

THE ECONOMIC IMPACT OF TRAILHEAD COMMERCE PARK

Final Report

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Executive Summary

Trailhead Commerce Park is a rail-accessible industrial development project located in Lockwood, Montana, that is intended to serve manufacturing, transportation, warehousing, and other commercial business development. As it is conceived by its developers, its location adjacent to the BNSF/MRL rail line, bisected by the proposed Billings bypass roadway, and situated in the strategically well-positioned Billings market area, would make it an attractive candidate for business expansion. Its successful construction and development could be a major economic event for the Billings and southeastern Montana economies.

The Bureau of Business and Economic Research at the University of Montana (BBER), a sixty year-old research organization with extensive experience in research on the Montana economy, was retained by Beartooth Resource, Conservation, and Development Area, Inc. to carefully assess the nature of the economic changes development of Trailhead Commerce Park (TCP) could produce. This report presents the findings of that research.

The Economic Impact of Trailhead Commerce Park

Impacts Summary

Category	Units	Impact by Year		
		2020	2030	2040
Total Employment	Jobs	2,279	3,655	3,876
Personal Income	\$ Millions	122.4	255.7	321.0
Disposable Pers. Income	\$ Millions	105.4	222.8	281.4
Selected State Tax Revenues	\$ Millions	28.3	61.2	74.9
Output	\$ Millions	443	862	1,083
Population	People	1,236	4,352	5,325

Based on a conservative approach that (a) does not assume the park reaches full occupancy, (b) uses wages, vendor purchasing patterns, and local demand patterns which are consistent with existing southeastern Montana businesses, and (c) assumes that some tenants of TCP will relocate from existing industrial parcels in the region, we find that the park’s construction and operations will result in a significant gain for the Billings and state economies. By the year 2030, when the park reaches its maximum rate of utilization, the economy with TCP is larger by:

- 3,655 more permanent jobs across a wide spectrum of industries and occupations;
- \$255.7 million in recurring, annual household income, including \$281.4 million in after-tax income that adds significantly to local purchasing power;

- \$862 million in recurring, annual gross sales by Montana businesses and other organizations;
- A permanent increase in population of 4,352, including more than 1,200 additional school-aged children.

These increases come about as new businesses locate and operate in the park, employing workers and purchasing services and intermediate goods from the local economy. The employment and income increases due to TCP reported above include both the jobs and wages at the park itself as well as additional jobs and income from the rest of the economy. All of the impacts are statewide, but most of the gains occur in Yellowstone County.

How These Results Were Estimated

The estimates of employment, income, output, and population gains that would occur with the successful development of Trailhead Commerce Park are, in essence, a projection of the future. It is a projection that is entirely consistent with both the historical trajectory and the future potential of the state's largest economy. Specifically,

- Yellowstone County is the wholesale trade center of Montana. Roughly 35 percent of statewide wholesale trade earnings and 32 percent of employment are in Yellowstone County.
- Billings and Yellowstone County have grown faster than the state average in terms of income and population since 2000.
- Capital goods, logistics, wellhead services and other important components of the supply chain for energy development have been, and will continue to be, served by companies located in Yellowstone County, with excellent prospects for growth.

Thus the question that is addressed by this study – what if Trailhead Commerce Park were successfully developed – is a very relevant proposition for the Billings area economy.

Two basic steps were taken to develop the economic impacts presented here. The first is the development of a reasonable scenario for the build-out of the park itself. The actual development of the park may overshoot or undershoot the scenario, with consequent implications for its ultimate economic impact. But the scenario is a reasonable one to proceed with, based on its geographic location, physical, and transportation advantages as well as the experience of other parks.

The scenario calls for employers in four key industry groups: mining services, transportation and warehousing, manufacturing, and wholesale trade. There is also a small retail and accommodations development as part of the overall park. New tenants are added slowly beginning in year 2015, with the park reaching approximately 60 percent occupancy by the year

2024. It is also assumed that the Billings bypass and interchange with the park are developed around year 2020.

The second step in the analysis is to assess how park developments affect the overall economy. The BBER has made use of a well-respected economic impact model known as the REMI model for this purpose. This model allows us to construct how the economy would change with the new business development at TCP and fully takes into account the new construction, investment, and ultimately higher income flows that would result from the park’s successful operation. The REMI model has been used in hundreds of articles and reports and has been fully documented in peer-reviewed journals. A full bibliography of REMI studies can be found at www.remi.com.

Employment Impacts

As a result of the operations of TCP there are more jobs in the economy. These jobs include those at the park itself, as well as jobs that are supported by the spending of tenants and employees at the park. It is clear from this analysis that these impacts stretch across a wide spectrum of industries.

The Economic Impact of Trailhead Commerce Park			
Employment Impacts			
Industry	Impacts by Year		
	2020	2030	2040
Mining	139	219	216
Construction	291	360	342
Manufacturing	303	487	483
Wholesale Trade	300	507	534
Retail Trade	166	254	265
Transportation and Warehousing	356	570	562
Professional and Technical Services	82	150	192
Administrative and Waste Services	126	212	252
Health Care and Social Assistance	94	188	273
Arts, Entertainment, and Recreation	21	38	44
Accommodation and Food Services	80	188	211
Other Services, except Public Administration	74	100	109
Other Private	79	97	100
State and Local Government	169	287	292
TOTAL	2,279	3,655	3,876

For instance, by year 2030 the park’s successful development and operation results in the creation of 188 additional health care services jobs, 254 retail trade jobs, and 287 state and local government jobs. Many of the government jobs are in local public schools. These and other jobs are created due to demand created by higher population and the spending of businesses and workers at TCP.

Trailhead Commerce Park			
Personal Income Impacts (\$ millions)			
Category	Impacts by Year		
	2020	2030	2040
Total Earnings by Place of Work	130.7	246.2	293.5
Total Wage and Salary Disbursements	98.4	191.7	230.4
Supplements to Wages and Salaries	26.1	53.6	65.0
Employer contributions for employee pension and insurance funds	17.5	36.1	43.9
Employer contributions for government social insurance	8.5	17.4	21.1
Proprietors' income with inventory valuation and capital consumption adjustments	8.9	4.5	1.0
Less: Contributions for government social insurance	18.6	36.5	43.2
Employee and self-employed contributions for government social insurance	10.0	19.0	22.1
Employer contributions for government social insurance	8.5	17.4	21.1
Plus: Adjustment for residence*	-1.0	-1.3	-1.3
Gross In	1.2	2.3	2.7
Gross Out	2.1	3.5	4.0
Equals: Net earnings by place of residence	120.5	218.8	251.1
Plus: Rental, interest, and dividend income	6.8	28.4	45.6
Plus: Personal current transfer receipts	-5.0	8.6	24.2
Equals: Personal Income	122.4	255.7	321.0
Less: Personal current taxes	17.0	33.0	39.6
Equals: Disposable personal income	105.4	222.8	281.4
* 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 resident's income.			

Personal Income Impacts

The operations of the park result in a sizable increase in income received by Montana households. Because of the park, by year 2030, there will be more than a quarter billion dollars (all dollar amounts measured in terms of today's purchasing power) per year received by Montana households in income that would not exist otherwise. Much of this is due to higher wage and salary incomes received by workers whose jobs are at or are supported by Trailhead Commerce Park. But some income also results from the larger population and larger economy overall, which boosts income from all sources. The ultimate result is a larger economy with higher purchasing power, higher demand for services, and a higher tax base.

Conclusion

This assessment of the economic consequences for southeastern Montana and Billings of the successful development of Trailhead Commerce Park has clearly shown that development of TCP would be a significant economic event. The growth, creation, and location of business development in this rail-accessible, strategically located park would ultimately support by year 2030

- 3,655 permanent new jobs,
- \$255.7 in personal income receive by Montana households,:
- \$862 million in gross sales by Montana businesses, and
- a more than 4,300 increase in population, including more than 1,200 school-aged children.

These estimates are entirely consistent with historical growth and future opportunities that exist for the businesses and industries contemplated for the park.

1. Background and Overview

Trailhead Commerce Park (TCP) is a rail-accessible industrial development project located in Lockwood, Montana, that is intended to serve manufacturing, transportation, warehousing and other commercial and industrial business development. The vision of the park’s developers is that the site will be competitive due to its (i) rail access, on the BNSF/MRL main east/west line, (ii) interstate and highway access, especially with the anticipated development of the Billings bypass, connecting Interstate 94 with northern Montana and Canada, and (iii) the strategic position of Billings, with its proximity to the Bakken oil development and center of a four-state trade area.

Figure 1.1: Trailhead Commerce Park



The question of the feasibility of a new industrial park located in Billings on the scale of TCP has been addressed in a recent report prepared for Big Sky Economic Development by the respected consulting and engineering firm KLJ. On the basis of a transportation analysis, market analysis, community input, and other relevant data, KLJ concluded that such a park was feasible and desirable and recommended action steps to put plans for park development into motion.

The Bureau of Business and Economic Research at the University of Montana (BBER) has been retained by Beartooth Resource, Conservation, and Development Area, Inc. to carefully assess the nature of the economic changes development of Trailhead Commerce Park (TCP) could produce. This report presents the findings of that analysis.

Trailhead Commerce Park

Trailhead Commerce Park is a planned multi-use industrial park located east of Billings, Montana. It is adjacent to the BNSF/MRL rail line that runs east/west between Chicago and the west coast. It is also in close proximity to Interstates 90 and 94, and lies right along the path of the proposed Billings bypass, intended to connect to routes to northern Montana and Canada. The Park is planned as a multi-modal facility, supporting trans-loading, warehousing, manufacturing, and other light industrial use.

While actual development could vary, the park is laid out to consist of 14 larger parcels with access to a rail spur averaging 6.6 acres each and 47 medium-sized parcels with average size of 2.9 acres. Given the strategic position of the park along major rail and highway routes, the dearth of developable industrial sites in the region, and the position of Billings as a transportation and distribution center for a large geography, it is anticipated that the park will be competitive for a wide range of businesses in manufacturing, warehousing, wholesale trade, construction, and mining services as well as other logistics and material-moving activities.

