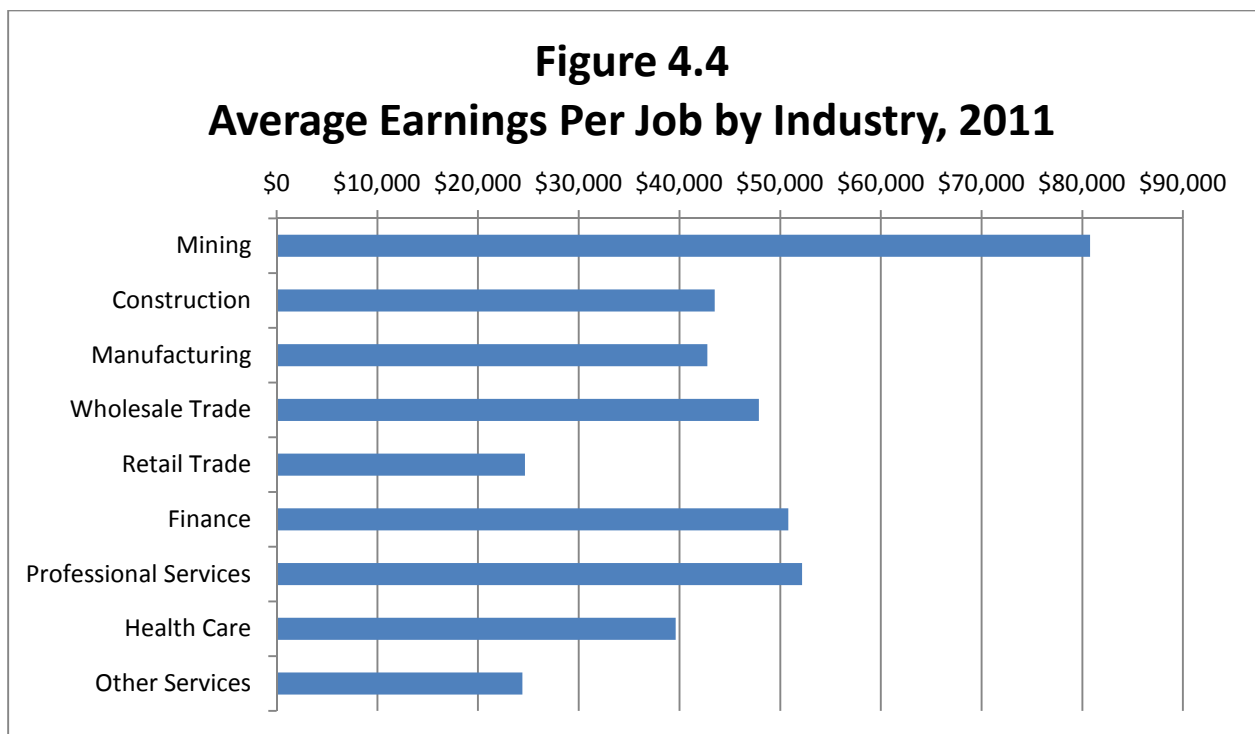
The total for the selected state a local revenue impacts shown is more than \$70 million per year. Property taxes, not included in this analysis, would add to this figure.

**Results Summary**

These results demonstrate that by any measure – jobs, income, output, or population – the economy of the state of Montana stands to benefit in terms of growth as a result of coal expansion at the Spring Creek mine. Even after accounting for the fact that additional workers employed by the mine would live across the border in Wyoming, we find that the additional production of 20 million tons per year at the Spring Creek coal mine would ultimately produce a Montana economy that is larger, more prosperous, and more populous than would occur if no expansion took place.

## 5. Conclusion

The continuing economic contributions of the mining industry in general, and the coal mining industry in particular, are not well understood by many Montanans. At best, some think of mining as a relic of the state's economic past, with little appreciation of its current contribution to Montana's job base and tax revenues, not to mention its growth potential. They might be surprised to learn how much more average mining jobs pay in wages and salaries than jobs in other Montana industries (see Figure 4.4 below), and how the number of those jobs in the coal mining industry has the potential to grow in the near future. The lack of relevant, accurate information on coal's direct and indirect contribution to the economic livelihoods of households, businesses, and governments across Montana should be a concern to those with a stake in its future.



This project addresses that information gap. We have analyzed, assessed, and described the impacts on the state economy that are attributable to the expanded operations of the largest coal mine in Montana, the Spring Creek coal mine operated by Cloud Peak Energy. The size of these impacts underscores the linkages between all facets of the activity at Spring Creek to the ultimate size of the economic pie shared by all Montanans and the continued importance of those activities to our economic well being.

An expansion in coal production at the Spring Creek mine of 20 million tons per year, together with the necessary expansion in rail transportation services to meet that new demand, would ultimately produce a Montana economy that has

- 1,421 more permanent jobs, of which 1,220 are in the private sector;
- \$58.8 million per year in additional income received by Montana households for every year expanded production takes place;
- \$453.5 million in additional output (gross sales) of Montana-based businesses, spread across a wide spectrum of both manufacturing and service-oriented industries;
- More income and employment in every region of the state, thanks to the linkages and trade between regions as well as the broad dispersal of the new railroad jobs that would occur as a result of expanded coal production;
- More than \$70 million per year in state and local government revenues (not including increased property tax collections) through both energy-specific taxes as well as growth in the overall tax and non-tax revenue base.

These impacts all pertain to the first year of that a full expansion of coal production is realized. It is notable that population impacts continue to grow slowly beyond this year, ultimately reaching about 2,000 after two decades.

There are certainly other dimensions to the public policy issues that arise from energy and industrial development than economic impacts. But this report makes it clear that the connection between coal development and economic prosperity is significant, and the sizable contribution that such development makes to the state economy should not be discounted.