The Research Approach

The fundamental question addressed by this study is: What are the consequences for the economy if Trailhead Commerce Park were successfully developed? Clearly, the park represents a growth opportunity for the Billings area. This study will attempt to identify more precisely the timing and magnitude of that growth, in terms of conventional economic measures: new jobs, income, production, sales, population, and tax revenues.

There are three essential components to estimating the ultimate impact of new investment. These are:

- the *direct impact* (e.g., spending) the investment and activity itself represents,
- the *indirect impacts*, which are the spending of other entities (e.g., the transportation improvements) which are carried out by others because of the original investments, and
- the *induced impacts* that occur as the spending represented by the direct and indirect impacts propagates through the economy.

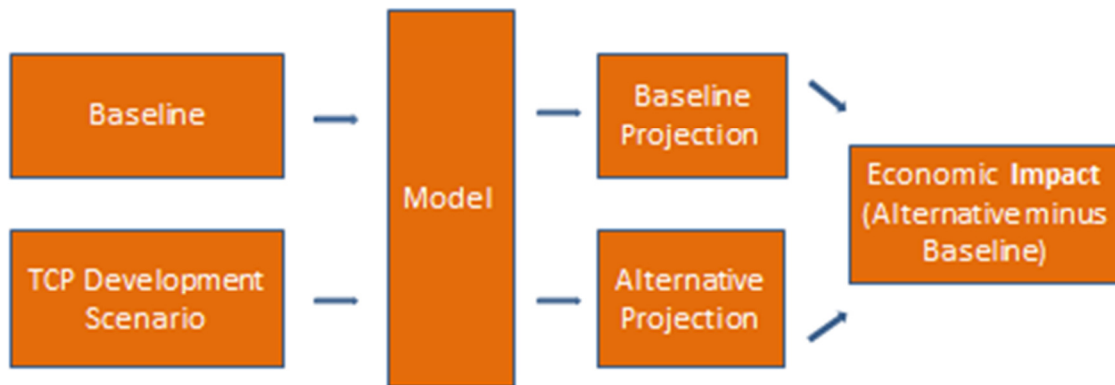
Likewise, there are two different stages of any project involving significant infrastructure development:

1. the *permitting and construction phase* -- a one-time boost in spending and investment -- that occurs in the beginning of a project -- to plan and build infrastructure, facilities, and, buildings, and
2. the *operations phase* - commencing when construction is complete and ongoing operations can begin. The operations phase continues for the life of the project.

Although the precise timetable and scale of the investments that could take place as part of the development of Trailhead Commerce Park are not yet known, reasonable scenarios can be constructed based on development of similar parks elsewhere. This study has carefully constructed a development scenario that uses the information from previous land use studies as well as park development. The induced impacts, which take place as wage, vendor, and other payments are captured by Montana businesses and households and are spent again in the state and local economies, are estimated using BBER’s five-region economic impact model.

To quantify the impacts of events that influence the Montana economy, the BBER uses a mathematical model of the regional economy leased from Regional Economic Models, Inc. (REMI). The fundamental premise of the REMI model is that regions compete for investment, jobs, and people. Thus, when new events occur which change the competitiveness of one particular region – such as construction and development of shovel-ready industrial land – investment, employment, and demographic flows in and out of the region can be affected, ultimately producing new levels of economic activities. The model thus produces impact estimates by examining the economy before and after these new events take place.

Figure 1.2 Research Approach



The total contribution of Trailhead Commerce Park to the economy is the difference between these two scenarios, as shown diagrammatically in Figure 1.2. The model is a means of estimating the economy’s new “resting point,” which includes the changes in investment, employment, and spending that are induced by the project.

This study does not present a forecast for Trailhead Commerce Park, or project its success in any way. This study addresses the impacts that would occur to jobs, income, population, output, and selected tax revenues if the park were successfully developed. Actual impacts will depend on how events at TCP actually unfold in the future. This study serves to inform decision makers and stakeholders in the project, as well as the general population, about how the park could impact the economic environment in which they live and work.

This “what if” question concerning the park’s development is a very reasonable one to ask, given the competitive strengths of the Billings economy and the likely path of future demand. We discuss this further in the next section.

2. The Billings Economy

Yellowstone County has the largest population of any county in Montana. As shown in Table 2.1, there were an estimated 154,162 persons living in Yellowstone County in 2013. The second most populous county was Missoula County (Missoula) with 111,807 persons. The third and fourth counties in terms of population were Gallatin (Bozeman) and Flathead (Kalispell) counties with 94,720 and 93,068 persons, respectively. Yellowstone County has consistently exceeded the statewide population growth and is second only to Gallatin County among Montana’s major communities. From 2000 to 2013, Yellowstone County’s population growth averaged about 1.4 percent per year as compared to approximately 0.9 percent per year for the state. This growth differential has persisted in the recent years. From 2000 to 2013, Yellowstone County increased as average of 1.3 percent per year and the corresponding figure for Montana was about 0.9 percent per year.

Table 2.1

Resident Population			
Montana and Selected Counties			
Area	Year		Avg. Annual Growth (%)
	2010	2013	
Montana	989,415	1,015,165	0.9
Flathead County	90,928	93,068	0.8
Gallatin County	89,513	94,720	1.9
Missoula County	109,299	111,807	0.8
Yellowstone County	147,972	154,162	1.4

Source: U.S. Bureau of the Census

Yellowstone County residents have above-average incomes. As shown in Table 2.2, per capita income was \$41,700 in 2012, about 8 percent above the statewide average of \$38,600. Between 2001 and 2012, per capita income corrected for inflation increased an average of 1.4 percent per year in Yellowstone County, slightly less than the 1.9 percent annual growth for Montana. The faster growth statewide was mostly due to the extremely rapid increases in the Bakken-impacted areas of rural eastern Montana.

Table 2.2**Per Capita Personal Income
(in constant 2012 dollars)**

Area	Year		Avg. Annual Growth (%)
	2001	2012	
Montana	\$31,400	\$38,600	1.9
Yellowstone County	\$35,700	\$41,700	1.4
Percent of Montana	113.6	108.0	

Source: U.S. Bureau of Economic Analysis.

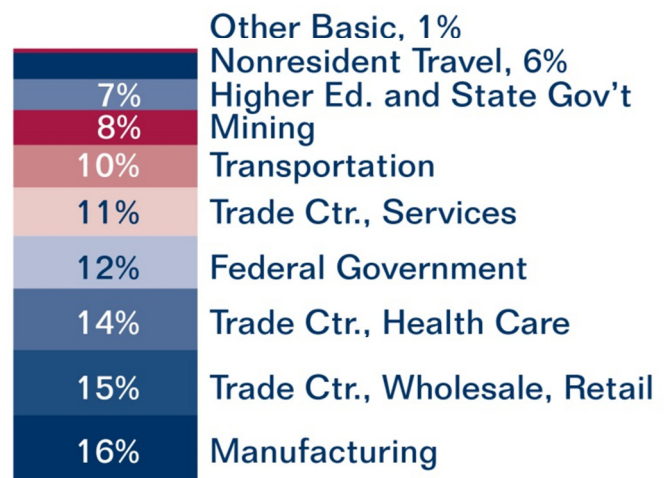
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Economic Base of Yellowstone County

The basic industries are those that sell their products outside the area in which they are located or are otherwise influenced by outside factors. The basic industries inject new funds into a regional economy that are spent and re-spent at local stores. Growth in the basic industries (or the lack of growth) is the primary determinant of overall trends in a regional economy.

Yellowstone County has a relatively diverse economic base. There are 9 major basic industries and no single industry accounts for more than 16 percent of the total. The components of Yellowstone County's economic base are shown in Figure 1.

Manufacturing accounts for about 16 percent of the economic base and is the largest component. Oil refining is the major sector within manufacturing. But, as will be discussed later, manufacturing also

**Figure 2.1
Earnings in Basic Industries,
Yellowstone County,
2012-2014, Percent of total**

includes more than 80 medium-sized firms producing everything from animal food to fabricated metals.

The second largest basic industry is the trade center components of wholesale and retail trade, accounting for about 15 percent of the economic base. This sector represents the persons coming to Billings to shop as well and the wholesale trade sales to businesses and other firms throughout eastern Montana, northern Wyoming, and the western Dakotas.

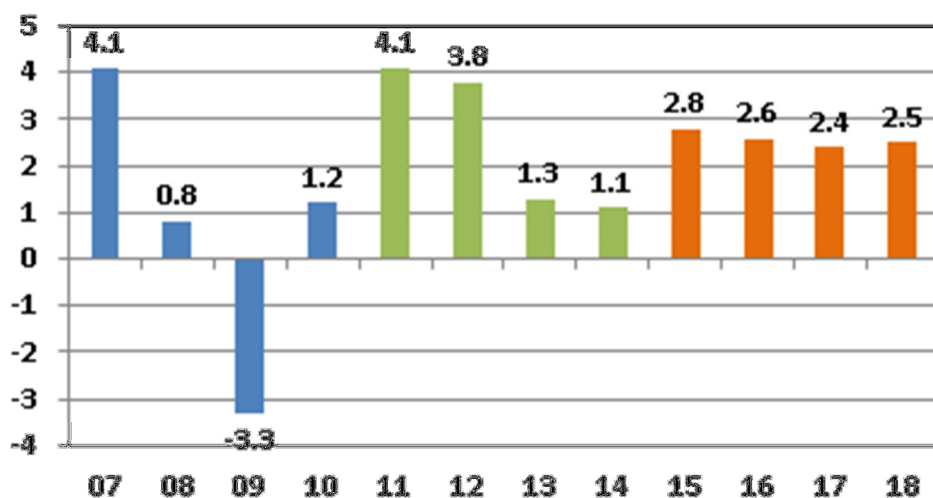
The trade sector component of health care represents about 14 percent of the economic base. This figure includes the persons from the rural trade center counties who come to Billings to see a doctor or dentist or receive other health care services. The other basic industries include; the federal government (12 percent), trade center services (11 percent), transportation (10 percent), state government including higher education (7 percent), nonresident travel (6 percent), mining (8 percent), and other (1 percent).

The fastest growing basic industries over the past decade have been the trade center sectors. They include portions of retail trade, wholesale trade, health care, and professional services. This means that the major contributor to the growth in the Billings area economy has been the way in which it serves the people and the businesses scattered over the rural areas of three adjacent states.