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APPENDIX  
REMI Tables

# Spring Creek Output Expansion Economic Summary

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

Category	Units	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Employment	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+299.000	+864.125	+1461.125	+1499.500
Total Employment as % of Nation	Percent	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.001	+0.001
Private Non-Farm Employment	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+232.813	+712.563	+1219.563	+1252.813
Private Non-Farm Employment as % of N	Percent	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.001	+0.001
Gross Domestic Product	Millions of Fixed (2005) I	0.000	0.000	0.000	0.000	0.000	0.000	+52.559	+120.313	+190.410	+193.273
Gross Domestic Product (GDP) as % of N	Percent	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.001	+0.001	+0.001
Output	Millions of Fixed (2005) I	0.000	0.000	0.000	0.000	0.000	0.000	+105.398	+235.406	+370.109	+375.930
Value Added	Millions of Fixed (2005) I	0.000	0.000	0.000	0.000	0.000	0.000	+52.563	+120.316	+190.406	+193.270
Personal Income	Millions of Current Dollar	0.000	0.000	0.000	0.000	0.000	0.000	-11.551	+23.266	+66.207	+75.074
Personal Income as % of Nation	Percent	0.000	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.000
Disposable Personal Income	Millions of Current Dollar	0.000	0.000	0.000	0.000	0.000	0.000	-9.500	+20.266	+56.969	+64.836
Disposable Personal Income as % of Nati	Percent	0.000	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.000
PCE-Price Index	2005=100 (Nation)	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	+0.003	+0.006
Real Disposable Personal Income	Millions of Fixed (2005) I	0.000	0.000	0.000	0.000	0.000	0.000	-6.945	+15.395	+41.148	+45.102
Real Disposable Personal Income as % of	Percent	0.000	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.000
Population	Individuals	0.000	0.000	0.000	0.000	0.000	0.000	-7.625	+198.875	+578.625	+906.000
Population as % of Nation	Percent	0.000	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.000	+0.000

# Spring Creek Output Expansion Economic Summary

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
+1502.063	+1484.938	+1458.313	+1430.000	+1401.875	+1376.625	+1353.563	+1333.438	+1316.625	+1303.188	+1291.375	+1282.375	+1275.688	+1272.875	+1267.125
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
+1253.250	+1235.313	+1209.063	+1181.563	+1154.875	+1130.875	+1109.500	+1090.938	+1075.688	+1063.563	+1053.063	+1045.250	+1039.750	+1037.688	+1033.125
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
+193.477	+193.488	+192.813	+192.000	+191.109	+190.375	+189.770	+189.375	+189.180	+189.289	+189.488	+189.965	+190.613	+191.660	+192.527
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
+378.563	+378.891	+378.016	+376.891	+375.555	+374.445	+373.469	+372.750	+372.281	+372.266	+372.281	+372.656	+373.227	+374.367	+375.156
+193.477	+193.488	+192.813	+191.996	+191.109	+190.379	+189.777	+189.375	+189.180	+189.285	+189.492	+189.953	+190.613	+191.656	+192.535
+80.820	+84.953	+87.891	+90.375	+92.563	+94.617	+96.703	+98.867	+101.336	+104.492	+108.008	+112.172	+117.133	+123.086	+128.641
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+70.020	+73.820	+76.582	+78.934	+81.023	+82.984	+84.977	+87.008	+89.313	+92.195	+95.406	+99.180	+103.633	+108.961	+113.961
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+0.007	+0.008	+0.008	+0.008	+0.008	+0.008	+0.008	+0.007	+0.007	+0.007	+0.007	+0.007	+0.007	+0.007	+0.007
+47.320	+48.563	+49.086	+49.320	+49.328	+49.242	+49.129	+49.031	+49.027	+49.285	+49.625	+50.164	+51.016	+52.172	+53.063
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+1187.250	+1425.500	+1624.500	+1790.250	+1927.125	+2040.000	+2132.125	+2206.375	+2265.875	+2312.625	+2348.125	+2374.125	+2392.125	+2403.250	+2407.625
+0.000	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001

# Spring Creek Output Expansion Economic Summary

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
+1260.438	+1253.125	+1244.563	+1236.563	+1226.063	+1216.563	+1205.375	+1197.500	+1188.250	+1181.063	+1175.125	+1167.938	+1159.750	+1152.750	+1148.063
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+1027.688	+1021.688	+1014.688	+1008.188	+999.625	+991.938	+982.813	+976.813	+969.438	+963.875	+959.438	+953.750	+947.250	+941.438	+938.000
+0.001	+0.001	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+193.402	+194.285	+195.125	+196.117	+196.914	+197.898	+198.703	+199.961	+200.922	+201.711	+202.531	+203.164	+203.711	+204.406	+205.391
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
+375.813	+376.391	+376.797	+377.422	+377.570	+378.055	+378.063	+378.742	+378.977	+379.563	+380.344	+380.906	+381.281	+381.781	+382.609
+193.398	+194.281	+195.117	+196.125	+196.914	+197.891	+198.703	+199.961	+200.938	+201.727	+202.531	+203.164	+203.711	+204.406	+205.391
+134.289	+140.406	+146.781	+153.813	+160.953	+168.531	+176.453	+185.406	+194.406	+203.656	+213.406	+223.188	+233.516	+244.734	+257.594
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+119.031	+124.531	+130.281	+136.594	+143.047	+149.875	+157.031	+165.094	+173.219	+181.578	+190.375	+199.234	+208.563	+218.719	+230.297
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+0.007	+0.007	+0.007	+0.008	+0.008	+0.008	+0.008	+0.009	+0.009	+0.009	+0.009	+0.009	+0.009	+0.009	+0.010
+53.855	+54.742	+55.648	+56.656	+57.617	+58.609	+59.613	+60.852	+61.988	+63.129	+64.262	+65.258	+66.301	+67.438	+68.875
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+2405.750	+2398.875	+2386.875	+2370.875	+2350.750	+2327.125	+2300.500	+2273.125	+2244.625	+2215.250	+2186.125	+2156.875	+2128.375	+2101.125	+2076.875
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001

# Spring Creek Output Expansion Economic Summary

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
+1142.250	+1138.625	+1133.188	+1130.438	+1129.375	+1127.000	+1126.625	+1127.000	+1127.500	+1129.625	+1130.250
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+933.500	+930.750	+926.813	+925.313	+925.188	+923.813	+924.313	+925.313	+926.563	+929.125	+930.375
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+206.344	+207.633	+208.867	+210.195	+211.430	+212.211	+213.078	+213.961	+214.789	+215.750	+216.414
+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
+383.219	+384.234	+384.875	+385.984	+387.484	+388.500	+389.906	+391.453	+393.094	+395.109	+396.688
+206.359	+207.625	+208.859	+210.195	+211.430	+212.211	+213.094	+213.961	+214.797	+215.758	+216.414
+271.031	+286.219	+302.500	+320.438	+339.750	+360.000	+382.250	+406.406	+432.313	+460.875	+490.875
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+242.438	+256.094	+270.781	+286.969	+304.438	+322.750	+342.875	+364.750	+388.188	+414.094	+441.313
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+0.010	+0.011	+0.011	+0.012	+0.012	+0.013	+0.014	+0.015	+0.015	+0.016	+0.017
+70.320	+72.023	+73.820	+75.852	+77.977	+80.070	+82.383	+84.906	+87.586	+90.563	+93.484
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000
+2055.375	+2037.250	+2022.375	+2010.875	+2002.000	+1994.750	+1989.125	+1984.625	+1981.750	+1980.125	+1978.750
+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000

# Spring Creek Output Expansion

## Employment | Industry | Private Non-Farm | Private Non-Farm Employment | Sector Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

Category	Units	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Forestry, Fishing, Related Activities, and (	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+0.019	+0.092	+0.133	+0.054
Mining	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+110.465	+218.628	+322.352	+315.190
Utilities	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+3.086	+6.545	+9.864	+9.609
Construction	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+20.250	+82.797	+166.766	+197.555
Manufacturing	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+2.398	+5.523	+8.436	+8.146
Wholesale Trade	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+5.469	+22.264	+38.816	+39.361
Retail Trade	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	-10.016	+32.461	+76.930	+80.078
Transportation and Warehousing	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+62.121	+124.428	+185.059	+180.035
Information	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+0.406	+2.102	+3.823	+3.862
Finance and Insurance	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+2.965	+9.094	+14.801	+14.324
Real Estate and Rental and Leasing	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+6.984	+27.613	+49.410	+50.863
Professional and Technical Services	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+25.168	+59.859	+95.938	+97.281
Management of Companies and Enterprise	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+0.529	+1.054	+1.499	+1.412
Administrative and Waste Services	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+13.826	+38.658	+63.951	+64.668
Educational Services	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	-0.227	+1.620	+3.934	+4.674
Health Care and Social Assistance	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	-9.078	+25.758	+63.383	+64.680
Arts, Entertainment, and Recreation	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	+0.396	+6.539	+13.111	+13.789
Accommodation and Food Services	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	-1.102	+18.863	+42.656	+49.449
Other Services, except Public Administrati	Individuals (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	-0.828	+28.672	+58.660	+57.832

# Spring Creek Output Expansion

## Employment | Industry | Private Non-Farm | Private Non-Farm Employment | Sector Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
-0.021	-0.086	-0.137	-0.174	-0.197	-0.209	-0.213	-0.209	-0.198	-0.181	-0.163	-0.141	-0.118	-0.096	-0.073
+307.553	+300.546	+293.710	+287.569	+281.563	+276.216	+270.968	+265.793	+261.220	+256.773	+252.361	+247.981	+243.622	+239.826	+236.044
+9.312	+8.931	+8.568	+8.239	+7.934	+7.655	+7.400	+7.166	+6.950	+6.756	+6.570	+6.397	+6.233	+6.084	+5.934
+207.406	+205.297	+196.672	+185.281	+173.133	+161.406	+150.766	+141.359	+133.211	+125.828	+119.570	+114.547	+110.766	+108.273	+106.047
+7.742	+7.234	+6.756	+6.346	+6.006	+5.738	+5.531	+5.383	+5.264	+5.160	+5.070	+5.004	+4.951	+4.918	+4.879
+39.580	+39.221	+38.703	+38.168	+37.643	+37.137	+36.662	+36.213	+35.795	+35.436	+35.064	+34.742	+34.457	+34.244	+33.904
+81.594	+81.742	+81.203	+80.469	+79.695	+79.117	+78.727	+78.477	+78.430	+78.734	+79.227	+79.930	+80.813	+81.969	+82.508
+174.514	+169.209	+164.197	+159.484	+155.033	+150.818	+146.813	+142.984	+139.322	+135.822	+132.445	+129.186	+126.029	+122.969	+119.984
+3.785	+3.651	+3.521	+3.410	+3.331	+3.280	+3.253	+3.243	+3.254	+3.279	+3.310	+3.347	+3.389	+3.437	+3.467
+13.678	+12.990	+12.381	+11.900	+11.547	+11.314	+11.184	+11.137	+11.148	+11.223	+11.316	+11.441	+11.580	+11.734	+11.848
+50.320	+48.586	+46.406	+44.188	+42.098	+40.266	+38.676	+37.293	+36.191	+35.398	+34.773	+34.336	+34.059	+33.969	+33.750
+97.047	+95.785	+94.395	+93.215	+92.266	+91.625	+91.215	+91.047	+91.043	+91.258	+91.500	+91.855	+92.297	+92.883	+93.324
+1.340	+1.263	+1.202	+1.160	+1.130	+1.113	+1.104	+1.102	+1.104	+1.110	+1.116	+1.121	+1.126	+1.131	+1.132
+64.266	+63.223	+62.080	+61.072	+60.195	+59.516	+58.965	+58.570	+58.293	+58.191	+58.137	+58.176	+58.281	+58.480	+58.555
+5.181	+5.543	+5.801	+6.003	+6.161	+6.296	+6.414	+6.512	+6.603	+6.701	+6.790	+6.872	+6.961	+7.056	+7.119
+64.930	+64.930	+65.031	+65.586	+66.570	+67.844	+69.391	+71.188	+73.289	+75.859	+78.453	+81.328	+84.477	+87.953	+90.688
+14.111	+14.254	+14.338	+14.422	+14.529	+14.674	+14.844	+15.061	+15.316	+15.637	+15.963	+16.326	+16.719	+17.143	+17.465
+54.949	+59.305	+62.898	+65.965	+68.598	+70.883	+72.832	+74.520	+76.023	+77.500	+78.773	+79.930	+81.000	+82.094	+82.797
+55.969	+53.652	+51.332	+49.305	+47.598	+46.184	+45.016	+44.117	+43.434	+43.082	+42.836	+42.859	+43.102	+43.621	+43.758