Recent Economic Trends

The Great Recession of 2007 to 2009 impacted most components of the Yellowstone County economy. But its worst effects were largely confined to a single year. As shown in Figure 2.2, the collapse in commodity prices, the sharp contracting in trade, transportation and the distribution of goods and the housing price bust led to a 3.3 percent contraction in the Yellowstone County economy in 2009. Growth returned in 2010 and accelerated sharply in 2011 and 2012. Recent declines in oil prices translate into a more modest projection for overall growth for the next four years.

Figure 2.2
Percent Change in Real Non-farm Earnings, Yellowstone County
Actual and Projected



Source: U.S. Bureau of Economic Analysis and BBER.

Industry Profiles for Potential TCP Tenants

Trailhead Commerce Park will house mostly medium- sized firms in the wholesale trade, light manufacturing, transportation/warehousing, and mining services industries. It is useful to examine the profile of these industries to understand how their size and activities fit the assets the park can provide.

Wholesale Trade

The U.S. Office of Management and Budget defines wholesale trade as:

“The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, manufacturing and certain information industries, such as publishing.....The wholesaling process is an intermediate step in the distribution of merchandise....Wholesalers sell merchandise to other businesses and normally operate from a warehouse or office. These warehouses and offices are characterized by having little or no display of merchandise.”

Yellowstone County is the wholesale trade center of Montana. Roughly 35 percent of statewide wholesale trade earnings and 32 percent of employment are in Yellowstone County. There are

about 353 wholesale trade firms in Yellowstone County. In second place is Missoula County, with approximately half as many wholesalers.

There were 188 mid-sized wholesale trade firms in Yellowstone County in 2012, according to the latest data available. These firms were distributed over 56 detailed NAICS industries. There were 86 establishments with 5 to 9 employees, 65 establishments with 10 to 19 workers and 37 firms with 20 to 49 workers. The largest single industry was industrial machinery and equipment with 23 establishments (NAICS 423830), but most of the industries had only a few firms.

The typical mid-size wholesale trade firm in Yellowstone County has about 16 employees. Wholesale trade wages and salaries per worker in Yellowstone County averaged about \$57,300 in 2013.

Manufacturing

The U.S. Office of Management and Budget defines manufacturing as:

“The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of components parts of manufactured products is considered manufacturing...The new products of a manufacturing establishment may be finished in the sense that it is ready for utilization or consumption, or it may be semi-finished to become an input for an establishment engaged in further manufacturing.”

Manufacturing is the largest basic industry in Yellowstone County and the industry totals are dominated by the three large oil refineries. These large refineries are not like to relocate to the Trailhead Commerce Park. Consequently, this section analyses only the non-refinery manufacturing sectors.

There were about 2,400 non-refinery manufacturing workers in Yellowstone County in 2013. Non-refinery wages and salaries per worker were approximately \$40,400. There were 82 manufacturing firms with 5 to 49 workers distributed over 49 detailed industries. The largest industry was machine shops (NAICS 332710), with six establishments. Most of the other industry categories contained only one or two establishments. The typical non-refinery mid-size manufacturing firm in Yellowstone County has about 16 employees.

Truck Transportation and Warehousing

The U.S. Office of Management and Budget defines truck transportation and warehousing as:

“Industries in the Truck Transportation subsector provide over-the-road transportation of cargo using motor vehicles, such as truck and tractor trailers. The subsector is subdivided into general freight trucking and specialized freight trucking.....Industries in the Warehousing subsector are primarily engaged in operating warehousing and storage facilities for general merchandise, refrigerated goods, and other products.”

Other transportation industries, such as air transport, rail transport, courier services, and taxis are not considered here.

Truck transportation employed about 1,450 workers in Yellowstone County in 2012. The average wages and salaries per worker were roughly \$44,300. There is no comparable published data for warehousing in Yellowstone County because these figures have been suppressed to avoid releasing information about a single firm.

There were about 46 firms in the truck transportation and warehousing industry in Yellowstone County during 2012. All but one of these firms was in truck transportation. The 46 mid-sized firms were distributed over seven detailed industries. The largest category was specialized freight (except Used Goods) trucking, local (NAICS 484220), with 11 establishments. The typical mid-size truck transportation warehousing establishment mid-sized manufacturing firm in Yellowstone County has about 18 employees.

Support Services for Mining

Support services for mining and oil and gas extraction is defined as:

This subsector comprises establishments primarily engaged in providing support services, on a contract or fee basis, required for the mining and quarrying of minerals and for the extraction of oil and gas. Establishments engaged in the exploration for minerals, other than oil or gas, are included. Exploration includes traditional prospecting methods, such as taking ore samples and making geological observations at prospective sites.

In 2012 there were 243 workers in Yellowstone County's 44 mining support services companies, earning average annual wages of \$195,853. While smaller than the other sectors examined above, the growth and high pay of mining support services, fueled largely by Bakken oil development, merits its inclusion in this list for special consideration.

The Implications of Energy and Oil Development

The Billings trade area includes portions of four states, and many of the businesses in Trailhead Commerce Park will be serving people and businesses throughout this region. The technologically driven tight-oil developments on the Montana–North Dakota border and in northeastern Wyoming have resulted in significant economic growth in both areas. This section takes a closer look at both regions with an eye toward identifying promising areas that would benefit Trailhead Commerce Park tenants.

The Bakken shale oil and natural gas are found throughout the area surrounding the Montana–North Dakota border. But most of the production and economic impacts are in five counties, four in North Dakota (Dunn, McKenzie, Mountrail, and Williams) and one in Montana (Richland).

Economic trends in the Bakken area showed modest growth in the early- and mid-2000s and a decline in the recession year 2009. But after the recession ended, there were explosive increases during 2010, 2011, and 2012. Annual growth rates for employment were in the 20 percent to 40 percent range, while inflation-adjusted wages and salaries were increasing at 40 percent to 65 percent per year. Annual growth rates moderated in 2013, with employment increasing 11.5 percent and inflation adjusted wages and salaries growing 12.5 percent.

Summary

The Billings economy is the largest and most diverse in Montana. Its strategic geographic position along important transportation arteries, as well as its proximity to energy development in the Bakken and Wyoming makes its prospects for future growth excellent, particularly for the industries that are potential tenants for TCP.

3. Policy Analysis with the REMI Model

Economic impacts occur because of events or activities that create new expenditures. Spending which 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 Trailhead Commerce Park 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 100 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 (1993).

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. Statewide impacts reported here represent the totals for the five regions. The definition of the regions is shown in Figure 3.1 below.

Figure 3.1
Economic Regions

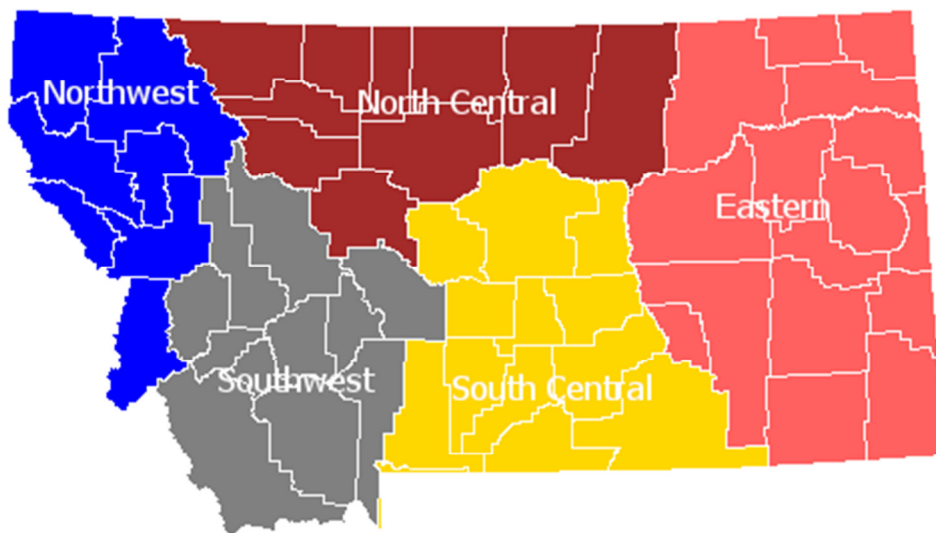
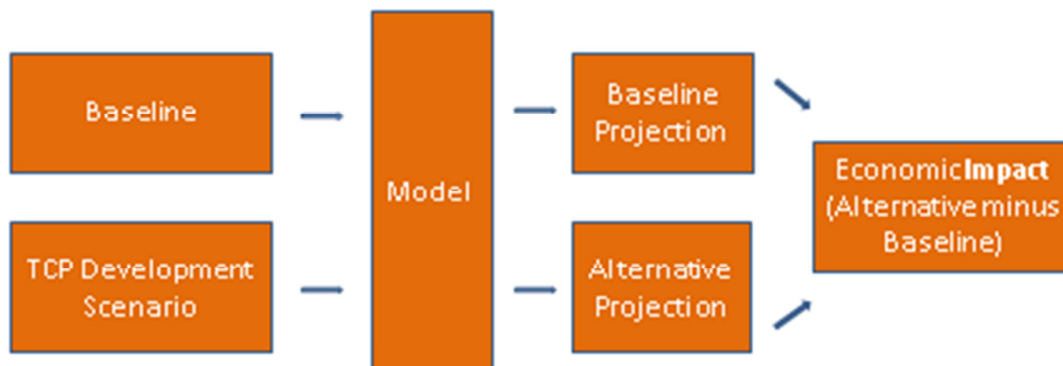