# Spring Creek Output Expansion

## Employment | Industry | Private Non-Farm | Private Non-Farm Employment | Sector Level

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
-0.050	-0.030	-0.010	+0.009	+0.028	+0.046	+0.064	+0.082	+0.100	+0.117	+0.135	+0.151	+0.167	+0.183	+0.201
+232.280	+228.520	+224.762	+221.558	+217.820	+214.644	+210.930	+208.288	+204.597	+201.441	+198.827	+195.686	+192.546	+189.430	+186.830
+5.790	+5.649	+5.512	+5.383	+5.250	+5.129	+5.005	+4.894	+4.785	+4.689	+4.601	+4.513	+4.429	+4.349	+4.274
+103.938	+102.117	+100.344	+98.828	+97.344	+95.961	+94.617	+93.758	+92.906	+92.250	+91.711	+91.031	+90.164	+89.555	+89.367
+4.832	+4.785	+4.734	+4.684	+4.621	+4.561	+4.488	+4.420	+4.330	+4.254	+4.186	+4.125	+4.063	+3.977	+3.887
+33.518	+33.092	+32.631	+32.158	+31.615	+31.076	+30.484	+29.938	+29.281	+28.717	+28.174	+27.617	+27.041	+26.467	+25.916
+82.852	+82.984	+83.039	+83.102	+82.930	+82.797	+82.531	+82.438	+82.484	+82.875	+83.398	+83.836	+83.695	+83.617	+83.727
+117.076	+114.240	+111.467	+108.770	+106.123	+103.543	+101.020	+98.574	+96.170	+93.826	+91.549	+89.316	+87.137	+85.010	+82.932
+3.484	+3.500	+3.502	+3.500	+3.492	+3.479	+3.458	+3.441	+3.418	+3.397	+3.370	+3.344	+3.317	+3.285	+3.262
+11.930	+11.994	+12.039	+12.072	+12.074	+12.072	+12.047	+12.027	+11.984	+11.934	+11.871	+11.781	+11.676	+11.559	+11.445
+33.512	+33.219	+32.824	+32.406	+31.883	+31.348	+30.738	+30.250	+29.742	+29.305	+28.941	+28.559	+28.176	+27.848	+27.637
+93.719	+94.063	+94.332	+94.648	+94.793	+95.000	+95.074	+95.305	+95.406	+95.594	+95.781	+95.891	+95.953	+96.008	+96.156
+1.131	+1.129	+1.124	+1.118	+1.109	+1.100	+1.088	+1.077	+1.059	+1.042	+1.024	+1.004	+0.984	+0.963	+0.941
+58.555	+58.516	+58.406	+58.293	+58.031	+57.785	+57.453	+57.191	+56.871	+56.563	+56.258	+55.891	+55.480	+55.094	+54.750
+7.173	+7.214	+7.245	+7.271	+7.276	+7.281	+7.270	+7.248	+7.203	+7.146	+7.067	+6.952	+6.811	+6.646	+6.479
+93.117	+95.367	+97.281	+99.063	+100.602	+102.203	+103.719	+105.750	+107.719	+109.719	+111.672	+113.453	+115.172	+117.094	+119.422
+17.740	+17.973	+18.145	+18.283	+18.367	+18.428	+18.457	+18.512	+18.564	+18.645	+18.742	+18.836	+18.938	+19.061	+19.242
+83.289	+83.625	+83.766	+83.742	+83.477	+83.117	+82.570	+82.109	+81.586	+81.102	+80.664	+80.117	+79.516	+78.906	+78.414
+43.809	+43.762	+43.523	+43.246	+42.793	+42.355	+41.836	+41.512	+41.262	+41.270	+41.430	+41.668	+41.961	+42.438	+43.148



# Spring Creek Output Expansion

## Employment | Industry | Private Non-Farm | Private Non-Farm Employment | Sector Level

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
+0.213	+0.229	+0.240	+0.250	+0.261	+0.267	+0.275	+0.279	+0.282	+0.283	+0.282
+183.720	+181.136	+177.997	+175.357	+172.730	+169.572	+166.939	+164.323	+161.716	+159.635	+157.035
+4.199	+4.126	+4.058	+3.999	+3.945	+3.888	+3.836	+3.787	+3.740	+3.698	+3.652
+89.211	+89.289	+89.188	+89.430	+89.953	+90.164	+90.633	+91.250	+92.016	+93.180	+94.148
+3.783	+3.660	+3.547	+3.455	+3.406	+3.357	+3.332	+3.303	+3.277	+3.258	+3.230
+25.336	+24.771	+24.174	+23.650	+23.207	+22.758	+22.363	+22.002	+21.660	+21.334	+20.984
+83.688	+83.773	+83.398	+83.445	+83.859	+84.344	+85.086	+85.984	+86.930	+87.984	+88.938
+80.896	+78.914	+76.977	+75.088	+73.242	+71.428	+69.668	+67.945	+66.262	+64.619	+63.004
+3.228	+3.201	+3.166	+3.136	+3.104	+3.076	+3.040	+3.002	+2.966	+2.926	+2.884
+11.311	+11.170	+11.025	+10.877	+10.725	+10.547	+10.377	+10.201	+10.027	+9.855	+9.664
+27.418	+27.281	+27.211	+27.234	+27.301	+27.324	+27.410	+27.527	+27.645	+27.785	+27.848
+96.180	+96.359	+96.539	+96.859	+97.211	+97.453	+97.789	+98.078	+98.422	+98.781	+99.016
+0.919	+0.894	+0.868	+0.843	+0.817	+0.789	+0.761	+0.733	+0.704	+0.675	+0.646
+54.367	+54.043	+53.816	+53.664	+53.543	+53.367	+53.250	+53.145	+53.066	+53.039	+52.949
+6.288	+6.102	+5.906	+5.742	+5.614	+5.516	+5.451	+5.419	+5.406	+5.420	+5.443
+121.625	+124.156	+126.594	+129.266	+131.938	+134.328	+136.813	+139.156	+141.344	+143.609	+145.656
+19.410	+19.617	+19.836	+20.121	+20.461	+20.805	+21.191	+21.613	+22.043	+22.484	+22.922
+77.883	+77.438	+76.977	+76.727	+76.672	+76.672	+76.820	+77.047	+77.273	+77.578	+77.828
+43.805	+44.609	+45.305	+46.180	+47.188	+48.156	+49.266	+50.484	+51.719	+53.008	+54.234

# Spring Creek Output Expansion

## Personal Income

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

Category	Units	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Earnings by Place of Work	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+23.625	+62.023	+105.051	+108.324
Total Wage and Salary Disbursements	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+17.719	+45.898	+77.723	+80.664
Supplements to Wages and Salaries	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+5.643	+13.602	+22.375	+23.372
Employer contributions for employee pe	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+3.586	+8.636	+14.201	+14.833
Employer contributions for government	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+2.057	+4.966	+8.173	+8.539
Proprietors' income with inventory valua	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.264	+2.524	+4.953	+4.291
Less: Contributions for Government Socia	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+3.825	+9.574	+16.036	+16.699
Employee and Self-Employed Contributor	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+1.769	+4.608	+7.863	+8.160
Employer contributions for government s	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+2.057	+4.966	+8.173	+8.539
Plus: Adjustment for Residence	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-34.172	-34.484	-34.836	-34.860
Gross In	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-33.686	-33.246	-32.761	-32.729
Gross Out	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.486	+1.238	+2.075	+2.131
Equals: Net Earnings by Place of Residenc	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-14.373	+17.965	+54.176	+56.764
Plus: Rental, Personal Interest, and Perso	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-0.055	+1.295	+4.017	+6.396
Plus: Personal Current Transfer Receipts	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+3.736	+1.840	+0.653	+2.134
Equals: Personal Income	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-10.691	+21.102	+58.848	+65.293
Less: Personal current taxes	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-1.898	+2.716	+8.212	+8.907
Equals: Disposable personal income	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-8.793	+18.383	+50.633	+56.387

# Spring Creek Output Expansion

## Personal Income

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
+108.449	+107.090	+104.820	+102.293	+99.719	+97.293	+95.059	+93.016	+91.344	+90.207	+89.309	+88.727	+88.598	+89.027	+89.066
+81.307	+80.795	+79.586	+78.133	+76.566	+75.059	+73.633	+72.311	+71.225	+70.459	+69.889	+69.506	+69.297	+69.346	+69.359
+23.856	+24.092	+24.159	+24.151	+24.085	+24.000	+23.899	+23.785	+23.702	+23.679	+23.684	+23.712	+23.764	+23.863	+23.945
+15.140	+15.289	+15.331	+15.326	+15.284	+15.230	+15.166	+15.093	+15.040	+15.025	+15.028	+15.046	+15.079	+15.141	+15.193
+8.717	+8.803	+8.828	+8.825	+8.801	+8.771	+8.734	+8.692	+8.662	+8.654	+8.656	+8.667	+8.686	+8.722	+8.752
+3.290	+2.206	+1.071	+0.006	-0.940	-1.767	-2.473	-3.077	-3.586	-3.938	-4.257	-4.497	-4.467	-4.180	-4.241
+16.942	+16.977	+16.879	+16.729	+16.546	+16.363	+16.181	+16.004	+15.864	+15.779	+15.723	+15.694	+15.692	+15.732	+15.764
+8.226	+8.174	+8.052	+7.904	+7.745	+7.592	+7.447	+7.313	+7.202	+7.125	+7.067	+7.028	+7.006	+7.011	+7.011
+8.717	+8.803	+8.828	+8.825	+8.801	+8.771	+8.734	+8.692	+8.662	+8.654	+8.656	+8.667	+8.686	+8.722	+8.752
-34.859	-34.846	-34.826	-34.804	-34.782	-34.762	-34.743	-34.726	-34.712	-34.702	-34.695	-34.690	-34.689	-34.695	-34.695
-32.733	-32.753	-32.782	-32.814	-32.847	-32.878	-32.906	-32.931	-32.952	-32.968	-32.979	-32.987	-32.991	-32.990	-32.991
+2.127	+2.094	+2.044	+1.990	+1.935	+1.884	+1.838	+1.795	+1.760	+1.735	+1.716	+1.702	+1.698	+1.705	+1.704
+56.650	+55.266	+53.115	+50.760	+48.387	+46.168	+44.133	+42.285	+40.766	+39.723	+38.895	+38.340	+38.219	+38.602	+38.609
+8.456	+10.262	+11.814	+13.166	+14.339	+15.339	+16.218	+16.998	+17.710	+18.388	+19.045	+19.703	+20.354	+20.994	+21.607
+3.596	+4.967	+6.199	+7.292	+8.254	+9.072	+9.797	+10.443	+11.029	+11.570	+12.094	+12.624	+13.151	+13.663	+14.172
+68.703	+70.496	+71.125	+71.223	+70.980	+70.578	+70.152	+69.727	+69.504	+69.684	+70.031	+70.668	+71.723	+73.250	+74.391
+9.180	+9.238	+9.153	+9.013	+8.845	+8.673	+8.512	+8.361	+8.248	+8.197	+8.172	+8.187	+8.260	+8.402	+8.489
+59.523	+61.258	+61.977	+62.207	+62.133	+61.906	+61.641	+61.367	+61.254	+61.484	+61.859	+62.477	+63.461	+64.852	+65.898