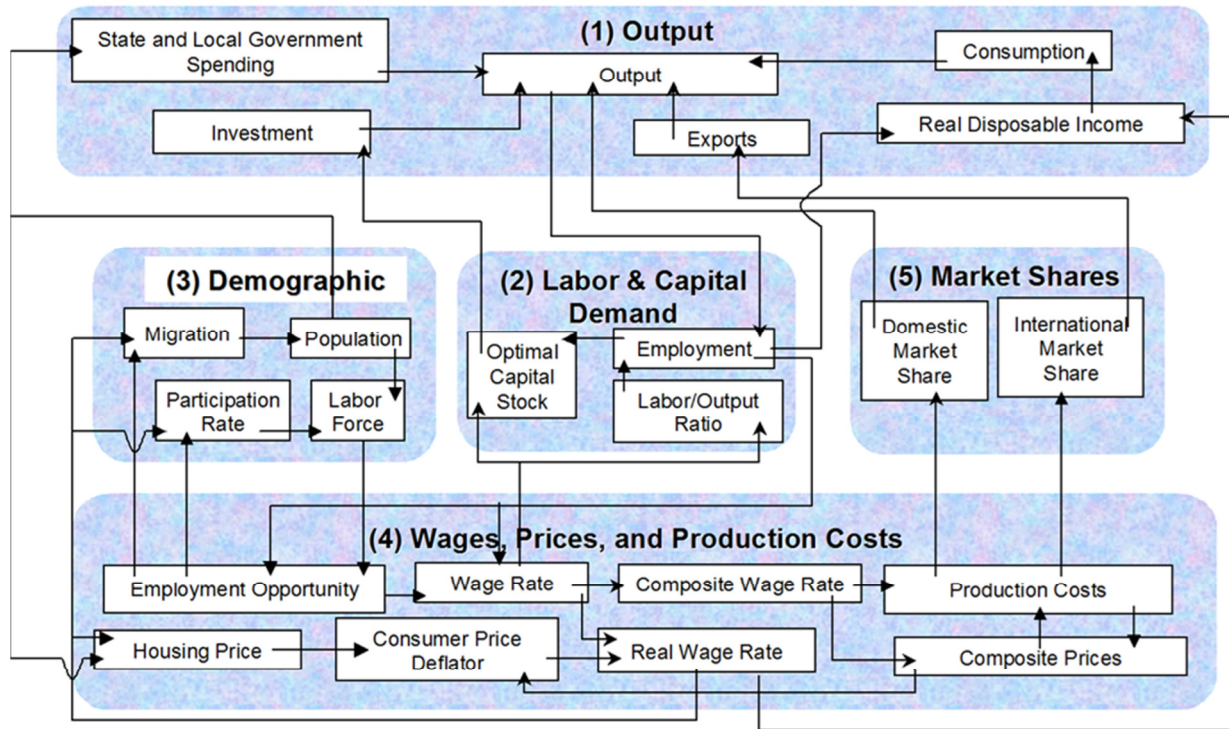
Figure 3.2
Policy Analysis with the REMI Model



The use of the model to derive the results of this study is illustrated graphically in Figure 3.2. First, a baseline projection for the economy is made using status quo assumptions that have no TCP development. The model is then used a second time, with identical inputs – except that in this alternative scenario, the park is developed and tenants operate businesses. Thus the construction and operations of TCP is a stimulus that ultimately brings the economy to a higher level of activity, reflecting not only the addition of the production, employment, and expenditures of the parks businesses, 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 Trailhead Commerce Park.

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 in the figure on the following page: 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 operations of TCP businesses 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 TCP.

Figure 3.3
REMI Model Linkages



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.

As powerful and flexible as this tool 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 economy that faithfully represents all of the income flows that result from TCP operations. We now turn to this task.

4. The Direct and Indirect Impacts of Trailhead Commerce Park

What would the impacts be on the economy if Trailhead Commerce Park were successfully developed? That is the central question addressed by this study. And in order to proceed we must precisely define what successful development entails. In the language of economic impact analysis, we must specify what is known as the direct impact of the park – the jobs, the income, the purchases, and the activity of the employers in the park itself. Additionally, since road and rail improvements that serve the park would not be made if the park were not developed, these smaller, indirect impacts will be assessed as well.

The Buildout Scenario

Land, by itself, does not produce economic output. But land is clearly an essential ingredient. And given the land requirements of industrial employers – everything from soil quality to rail and transportation access – the parcels in Trailhead Commerce Park should be attractive to both new and existing employers in the region.

These parcels consist of:

- 39 small parcels, approximately 2 acres each,
- 8 medium-sized parcels, approximately 5 acres each,
- 10 medium parcels with access to the rail spur, and
- 4 large parcels, approximately 10 acres each, with rail spur access.

This represents approximately 228 acres of parcels in the park.

What industries and/or companies will locate to TCP as tenants? At this stage of the project, it cannot be determined. We have identified four industries as being candidates for the park:

1. manufacturing,
2. wholesale trade,
3. transportation and warehousing, and
4. mining support services.

All of these industries have a significant footprint in Billings and have land use requirements that would make the park attractive.

With no further information available, we assume in this study that land will be taken up by each of these industries in the park in proportion to their employment in the Yellowstone

County economy. Those proportions are shown in Figure 4.1.

Figure 4.1
Land Use Shares in Trailhead Commerce Park



The next step in constructing the scenario was to estimate the size of the physical building/facility that each parcel could accommodate. This so-called coverage ratio has been estimated in other land use studies, and varies by industry. Estimates suggest that facility space covers between 35 percent and 40 percent of the parcel size.

Using published estimates, we estimated that approximately 3.4 million square feet of building space could be developed at TCP, distributed as:

- 1.4 million square feet of manufacturing space,
- 880,000 square feet of space transportation and warehousing,
- 880,000 square feet of space for wholesale trade, and
- 180,000 square feet for mining services.

The Employment Scenario

It is the employment, production, and incomes generated in those buildings that ultimately add to the economy. There is some survey-based work that attempts to measure the number of jobs supported per square foot of facility space. Such estimates can only produce a very rough categorization of actual employment gains that might result. They should be benchmarked against other available data, especially data that come from the region itself. We attempt to do this, as described below.

Land Use Approach

Previous work on industrial development has utilized estimates of space needs for different kinds of businesses, as well as the number of full-time jobs their facilities might support. One set of estimates, presented in Table 4.1, was attractive for this study since it was based on survey estimates of businesses in the Pacific Northwest.

Table 4.1

Land-Use Employment Estimates by Industry

Industry	Sq Foot/employee
Manufacturing	750
Warehousing/Distribution	1250
Wholesale Trade	1060
Transportation	620
Construction	580

Source: Puget Sound Regional Council, 1998.

A full survey of existing buildings to assess employment intensity for the Billings region was not feasible. BBER did spot checks of these employment-square footage ratios using a few local employers and concluded that they were not drastically different than what could be observed there.

These ratios were used to produce the following employment estimates by industry that could be supported by a fully subscribed Trailhead Commerce Park:

- 1,104 manufacturing jobs,
- 703 transportation and warehousing jobs,
- 1,264 wholesale trade jobs, and
- 685 mining services jobs.

This represented a total of nearly 3,788 total jobs at TCP tenants. With current levels of employment in these four industries of approximately 16,000 jobs, using these estimates the park's operation would result in an increase of nearly 25 percent of the economy-wide total.

An Approach Using Yellowstone County Data

As a check on these findings, BBER investigated an alternate approach to estimating industrial employment intensity using data from existing Billings industrial facilities. As will be seen, this approach involved making some crude assumptions, but we feel it does inform the analysis. We begin with the finding reported in the BSED feasibility study of Billings Industrial Park development conducted by KLJ which reported that there were approximately 5,500 acres of non-vacant industrial land in Yellowstone County. Assuming that 10 percent of this land is non-

usable (due to setbacks, easements and other incursions), and a coverage ratio of 40 percent, this results in a rough estimate of 86.3 million square feet of space in Yellowstone County's existing industrial facilities.

The total employment in in the four industrial categories considered for Trailhead Industrial Park is approximately 16,000 jobs. The implication for the average square feet per worker in the county is 5,372 employees per square feet of building space. This is considerably higher than the estimates from land use data.

Using this much higher estimate, a fully subscribed Trailhead Commerce Park would create only 649 jobs in all industries.

Synthesis of the Two Approaches

The objective of this study is to craft a reasonable estimate of how a successfully developed Trailhead Commerce Park would impact the overall economy. Thus, we should examine the strengths and weaknesses of the two approaches to estimating job creation to arrive at estimates that are defensible and conservative.

The land-use estimates suffer from their lack of connection with the actual industrial activity of south central Montana. The implication that a 4 percent increase in industrial space for the entire county would result in a 24 percent increase in industrial employment is problematic. On the other hand, there is ample reason to believe that the employment intensity of new, greenfield development of industrial space would be considerably higher than existing industrial space. Furthermore, there may be non-industrial use taking place of land classified as industrial.

Because of these shortcomings, BBER employed a blended approach to come up with the estimate used in this study. Our average estimate of 1,500 square feet per job is roughly midway between the employment/space ratios of the two approaches. The overall estimate of 2,200 direct jobs supported by TCP industrial tenants is consistent with the land-use estimates of employment intensity and a vacancy rate of the park of approximately 40 percent. This assumed level of employment for TCP tenants is roughly consistent with the Troutdale Reynolds Industrial Park (Portland, OR) cited in the KLJ feasibility study.

The timetable of the build out of TCP was assumed to be implemented smoothly over a 10-year period commencing in year 2015.

Indirect Impacts of Trailhead Commerce Park

The indirect impacts of Trailhead Commerce Park consist of the hotel and truck stop/restaurant that is planned for the premises and the construction of the exchange off of the Billings bypass that will serve the park.

5. The Economic Impact of Trailhead Commerce Park

The economic impact of Trailhead Commerce Park represents the differences in economic activity that result from two scenarios for the economy: a no-build, status quo scenario, and a scenario where TCP is successfully developed. The assumed development path of TCP is described in the previous section. BBER used the REMI model to analyze the difference in economic outcomes for the two scenarios and the findings of that analysis are presented here. The development of Trailhead Commerce Park essentially brings a number of manufacturing, transportation and warehousing, wholesale trade, and mining services firms to operate there. It is recognized in the analysis that not all of these firms (and their employment) will be net additions to the economy. Some may displace existing companies already operating in the Billings region. Indeed, some tenants of TCP may be existing companies who relocate to the park.

As we present the findings, there are other important facets of the analysis that are important to keep in mind:

1. All of the impacts reported below are total impacts, which include both activity at the park itself as well as impacts elsewhere in the economy that are induced through economic activity;
2. Impacts change substantially over time. The park's take-up rate with new tenants is assumed to phase in over the 2015-2025 period. Early year impacts reflect construction phase activity, whereas later years reflect demographic impacts brought about by migration.
3. All impacts reported are statewide, but substantially all (more than 99 percent) of the impacts occur in the Southeast Montana region, especially in Yellowstone County.

Impact Summary

Based on a conservative approach that (a) does not assume the park reaches full occupancy, (b) uses wages, vendor purchasing patterns and local demand patterns which are consistent with existing southeastern Montana businesses, and (c) assumes that some tenants of TCP will relocate from existing industrial parcels in the region, we find that the parks construction and operations will result in a significant gain for the Billings and state economies. By the year 2030, when the park reaches its maximum rate of utilization, the economy with TCP is larger by

- 3,655 more permanent jobs, across a wide spectrum of industries and occupations;

- \$255.7 million in recurring, annual household income, including \$281.4 million in after-tax income that adds significantly to local purchasing power;
- \$862 million in recurring, annual gross sales by Montana businesses and other organizations;
- A permanent increase in population of 4,352, including more than 1,200 additional school-aged children.

Table 5.1
Impacts Summary

Category	Units	Impact by Year		
		2020	2030	2040
Total Employment	Jobs	2,279	3,655	3,876
Personal Income	\$ Millions	122.4	255.7	321.0
Disposable Pers. Income	\$ Millions	105.4	222.8	281.4
Selected State Tax Revenues	\$ Millions	28.3	61.2	74.9
Output	\$ Millions	443	862	1,083
Population	People	1,236	4,352	5,325

These increases come about as new businesses locate and operate in the park, employing workers and purchasing services and intermediate goods from the local economy. The employment and income increases due to TCP reported above include the jobs and wages at the park itself as well as additional jobs and income from the rest of the economy. All of the impacts are statewide, but most of the gains occur in Yellowstone County.

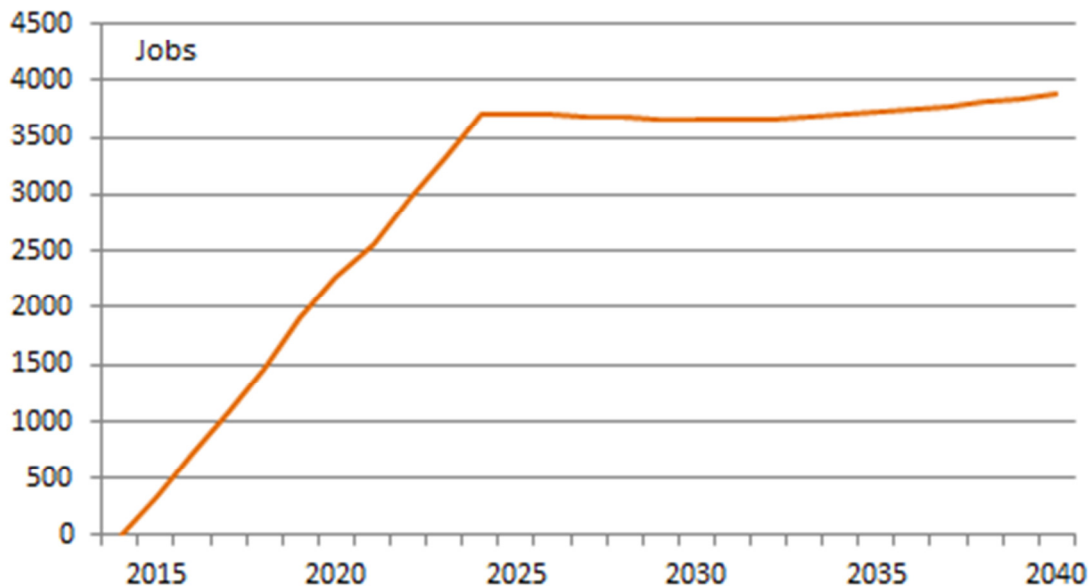
Employment Impacts

The employment impacts of Trailhead Commerce Park grow substantially over time, as shown in Figure 5.1. The growth in employment for the first 10- year period reflects both the phase-in that is assumed for growth in park tenants, as well as the construction impacts for the build out. The time path of employment impacts due to TCP changes after 2024, when the park reaches maximum occupancy, for a variety of reasons. The wind down of the construction phase associated with the last tenants to arrive moves the total down slightly after that year.

These changes are offset by the gains that occur due to slowly evolving demographic changes that are induced by the park’s development. As job opportunities are created in Yellowstone County, people move to the area, bringing their children (either born or yet-to-be-born) with

them. With passage of time, this population gain creates new demand for housing, schools, and locally produced goods and services.

Figure 5.1
Employment Impacts of Trailhead Commerce Park



As a result of the operations of TCP there are more jobs in the economy. These jobs include those at the park itself, as well as jobs that are supported by the spending of tenants and employees at the park. It is clear from this analysis that these impacts stretch across a wide spectrum of industries.

By the year 2030, when the park has reached the maximum occupancy projected in this study, its presence in the economy is responsible for 3,655 jobs across a wide spectrum of industries. Some of these industries, such as Wholesale Trade and Manufacturing, are present at the park itself. But many others, such as Health Care and Professional and Technical Services, are made larger because of increases in demand that is ultimately attributable to the presence of TCP in the economy.

Because of TCP, there would be 188 more Health Care Services jobs, 360 more construction jobs, and 287 more jobs in state and local government in year 2030. Government job increases come about due to increased population, particularly for school-aged children. The breadth of employment gains shown in Table 5.2 make it clear that many more businesses and workers have a stake in the development of the park than just the businesses and workers that locate there.

Table 5.2
Employment Impacts of Trailhead Commerce Park

Industry	Impacts by Year		
	2020	2030	2040
Mining	139	219	216
Construction	291	360	342
Manufacturing	303	487	483
Wholesale Trade	300	507	534
Retail Trade	166	254	265
Transportation and Warehousing	356	570	562
Professional and Technical Services	82	150	192
Administrative and Waste Services	126	212	252
Health Care and Social Assistance	94	188	273
Arts, Entertainment, and Recreation	21	38	44
Accommodation and Food Services	80	188	211
Other Services, except Public Administration	74	100	109
Other Private	79	97	100
State and Local Government	169	287	292
TOTAL	2,279	3,655	3,876

Personal Income and Compensation Impacts

An economy with a successfully developed Trailhead Commerce Park in operation is a larger economy. One of the most basic measures of economic activity is income received by Montana households, or personal income. The wages and salaries that flow from the jobs created by TCP boost this income significantly, of course. But in a larger and more populous economy, all forms of income are increased, as is shown in Table 5.3.

By year 2030, wage and salary disbursements to Montana resident households are \$191.7 million per year larger due to the presence of TCP. (All dollar values in this report are adjusted for inflation). Adding in employer-paid benefits as well as business proprietor income and this impact grows to \$246.2 million. But non-labor income increases due to TCP as well – rental, interest and dividend income and even transfers payments from government increase modestly as well.

Table 5.3
Personal Income Impacts of Trailhead Commerce Park (\$ millions)

Category	Impacts by Year		
	2020	2030	2040
Total Earnings by Place of Work	130.7	246.2	293.5
Total Wage and Salary Disbursements	98.4	191.7	230.4
Supplements to Wages and Salaries	26.1	53.6	65.0
Employer contributions for employee pension and insurance funds	17.5	36.1	43.9
Employer contributions for government social insurance	8.5	17.4	21.1
Proprietors' income with inventory valuation and capital consumption adjustments	8.9	4.5	1.0
Less: Contributions for government social insurance	18.6	36.5	43.2
Employee and self-employed contributions for government social insurance	10.0	19.0	22.1
Employer contributions for government social insurance	8.5	17.4	21.1
Plus: Adjustment for residence	-1.0	-1.3	-1.3
Gross In	1.2	2.3	2.7
Gross Out	2.1	3.5	4.0
Equals: Net earnings by place of residence	120.5	218.8	251.1
Plus: Rental, interest, and dividend income	6.8	28.4	45.6
Plus: Personal current transfer receipts	-5.0	8.6	24.2
Equals: Personal Income	122.4	255.7	321.0
Less: Personal current taxes	17.0	33.0	39.6
Equals: Disposable personal income	105.4	222.8	281.4

The presence of the park in the economy raises the after-tax income of Montana households by \$222.8 million per year in year 2030. With almost all of this increase occurring in Yellowstone County, the park's presence in the economy represents a sizable gain in the purchasing power of households that will be felt by area businesses.

Table 5.4
Compensation Impacts of Trailhead Commerce Park

Category	Units	Impacts by Year		
		2020	2030	2040
Wages and Salaries	\$ Millions	98.4	191.7	230.4
Compensation	\$ Millions	122.9	243.1	294.3
Earnings	\$ Millions	130.7	246.2	293.5
Earnings per Job, New Jobs	\$ Dollars	57,372	67,365	75,729

Output Impacts

Spending by households creates demand on local producers. Even for products that are imported into the region, such as trucks and automobiles, there is usually a local component. But business and government spending creates demand for products and services as well. Thus we examine the impact of Trailhead Commerce Park on business gross sales, or output, as well.

Table 5.5
Output Impacts of Trailhead Commerce Park (\$ millions)

Industry	Impacts by Year		
	2020	2030	2040
Forestry, Fishing, and Related Activities	0.0	0.0	0.0
Mining	54.5	115.1	150.5
Utilities	3.0	5.1	5.6
Construction	38.5	55.8	59.1
Manufacturing	108.7	212.6	265.3
Wholesale Trade	66.5	137.3	176.8
Retail Trade	14.6	28.7	37.5
Transportation and Warehousing	79.5	160.3	201.0
Information	1.5	2.5	3.3
Finance and Insurance	3.6	4.8	5.5
Real Estate and Rental and Leasing	12.8	19.4	21.4
Professional, Scientific, and Technical Services	10.7	21.8	30.5
Management of Companies and Enterprises	0.1	-0.2	-0.3
Administrative and Waste Management Services	8.8	17.5	23.7
Educational Services	0.4	0.9	1.1
Health Care and Social Assistance	11.4	23.2	34.1
Arts, Entertainment, and Recreation	1.0	1.9	2.4
Accommodation and Food Services	5.4	15.2	19.3
Other Services, except Public Administration	4.4	7.4	9.0
State and Local Government	17.8	33.3	37.3
TOTAL	443.4	862.3	1083.1

As shown in Table 5.5, the sales of industries such as Transportation and Warehousing as well as Manufacturing which are located in the park are significantly larger, of course. But not all sales increases even in these industries are from companies located at TCP. The vendor purchases by TCP businesses as well as all of the other commerce ultimately stimulated by the park's operations add to sales by area businesses as well.