# Spring Creek Output Expansion

## Personal Income

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
+89.141	+89.262	+89.352	+89.578	+89.609	+89.746	+89.809	+90.227	+90.430	+90.598	+90.844	+90.910	+90.945	+91.148	+91.703
+69.389	+69.457	+69.516	+69.680	+69.695	+69.781	+69.805	+70.078	+70.191	+70.277	+70.418	+70.422	+70.410	+70.496	+70.801
+24.022	+24.102	+24.175	+24.268	+24.317	+24.378	+24.423	+24.527	+24.583	+24.624	+24.670	+24.670	+24.663	+24.671	+24.730
+15.241	+15.291	+15.337	+15.396	+15.426	+15.465	+15.493	+15.558	+15.593	+15.619	+15.647	+15.647	+15.643	+15.647	+15.685
+8.781	+8.810	+8.838	+8.872	+8.891	+8.913	+8.930	+8.969	+8.990	+9.005	+9.022	+9.023	+9.021	+9.024	+9.046
-4.272	-4.293	-4.340	-4.370	-4.404	-4.416	-4.416	-4.379	-4.344	-4.303	-4.242	-4.181	-4.128	-4.023	-3.828
+15.795	+15.832	+15.864	+15.915	+15.936	+15.965	+15.985	+16.050	+16.083	+16.107	+16.139	+16.140	+16.136	+16.148	+16.201
+7.014	+7.021	+7.026	+7.043	+7.044	+7.052	+7.055	+7.082	+7.094	+7.103	+7.116	+7.116	+7.115	+7.125	+7.155
+8.781	+8.810	+8.838	+8.872	+8.891	+8.913	+8.930	+8.969	+8.990	+9.005	+9.022	+9.023	+9.021	+9.024	+9.046
-34.696	-34.697	-34.698	-34.700	-34.700	-34.701	-34.701	-34.705	-34.706	-34.708	-34.710	-34.710	-34.710	-34.711	-34.715
-32.992	-32.992	-32.993	-32.992	-32.993	-32.994	-32.994	-32.991	-32.990	-32.989	-32.988	-32.988	-32.988	-32.986	-32.977
+1.704	+1.705	+1.705	+1.708	+1.706	+1.708	+1.708	+1.714	+1.716	+1.718	+1.722	+1.722	+1.722	+1.725	+1.739
+38.648	+38.734	+38.793	+38.965	+38.973	+39.082	+39.125	+39.473	+39.641	+39.785	+39.996	+40.059	+40.098	+40.285	+40.785
+22.174	+22.748	+23.354	+23.982	+24.623	+25.248	+25.904	+26.566	+27.234	+27.879	+28.500	+29.115	+29.748	+30.410	+31.145
+14.649	+15.149	+15.698	+16.282	+16.909	+17.528	+18.196	+18.854	+19.538	+20.215	+20.864	+21.522	+22.209	+22.911	+23.663
+75.469	+76.633	+77.844	+79.227	+80.500	+81.859	+83.227	+84.891	+86.406	+87.875	+89.359	+90.695	+92.063	+93.602	+95.594
+8.574	+8.665	+8.758	+8.869	+8.960	+9.063	+9.159	+9.301	+9.418	+9.526	+9.645	+9.738	+9.833	+9.951	+10.124
+66.898	+67.969	+69.086	+70.359	+71.547	+72.797	+74.063	+75.594	+76.992	+78.344	+79.711	+80.961	+82.227	+83.656	+85.469

# Spring Creek Output Expansion

## Personal Income

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
+92.199	+93.016	+93.797	+94.734	+95.633	+96.328	+97.156	+98.023	+98.859	+99.875	+100.688
+71.086	+71.617	+72.125	+72.734	+73.332	+73.766	+74.285	+74.816	+75.328	+75.949	+76.422
+24.776	+24.883	+24.978	+25.087	+25.190	+25.245	+25.324	+25.396	+25.463	+25.559	+25.619
+15.713	+15.781	+15.840	+15.910	+15.975	+16.009	+16.059	+16.104	+16.146	+16.207	+16.245
+9.064	+9.103	+9.137	+9.178	+9.216	+9.236	+9.265	+9.292	+9.316	+9.353	+9.375
-3.667	-3.487	-3.301	-3.094	-2.878	-2.680	-2.453	-2.194	-1.921	-1.636	-1.365
+16.248	+16.340	+16.426	+16.529	+16.628	+16.693	+16.775	+16.854	+16.932	+17.030	+17.103
+7.185	+7.238	+7.290	+7.352	+7.412	+7.456	+7.509	+7.563	+7.616	+7.679	+7.727
+9.064	+9.103	+9.137	+9.178	+9.216	+9.236	+9.265	+9.292	+9.316	+9.353	+9.375
-34.719	-34.725	-34.731	-34.739	-34.746	-34.751	-34.757	-34.763	-34.770	-34.777	-34.783
-32.970	-32.960	-32.952	-32.941	-32.931	-32.922	-32.912	-32.901	-32.891	-32.879	-32.869
+1.749	+1.765	+1.780	+1.798	+1.815	+1.829	+1.845	+1.862	+1.879	+1.898	+1.914
+41.238	+41.949	+42.641	+43.461	+44.262	+44.887	+45.629	+46.402	+47.164	+48.070	+48.797
+31.906	+32.746	+33.666	+34.676	+35.773	+36.943	+38.219	+39.594	+41.068	+42.652	+44.322
+24.437	+25.256	+26.147	+27.117	+28.182	+29.324	+30.572	+31.922	+33.379	+34.941	+36.605
+97.578	+99.945	+102.453	+105.250	+108.219	+111.156	+114.414	+117.914	+121.602	+125.664	+129.727
+10.294	+10.511	+10.736	+10.993	+11.259	+11.511	+11.793	+12.095	+12.407	+12.758	+13.093
+87.281	+89.438	+91.719	+94.266	+96.961	+99.648	+102.625	+105.828	+109.203	+112.906	+116.633

# Spring Creek Output Expansion

## Output and Demand | Output | Private Non-Farm | Sector Level

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

Category	Units	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Forestry, Fishing, Related Activities, and (	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.003	+0.009	+0.010	+0.000
Mining	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+98.923	+197.532	+295.839	+295.362
Utilities	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+2.195	+4.728	+7.269	+7.249
Construction	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+2.240	+9.739	+20.125	+24.490
Manufacturing	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+1.067	+2.529	+4.000	+4.050
Wholesale Trade	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+1.012	+4.416	+8.128	+8.529
Retail Trade	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-0.924	+2.784	+6.963	+7.468
Transportation and Warehousing	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+22.121	+44.326	+66.557	+66.566
Information	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.131	+0.705	+1.335	+1.389
Finance and Insurance	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.709	+2.533	+4.383	+4.363
Real Estate and Rental and Leasing	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+1.529	+5.909	+10.604	+11.002
Professional and Technical Services	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+2.583	+6.125	+9.833	+10.126
Management of Companies and Enterprise	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.206	+0.426	+0.633	+0.618
Administrative and Waste Services	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+1.023	+2.905	+4.913	+5.062
Educational Services	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-0.006	+0.062	+0.146	+0.175
Health Care and Social Assistance	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-1.140	+2.746	+7.006	+7.178
Arts, Entertainment, and Recreation	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.000	+0.182	+0.380	+0.402
Accommodation and Food Services	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	-0.109	+1.051	+2.449	+2.869
Other Services, except Public Administrati	Millions of Fixed (2012) I	0.000	0.000	0.000	0.000	0.000	0.000	+0.012	+1.466	+2.950	+2.963

# Spring Creek Output Expansion

## Output and Demand | Output | Private Non-Farm | Sector Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
-0.010	-0.019	-0.028	-0.036	-0.042	-0.048	-0.052	-0.056	-0.059	-0.061	-0.063	-0.065	-0.066	-0.068	-0.069
+295.058	+294.879	+294.583	+294.441	+294.172	+294.059	+293.892	+293.786	+293.688	+293.731	+293.606	+293.543	+293.381	+293.502	+293.500
+7.219	+7.104	+6.987	+6.880	+6.780	+6.691	+6.610	+6.540	+6.477	+6.428	+6.380	+6.342	+6.308	+6.286	+6.262
+26.353	+26.711	+26.193	+25.251	+24.128	+22.987	+21.924	+20.967	+20.138	+19.354	+18.695	+18.190	+17.847	+17.686	+17.557
+4.034	+3.948	+3.847	+3.751	+3.664	+3.592	+3.535	+3.494	+3.459	+3.427	+3.396	+3.372	+3.354	+3.344	+3.327
+8.850	+9.036	+9.174	+9.295	+9.404	+9.507	+9.609	+9.708	+9.810	+9.921	+10.027	+10.145	+10.272	+10.422	+10.535
+7.771	+7.933	+8.013	+8.059	+8.086	+8.124	+8.172	+8.230	+8.307	+8.422	+8.557	+8.719	+8.907	+9.134	+9.295
+66.555	+66.527	+66.497	+66.471	+66.450	+66.434	+66.423	+66.414	+66.410	+66.408	+66.406	+66.407	+66.407	+66.410	+66.410
+1.400	+1.382	+1.356	+1.331	+1.311	+1.297	+1.289	+1.288	+1.295	+1.309	+1.326	+1.348	+1.374	+1.406	+1.431
+4.261	+4.122	+3.977	+3.848	+3.739	+3.652	+3.586	+3.541	+3.513	+3.505	+3.507	+3.523	+3.552	+3.597	+3.629
+11.031	+10.797	+10.446	+10.062	+9.678	+9.328	+9.009	+8.737	+8.511	+8.341	+8.205	+8.106	+8.044	+8.029	+7.981
+10.287	+10.319	+10.320	+10.326	+10.341	+10.377	+10.430	+10.501	+10.587	+10.691	+10.796	+10.911	+11.037	+11.178	+11.301
+0.606	+0.589	+0.576	+0.569	+0.567	+0.569	+0.575	+0.583	+0.593	+0.605	+0.617	+0.630	+0.642	+0.654	+0.665
+5.135	+5.148	+5.142	+5.138	+5.136	+5.144	+5.157	+5.178	+5.207	+5.249	+5.294	+5.346	+5.404	+5.471	+5.527
+0.196	+0.211	+0.223	+0.231	+0.239	+0.244	+0.250	+0.254	+0.258	+0.262	+0.266	+0.269	+0.273	+0.277	+0.280
+7.250	+7.288	+7.333	+7.430	+7.578	+7.765	+7.986	+8.242	+8.543	+8.903	+9.275	+9.690	+10.148	+10.656	+11.078
+0.412	+0.416	+0.416	+0.416	+0.416	+0.416	+0.417	+0.419	+0.423	+0.428	+0.434	+0.441	+0.450	+0.460	+0.466
+3.196	+3.453	+3.662	+3.838	+3.988	+4.117	+4.226	+4.319	+4.403	+4.485	+4.556	+4.621	+4.682	+4.745	+4.786
+2.917	+2.830	+2.733	+2.642	+2.562	+2.493	+2.437	+2.394	+2.363	+2.350	+2.344	+2.353	+2.376	+2.415	+2.436