[Please note that the definition of sales for retail and wholesale trade industries only includes the aggregate markup for those businesses. Sales for all other industries shown in Table 5.3 are gross receipts.]

In the year 2030, sales of \$862.3 million per year would be realized by businesses in the economy that are attributable to the operations of Trailhead Commerce Park. The increases are sizable for industries with a presence in the park, but are significant for accommodations, health care and other industries with no direct relationship to TCP businesses.

Population Impacts

The presence of Trailhead Commerce Park in the local economy increases employment opportunities – not just at the park, but at all businesses that realize increased sales and new hiring as a result. This increased opportunity causes workers and their families to migrate to the region. This gradual migration adds a different dynamic to the economic impacts.

Table 5.6
Population Impacts of Trailhead Commerce Park

Age Cohort	Population Impacts by Year		
	2020	2030	2040
Ages 0-14	318	1,192	1,245
Ages 15-24	263	538	794
Ages 25-64	691	2,492	2,919
Ages 65+	14	129	368
TOTAL	1,287	4,351	5,325

Economic migration brings new, working-age people into the economy. As they have children and age, their presence in the economy creates demand for housing, services of all kinds. By year 2030 we estimate there would be more than 4,300 people in the local economy than would have occurred in the status quo scenario. This is another important way in which economic activity at TCP propagates to the general economy.

State Revenue Impacts

A larger economy also represents a large tax base. The tax and non-tax revenues that flow to state government as a result of the direct and induced activities at Trailhead Commerce Park are substantial, as shown in Table 5.7. Increases in tax and non-tax revenue categories take place due to increases in both population and income, as well as spending in categories of spending subject to state-level taxation.

Table 5.7
State Revenue Impacts of Trailhead Commerce Park

Category	Impact by Year		
	2020	2030	2040
Intergovernmental Revenue	3.3	11.7	14.1
Selective Sales Tax	2.7	5.1	6.1
License Taxes	1.3	2.4	2.9
Individual Income Tax	5.3	10.1	12.2
Corporate Income Tax	0.9	1.7	2.0
Other Taxes	0.9	1.9	2.4
Current Charges	2.7	5.6	7.1
Miscellaneous General Revenue	1.9	4.0	5.1
Utility Revenue	0.0	0.0	0.0
Liquor Store Revenue	0.1	0.3	0.3
Insurance Trust Revenue	6.0	12.4	15.7
TOTAL	28.3	61.2	74.9

The impacts shown in the table are only a partial accounting for the tax implications of park development. They do not take into account local government taxes, nor do they estimate property tax impacts that occur at either state or local levels of government.

Impacts Summary

The economic impact of Trailhead Commerce Park is estimated by (i) constructing a detailed scenario of the economic activity of the park itself, (ii) using an economic model to build a projection of how park activity ultimately affects the overall economy, and (iii) comparing that projection to a status quo, no-build projection of the economy. The comparison carried out in this third step represents the economic impacts of the park.

Those impacts have been presented in this section, and they are substantial. Specifically, we find that by the year 2030, when the park is projected to have reached the maximum occupancy rate forecast in this study, its operations will ultimately support:

- 3,655 permanent, year-round jobs across a wide range of industries,
- \$255.7 million in annual income received by Montana households, which includes \$228.8 million in after-tax income,

- \$862 million in annual sales by Montana businesses, and
- an increase in population of 4,352, including more than a thousand school-aged children.

6. Summary and Conclusion

This has been a study of how the Montana economy would be impacted by the successful development of a rail accessible, multimodal industrial park east of Billings in the community of Lockwood. Using conservative assumptions concerning Trailhead Commerce Park’s (TCP) development and a state-of-the-art policy analysis model, our conclusion is that the park’s successful development would be a significant economic event.

While we do not make a specific prediction concerning the park’s success in attracting tenants, the scenario of successful park development presented in this study is consistent with the important role that Billings is expected to have in industrial and commercial development, especially in energy-related activities.

The purpose of this study is to gain a better understanding of how Trailhead Commerce Park’s successful development would impact the economy as a whole. While the precise time path and perhaps even the scale of that development is subject to change as future events unfold, we have constructed a scenario of that development that we feel is both reasonable and realistic. The results of this study can be used as a reference point to achieve a better understanding of how the park’s actual development would affect the entire economy.

Table 6.1
Summary of Economic Impacts of Trailhead Commerce Park

Category	Units	Impact by Year		
		2020	2030	2040
Total Employment	Jobs	2,279	3,655	3,876
Personal Income	\$ Millions	122.4	255.7	321.0
Disposable Pers. Income	\$ Millions	105.4	222.8	281.4
Selected State Tax Revenues	\$ Millions	28.3	61.2	74.9
Output	\$ Millions	443	862	1,083
Population	People	1,236	4,352	5,325

Specifically, the study assumes:

1. tenants in the park come from four major industries: manufacturing, wholesale trade, transportation and warehousing, and support services for mining;
2. the park ultimately builds up to approximately 60 percent occupancy over the next ten years;
3. companies which operate from TCP have employment, vendor purchase, and wage profiles that are consistent with existing businesses of the same type in Yellowstone County;
4. growth in Trailhead Commerce Park does displace some industrial growth elsewhere, either through competitive effects or by existing businesses choosing to relocate to the park.

The construction of the Billings bypass is also assumed to take place within the period in which the park comes into operation (but the economic impacts of that project are not claimed as part of the impacts summarized here).

If these events occur and the park is successfully developed, the local economy stands to gain significantly. These gains occur as new jobs and spending are supported at the park itself, and as those direct impacts moved the overall economy to a higher level of activity. As shown in the Summary Table 6.1, the impact of park development is an economy that is larger by

- 3,655 jobs by year 2030, including jobs at TCP tenants as well as job supported by TCP throughout the local economy, paying annual earnings (inflation-corrected) that average \$67,365 for each net new job created;
- \$255.7 million in annual income received by Montana households;
- \$862.3 million in annual sales by businesses in the local economy, including significant gains in industries such as health care, construction and local government that have no presence in the park itself;
- an increase of \$61.2 million per year in tax and non-tax revenues that flow to state government as a result of the larger economic base supported by Trailhead Commerce Park's successful development.

Most of the impacts of TCP continue to grow with passage of time as productivity and demographic dynamics continue to unfold.

The basic conclusion of this report is that the successful development of Trailhead Commerce Park in Yellowstone County would be a significant economic event that would affect workers and businesses across most of the economy.

References

Regional Economic Modeling: A Systematic Approach to Economic Forecasting and Policy Analysis; George I. Treyz, 1993. Norwell: Kluwer Academic Publishers.

“Design of a Multiregional Policy Analysis Model,” George I. Treyz, *Journal of Regional Science*, Volume 20, Issue 2, pp. 191-206, May 1980.

“The REMI Economic-Demographic Forecasting and Simulation Model,” George I. Treyz, Dan S. Rickman, and Gang Shao, *International Regional Science Review*, Volume 14, pp. 221-253, December 1991.

“Yellowstone County: Energy Impacts Continue,” Paul E. Polzin, *Outlook 2015*, Bureau of Business and Economic Research, page 20, January 2015.

“Yellowstone County Industrial Park Feasibility Analysis,” KLJ, prepared for Big Sky Economic Development, October 2014.

“Industrial Land Supply and Demand in the Central Puget Sound Region,” University of Washington Center for Community Development and Real Estate, prepared for Puget Sound Regional Council, February 1998.

“Land/Building Needs Analysis for Targeted Industries,” URS Community Planning and Urban Design Group, prepared for City of Fort Collins, October 2009.

Appendix: REMI Tables

Report1

Economic Summary

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Employment	Thousands (Jobs)	+0.348	+0.711	+1.081	+1.452	+1.908	+2.279	+2.562	+2.961	+3.330	+3.701
Total Employment as % of Nation	Percent	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.002	+0.002
Private Non-Farm Employment	Thousands (Jobs)	+0.321	+0.657	+1.000	+1.344	+1.768	+2.110	+2.369	+2.738	+3.078	+3.421
Private Non-Farm Employment as % of Nation	Percent	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.002	+0.002	+0.002
Gross Domestic Product	Millions of Fixed (2014) I	+32.063	+66.555	+102.914	+140.777	+185.766	+226.660	+263.266	+309.496	+354.965	+402.145
Gross Domestic Product (GDP) as % of Nation	Percent	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001	+0.002	+0.002
Output	Millions of Fixed (2014) I	+63.508	+131.594	+203.094	+277.297	+364.500	+443.445	+514.031	+601.273	+687.766	+777.328
Value Added	Millions of Fixed (2014) I	+33.141	+68.785	+106.359	+145.504	+192.020	+234.277	+272.109	+319.742	+366.727	+415.469
Personal Income	Millions of Fixed (2014) I	+15.305	+32.949	+52.379	+73.172	+98.984	+122.352	+142.418	+167.836	+193.496	+220.086
Personal Income as % of Nation	Percent	+0.000	+0.000	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
Disposable Personal Income	Millions of Fixed (2014) I	+13.082	+28.219	+44.938	+62.859	+85.129	+105.367	+122.816	+144.859	+167.152	+190.277
Disposable Personal Income as % of Nation	Percent	+0.000	+0.000	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
PCE-Price Index	2005=100 (Nation)	+0.001	+0.003	+0.006	+0.009	+0.013	+0.017	+0.020	+0.024	+0.028	+0.032
Real Disposable Personal Income	Millions of Fixed (2014) I	+12.789	+27.230	+43.027	+59.883	+80.938	+99.855	+116.035	+136.816	+157.738	+179.426
Real Disposable Personal Income as % of Nation	Percent	+0.000	+0.000	+0.000	+0.000	+0.001	+0.001	+0.001	+0.001	+0.001	+0.001
Population	Thousands	+0.074	+0.208	+0.393	+0.623	+0.913	+1.236	+1.571	+1.941	+2.335	+2.752
Population as % of Nation	Percent	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.000	+0.001	+0.001	+0.001