# Spring Creek Output Expansion

## Output and Demand | Output | Private Non-Farm | Sector Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
-0.071	-0.072	-0.074	-0.075	-0.077	-0.079	-0.080	-0.082	-0.084	-0.086	-0.088	-0.090	-0.093	-0.095	-0.097
+293.473	+293.405	+293.273	+293.404	+293.187	+293.357	+293.087	+293.328	+293.098	+293.107	+293.250	+293.248	+293.151	+293.066	+293.122
+6.239	+6.217	+6.196	+6.181	+6.159	+6.149	+6.133	+6.131	+6.128	+6.140	+6.162	+6.184	+6.208	+6.238	+6.274
+17.442	+17.365	+17.292	+17.259	+17.225	+17.212	+17.196	+17.265	+17.330	+17.429	+17.548	+17.641	+17.706	+17.808	+17.995
+3.307	+3.283	+3.259	+3.232	+3.200	+3.169	+3.129	+3.094	+3.048	+3.009	+2.973	+2.941	+2.906	+2.859	+2.809
+10.634	+10.720	+10.793	+10.862	+10.905	+10.949	+10.969	+11.002	+10.992	+11.012	+11.037	+11.053	+11.059	+11.060	+11.067
+9.438	+9.562	+9.679	+9.801	+9.897	+10.003	+10.091	+10.207	+10.345	+10.531	+10.744	+10.951	+11.085	+11.231	+11.409
+66.409	+66.407	+66.402	+66.399	+66.393	+66.387	+66.378	+66.372	+66.362	+66.356	+66.352	+66.347	+66.341	+66.333	+66.325
+1.455	+1.476	+1.493	+1.510	+1.523	+1.534	+1.544	+1.559	+1.570	+1.582	+1.596	+1.607	+1.619	+1.633	+1.653
+3.657	+3.684	+3.709	+3.734	+3.754	+3.777	+3.795	+3.822	+3.846	+3.865	+3.886	+3.898	+3.905	+3.916	+3.933
+7.933	+7.871	+7.788	+7.699	+7.585	+7.473	+7.338	+7.238	+7.127	+7.033	+6.964	+6.894	+6.819	+6.769	+6.752
+11.421	+11.534	+11.638	+11.747	+11.837	+11.932	+12.012	+12.111	+12.194	+12.286	+12.381	+12.466	+12.542	+12.621	+12.705
+0.675	+0.684	+0.691	+0.699	+0.704	+0.710	+0.714	+0.718	+0.717	+0.717	+0.717	+0.715	+0.712	+0.709	+0.704
+5.577	+5.623	+5.661	+5.701	+5.726	+5.752	+5.769	+5.793	+5.810	+5.829	+5.849	+5.861	+5.870	+5.879	+5.894
+0.283	+0.285	+0.286	+0.288	+0.289	+0.289	+0.289	+0.289	+0.288	+0.286	+0.284	+0.280	+0.275	+0.269	+0.262
+11.468	+11.839	+12.176	+12.498	+12.797	+13.112	+13.421	+13.807	+14.187	+14.568	+14.947	+15.303	+15.656	+16.043	+16.492
+0.471	+0.475	+0.478	+0.479	+0.479	+0.478	+0.476	+0.475	+0.474	+0.475	+0.476	+0.477	+0.478	+0.481	+0.485
+4.815	+4.834	+4.841	+4.840	+4.823	+4.802	+4.769	+4.741	+4.710	+4.682	+4.655	+4.624	+4.587	+4.551	+4.523
+2.453	+2.468	+2.476	+2.486	+2.486	+2.489	+2.488	+2.495	+2.504	+2.523	+2.548	+2.573	+2.595	+2.626	+2.668



# Spring Creek Output Expansion

## Output and Demand | Output | Private Non-Farm | Sector Level

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.3.5 (Build 2599)\Workbooks\Spring Creek Output Expansion.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
-0.100	-0.103	-0.106	-0.109	-0.113	-0.117	-0.122	-0.126	-0.131	-0.136	-0.143
+292.986	+293.104	+292.869	+292.874	+293.072	+292.775	+292.690	+292.640	+292.678	+292.901	+292.778
+6.309	+6.344	+6.390	+6.448	+6.514	+6.574	+6.642	+6.716	+6.793	+6.879	+6.958
+18.193	+18.441	+18.658	+18.943	+19.293	+19.582	+19.926	+20.303	+20.715	+21.221	+21.695
+2.745	+2.670	+2.595	+2.530	+2.480	+2.429	+2.384	+2.337	+2.286	+2.231	+2.164
+11.058	+11.052	+11.024	+11.027	+11.065	+11.096	+11.154	+11.226	+11.305	+11.394	+11.469
+11.573	+11.761	+11.889	+12.084	+12.346	+12.624	+12.956	+13.326	+13.717	+14.141	+14.561
+66.314	+66.302	+66.289	+66.277	+66.266	+66.252	+66.239	+66.226	+66.211	+66.194	+66.177
+1.670	+1.692	+1.713	+1.740	+1.764	+1.784	+1.806	+1.825	+1.844	+1.862	+1.875
+3.944	+3.961	+3.979	+4.001	+4.020	+4.027	+4.040	+4.054	+4.071	+4.091	+4.101
+6.740	+6.760	+6.805	+6.883	+6.980	+7.067	+7.179	+7.313	+7.455	+7.616	+7.753
+12.777	+12.873	+12.969	+13.082	+13.204	+13.313	+13.434	+13.554	+13.678	+13.811	+13.924
+0.699	+0.692	+0.683	+0.675	+0.665	+0.654	+0.641	+0.628	+0.614	+0.599	+0.583
+5.905	+5.921	+5.949	+5.984	+6.024	+6.058	+6.101	+6.145	+6.193	+6.249	+6.298
+0.255	+0.248	+0.241	+0.234	+0.229	+0.226	+0.224	+0.223	+0.223	+0.224	+0.226
+16.934	+17.428	+17.926	+18.461	+18.992	+19.490	+19.998	+20.490	+20.967	+21.455	+21.914
+0.490	+0.496	+0.504	+0.513	+0.525	+0.537	+0.550	+0.566	+0.581	+0.597	+0.614
+4.493	+4.469	+4.445	+4.434	+4.435	+4.439	+4.454	+4.473	+4.494	+4.519	+4.541
+2.706	+2.753	+2.792	+2.845	+2.908	+2.969	+3.043	+3.126	+3.213	+3.307	+3.398