Report1

Economic Summary

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Economic Summary

2025	2030	2035	2040
+3.715	+3.655	+3.730	+3.876
+0.002	+0.002	+0.002	+0.002
+3.432	+3.368	+3.441	+3.584
+0.002	+0.002	+0.002	+0.002
+411.469	+448.336	+499.070	+565.242
+0.002	+0.002	+0.002	+0.002
+793.195	+862.313	+959.688	+1083.078
+425.039	+462.828	+515.391	+584.336
+229.227	+255.746	+283.430	+320.953
+0.001	+0.001	+0.001	+0.001
+198.500	+222.773	+247.773	+281.367
+0.001	+0.001	+0.001	+0.001
+0.035	+0.039	+0.041	+0.045
+186.551	+209.184	+233.750	+266.195
+0.001	+0.001	+0.001	+0.001
+3.119	+4.352	+4.973	+5.325
+0.001	+0.001	+0.001	+0.001

Report1

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	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forestry, Fishing, and Related Activities	Thousands (Jobs)	+0.000	+0.000	+0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001
Mining	Thousands (Jobs)	+0.024	+0.048	+0.071	+0.094	+0.117	+0.139	+0.161	+0.183	+0.205	+0.227
Utilities	Thousands (Jobs)	+0.001	+0.001	+0.002	+0.002	+0.003	+0.003	+0.004	+0.004	+0.005	+0.005
Construction	Thousands (Jobs)	+0.024	+0.059	+0.101	+0.146	+0.246	+0.291	+0.278	+0.322	+0.366	+0.409
Manufacturing	Thousands (Jobs)	+0.051	+0.102	+0.153	+0.203	+0.253	+0.303	+0.351	+0.400	+0.449	+0.498
Wholesale Trade	Thousands (Jobs)	+0.050	+0.100	+0.150	+0.199	+0.251	+0.300	+0.348	+0.399	+0.449	+0.500
Retail Trade	Thousands (Jobs)	+0.024	+0.051	+0.078	+0.105	+0.139	+0.166	+0.185	+0.216	+0.240	+0.264
Transportation and Warehousing	Thousands (Jobs)	+0.060	+0.120	+0.180	+0.239	+0.297	+0.356	+0.413	+0.471	+0.528	+0.585
Information	Thousands (Jobs)	+0.001	+0.001	+0.002	+0.002	+0.003	+0.003	+0.003	+0.004	+0.004	+0.004
Finance and Insurance	Thousands (Jobs)	+0.002	+0.004	+0.006	+0.007	+0.009	+0.009	+0.010	+0.011	+0.011	+0.012
Real Estate and Rental and Leasing	Thousands (Jobs)	+0.009	+0.018	+0.027	+0.037	+0.047	+0.056	+0.063	+0.071	+0.079	+0.087
Professional, Scientific, and Technical Services	Thousands (Jobs)	+0.012	+0.025	+0.038	+0.052	+0.068	+0.082	+0.094	+0.109	+0.124	+0.139
Management of Companies and Enterprises	Thousands (Jobs)	+0.000	+0.000	+0.001	+0.001	+0.001	+0.000	+0.000	+0.000	+0.000	0.000
Administrative and Waste Management Services	Thousands (Jobs)	+0.021	+0.041	+0.062	+0.083	+0.106	+0.126	+0.144	+0.166	+0.187	+0.209
Educational Services	Thousands (Jobs)	+0.001	+0.002	+0.003	+0.004	+0.005	+0.006	+0.008	+0.009	+0.010	+0.012
Health Care and Social Assistance	Thousands (Jobs)	+0.015	+0.030	+0.045	+0.059	+0.078	+0.094	+0.107	+0.125	+0.143	+0.162
Arts, Entertainment, and Recreation	Thousands (Jobs)	+0.003	+0.007	+0.010	+0.013	+0.018	+0.021	+0.024	+0.028	+0.032	+0.035
Accommodation and Food Services	Thousands (Jobs)	+0.010	+0.022	+0.035	+0.048	+0.065	+0.080	+0.093	+0.127	+0.143	+0.160
Other Services, except Public Administration	Thousands (Jobs)	+0.013	+0.026	+0.038	+0.050	+0.064	+0.074	+0.082	+0.093	+0.103	+0.113

Report1

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

2025	2030	2035	2040
-0.001	-0.001	-0.001	-0.001
+0.225	+0.219	+0.217	+0.216
+0.005	+0.004	+0.004	+0.003
+0.422	+0.360	+0.329	+0.342
+0.496	+0.487	+0.485	+0.483
+0.501	+0.507	+0.520	+0.534
+0.264	+0.254	+0.257	+0.265
+0.582	+0.570	+0.565	+0.562
+0.004	+0.003	+0.003	+0.003
+0.010	+0.005	+0.005	+0.006
+0.086	+0.072	+0.069	+0.071
+0.141	+0.150	+0.170	+0.192
0.000	-0.001	-0.001	-0.001
+0.208	+0.212	+0.230	+0.252
+0.013	+0.015	+0.017	+0.018
+0.165	+0.188	+0.228	+0.273
+0.036	+0.038	+0.041	+0.044
+0.167	+0.188	+0.202	+0.211
+0.110	+0.100	+0.103	+0.109

Report1

Employment | Occupation | Summary Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Summary Level

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Management, business, and financial occu	Thousands (Jobs)	+0.027	+0.054	+0.083	+0.111	+0.146	+0.174	+0.195	+0.224	+0.252	+0.280
Computer, mathematical, architecture, and	Thousands (Jobs)	+0.011	+0.022	+0.033	+0.045	+0.058	+0.069	+0.079	+0.091	+0.103	+0.114
Life, physical, and social science occupati	Thousands (Jobs)	+0.002	+0.004	+0.007	+0.009	+0.011	+0.013	+0.015	+0.018	+0.020	+0.022
Community and social service occupations	Thousands (Jobs)	+0.002	+0.003	+0.005	+0.007	+0.009	+0.011	+0.013	+0.015	+0.017	+0.019
Legal occupations	Thousands (Jobs)	+0.001	+0.003	+0.004	+0.006	+0.007	+0.009	+0.010	+0.011	+0.013	+0.014
Education, training, and library occupation	Thousands (Jobs)	+0.010	+0.020	+0.030	+0.040	+0.052	+0.063	+0.072	+0.084	+0.095	+0.106
Arts, design, entertainment, sports, and m	Thousands (Jobs)	+0.003	+0.006	+0.009	+0.012	+0.015	+0.018	+0.021	+0.024	+0.027	+0.030
Healthcare occupations	Thousands (Jobs)	+0.013	+0.027	+0.041	+0.054	+0.071	+0.086	+0.098	+0.114	+0.130	+0.146
Protective service occupations	Thousands (Jobs)	+0.006	+0.012	+0.018	+0.023	+0.030	+0.036	+0.041	+0.048	+0.054	+0.060
Food preparation and serving related occu	Thousands (Jobs)	+0.012	+0.025	+0.039	+0.054	+0.072	+0.088	+0.103	+0.126	+0.144	+0.162
Building and grounds cleaning and mainte	Thousands (Jobs)	+0.016	+0.032	+0.047	+0.062	+0.079	+0.093	+0.104	+0.125	+0.139	+0.153
Sales and related, office and administrativ	Thousands (Jobs)	+0.091	+0.185	+0.280	+0.374	+0.484	+0.576	+0.652	+0.753	+0.844	+0.935
Farming, fishing, and forestry occupations	Thousands (Jobs)	+0.001	+0.002	+0.002	+0.003	+0.004	+0.005	+0.006	+0.006	+0.007	+0.008
Construction and extraction occupations	Thousands (Jobs)	+0.032	+0.071	+0.114	+0.159	+0.239	+0.284	+0.291	+0.335	+0.379	+0.423
Installation, maintenance, and repair occu	Thousands (Jobs)	+0.019	+0.040	+0.061	+0.083	+0.110	+0.131	+0.146	+0.168	+0.189	+0.210
Production occupations	Thousands (Jobs)	+0.037	+0.074	+0.111	+0.147	+0.186	+0.222	+0.256	+0.293	+0.328	+0.364
Transportation and material moving occup	Thousands (Jobs)	+0.066	+0.133	+0.199	+0.264	+0.333	+0.398	+0.459	+0.525	+0.589	+0.653
Military	Thousands (Jobs)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Report1

Employment | Occupation | Summary Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Summary Level

2025	2030	2035	2040
+0.280	+0.272	+0.278	+0.291
+0.115	+0.116	+0.123	+0.133
+0.022	+0.023	+0.024	+0.025
+0.019	+0.021	+0.023	+0.025
+0.014	+0.014	+0.015	+0.016
+0.108	+0.111	+0.114	+0.117
+0.030	+0.031	+0.033	+0.035
+0.149	+0.163	+0.190	+0.221
+0.060	+0.061	+0.064	+0.067
+0.170	+0.192	+0.206	+0.216
+0.151	+0.143	+0.151	+0.163
+0.934	+0.913	+0.931	+0.965
+0.008	+0.008	+0.008	+0.008
+0.430	+0.388	+0.369	+0.379
+0.211	+0.202	+0.202	+0.208
+0.363	+0.357	+0.358	+0.361
+0.651	+0.640	+0.640	+0.646
0.000	0.000	0.000	0.000

Report1

Personal Income

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Earnings by Place of Work	Millions of Fixed (2014) I	+17.582	+37.174	+58.188	+80.191	+107.043	+130.740	+150.770	+176.488	+201.965	+228.223
Total Wage and Salary Disbursements	Millions of Fixed (2014) I	+13.033	+27.660	+43.475	+60.168	+80.273	+98.420	+114.271	+134.139	+153.875	+174.260
Supplements to Wages and Salaries	Millions of Fixed (2014) I	+3.370	+7.165	+11.299	+15.709	+21.176	+26.068	+30.277	+35.706	+41.144	+46.791
Employer contributions for employee pe	Millions of Fixed (2014) I	+2.261	+4.811	+7.592	+10.561	+14.241	+17.537	+20.375	+24.037	+27.704	+31.515
Employer contributions for government	Millions of Fixed (2014) I	+1.108	+2.353	+3.707	+5.149	+6.935	+8.531	+9.902	+11.670	+13.439	+15.276
Proprietors' income with inventory valua	Millions of Fixed (2014) I	+1.505	+3.044	+4.509	+5.826	+7.751	+8.854	+9.004	+9.852	+10.576	+11.225
Less: Contributions for Government Social	Millions of Fixed (2014) I	+2.437	+5.172	+8.138	+11.277	+15.126	+18.559	+21.493	+25.247	+28.983	+32.843
Employee and Self-Employed Contributor	Millions of Fixed (2014) I	+1.329	+2.820	+4.431	+6.128	+8.191	+10.028	+11.591	+13.577	+15.544	+17.567
Employer contributions for government s	Millions of Fixed (2014) I	+1.108	+2.353	+3.707	+5.149	+6.935	+8.531	+9.902	+11.670	+13.439	+15.276
Plus: Adjustment for Residence	Millions of Fixed (2014) I	-0.158	-0.321	-0.481	-0.635	-0.815	-0.958	-1.064	-1.212	-1.349	-1.488
Gross Inflow	Millions of Fixed (2014) I	+0.150	+0.319	+0.504	+0.701	+0.943	+1.159	+1.343	+1.577	+1.809	+2.050
Gross Outflow	Millions of Fixed (2014) I	+0.308	+0.640	+0.985	+1.336	+1.758	+2.117	+2.407	+2.788	+3.159	+3.538
Equals: Net Earnings by Place of Residenc	Millions of Fixed (2014) I	+16.275	+34.377	+53.746	+73.967	+98.914	+120.527	+138.166	+161.271	+184.076	+207.457
Plus: Rental, Personal Interest, and Perso	Millions of Fixed (2014) I	+0.367	+1.060	+2.057	+3.338	+4.952	+6.790	+8.748	+10.955	+13.366	+15.979
Plus: Personal Current Transfer Receipts	Millions of Fixed (2014) I	-1.340	-2.488	-3.424	-4.135	-4.881	-4.965	-4.499	-4.388	-3.948	-3.348
Equals: Personal Income	Millions of Fixed (2014) I	+15.305	+32.949	+52.379	+73.172	+98.984	+122.352	+142.418	+167.836	+193.496	+220.086
Less: Personal current taxes	Millions of Fixed (2014) I	+2.220	+4.727	+7.444	+10.313	+13.856	+16.984	+19.599	+22.976	+26.340	+29.807
Equals: Disposable personal income	Millions of Fixed (2014) I	+13.082	+28.219	+44.938	+62.859	+85.129	+105.367	+122.816	+144.859	+167.152	+190.277

Report1

Personal Income

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Personal Income

2025	2030	2035	2040
+233.758	+246.223	+264.773	+293.496
+179.182	+191.740	+207.338	+230.430
+48.446	+53.569	+58.666	+64.981
+32.637	+36.125	+39.592	+43.881
+15.808	+17.445	+19.074	+21.100
+10.219	+4.490	+1.961	+1.023
+33.842	+36.457	+39.276	+43.163
+18.034	+19.012	+20.202	+22.063
+15.808	+17.445	+19.074	+21.100
-1.444	-1.260	-1.261	-1.344
+2.119	+2.283	+2.438	+2.653
+3.563	+3.543	+3.698	+3.998
+211.957	+218.773	+230.617	+251.133
+18.388	+28.388	+36.676	+45.597
-1.117	+8.585	+16.141	+24.229
+229.227	+255.746	+283.430	+320.953
+30.729	+32.973	+35.660	+39.587
+198.500	+222.773	+247.773	+281.367

Report1

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

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forestry, Fishing, and Related Activities	Millions of Fixed (2014) I	+0.004	+0.008	+0.011	+0.013	+0.015	+0.016	+0.015	+0.015	+0.014	+0.013
Mining	Millions of Fixed (2014) I	+8.064	+16.557	+25.453	+34.743	+44.427	+54.479	+65.062	+76.062	+87.549	+99.559
Utilities	Millions of Fixed (2014) I	+0.458	+0.943	+1.443	+1.949	+2.519	+3.041	+3.513	+4.095	+4.629	+5.169
Construction	Millions of Fixed (2014) I	+2.934	+7.394	+12.823	+18.829	+32.151	+38.548	+37.702	+44.181	+50.781	+57.511
Manufacturing	Millions of Fixed (2014) I	+16.565	+33.818	+51.645	+70.037	+89.316	+108.691	+128.244	+148.965	+170.186	+192.131
Wholesale Trade	Millions of Fixed (2014) I	+10.045	+20.521	+31.389	+42.635	+54.585	+66.545	+78.707	+91.761	+105.235	+119.250
Retail Trade	Millions of Fixed (2014) I	+1.878	+4.016	+6.345	+8.799	+11.896	+14.551	+16.671	+19.936	+22.729	+25.613
Transportation and Warehousing	Millions of Fixed (2014) I	+12.128	+24.722	+37.766	+51.254	+65.193	+79.541	+94.408	+109.765	+125.648	+142.104
Information	Millions of Fixed (2014) I	+0.227	+0.468	+0.717	+0.966	+1.256	+1.527	+1.756	+2.031	+2.289	+2.553
Finance and Insurance	Millions of Fixed (2014) I	+0.633	+1.263	+1.870	+2.445	+3.106	+3.633	+4.065	+4.629	+5.160	+5.693
Real Estate and Rental and Leasing	Millions of Fixed (2014) I	+1.798	+3.826	+5.969	+8.139	+10.665	+12.839	+14.644	+16.882	+19.040	+21.228
Professional, Scientific, and Technical Ser	Millions of Fixed (2014) I	+1.477	+3.081	+4.769	+6.519	+8.668	+10.655	+12.366	+14.458	+16.557	+18.767
Management of Companies and Enterprise	Millions of Fixed (2014) I	+0.048	+0.088	+0.118	+0.137	+0.148	+0.146	+0.140	+0.135	+0.120	+0.103
Administrative and Waste Management Se	Millions of Fixed (2014) I	+1.319	+2.705	+4.137	+5.603	+7.262	+8.807	+10.245	+11.974	+13.678	+15.456
Educational Services	Millions of Fixed (2014) I	+0.041	+0.091	+0.148	+0.211	+0.289	+0.365	+0.435	+0.518	+0.604	+0.693
Health Care and Social Assistance	Millions of Fixed (2014) I	+1.746	+3.548	+5.371	+7.195	+9.489	+11.449	+13.027	+15.191	+17.363	+19.648
Arts, Entertainment, and Recreation	Millions of Fixed (2014) I	+0.138	+0.284	+0.437	+0.593	+0.784	+0.955	+1.098	+1.287	+1.470	+1.660
Accommodation and Food Services	Millions of Fixed (2014) I	+0.673	+1.448	+2.304	+3.225	+4.355	+5.414	+6.374	+9.632	+10.885	+12.206
Other Services, except Public Administrati	Millions of Fixed (2014) I	+0.670	+1.372	+2.086	+2.800	+3.687	+4.413	+4.968	+5.744	+6.491	+7.255

Report1

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

2025	2030	2035	2040
+0.007	-0.014	-0.021	-0.030
+101.718	+115.077	+131.500	+150.522
+5.179	+5.134	+5.305	+5.571
+60.120	+55.759	+54.046	+59.076
+194.986	+212.568	+236.418	+265.285
+121.947	+137.325	+155.810	+176.753
+26.271	+28.703	+32.606	+37.469
+144.653	+160.265	+178.865	+201.002
+2.543	+2.533	+2.844	+3.283
+5.497	+4.759	+4.935	+5.512
+21.256	+19.393	+19.585	+21.380
+19.234	+21.775	+25.804	+30.536
+0.021	-0.248	-0.286	-0.252
+15.725	+17.460	+20.274	+23.743
+0.742	+0.899	+1.001	+1.080
+20.123	+23.161	+28.259	+34.096
+1.703	+1.879	+2.136	+2.409
+12.793	+15.150	+17.306	+19.310
+7.293	+7.443	+8.147	+9.038

Report1

Compensation and Earnings | Private Non-Farm | Earnings by Place of Work | Sector Level

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Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

Category	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forestry, Fishing, and Related Activities	Millions of Fixed (2014) I	+0.008	+0.020	+0.032	+0.044	+0.056	+0.066	+0.072	+0.078	+0.083	+0.086
Mining	Millions of Fixed (2014) I	+1.876	+3.905	+6.071	+8.362	+10.777	+13.288	+15.915	+18.662	+21.529	+24.521
Utilities	Millions of Fixed (2014) I	+0.097	+0.206	+0.319	+0.433	+0.558	+0.670	+0.767	+0.882	+0.985	+1.086
Construction	Millions of Fixed (2014) I	+1.216	+3.070	+5.321	+7.798	+13.039	+15.626	+15.435	+18.008	+20.611	+23.241
Manufacturing	Millions of Fixed (2014) I	+2.191	+4.519	+6.964	+9.510	+12.203	+15.016	+17.833	+20.785	+23.854	+27.032
Wholesale Trade	Millions of Fixed (2014) I	+3.179	+6.534	+10.048	+13.712	+17.629	+21.565	+25.546	+29.837	+34.270	+38.879
Retail Trade	Millions of Fixed (2014) I	+0.762	+1.667	+2.672	+3.738	+5.056	+6.201	+7.119	+8.465	+9.631	+10.823
Transportation and Warehousing	Millions of Fixed (2014) I	+3.282	+6.691	+10.223	+13.877	+17.659	+21.549	+25.550	+29.685	+33.952	+38.353
Information	Millions of Fixed (2014) I	+0.050	+0.112	+0.181	+0.252	+0.333	+0.410	+0.479	+0.555	+0.628	+0.702
Finance and Insurance	Millions of Fixed (2014) I	+0.167	+0.362	+0.569	+0.776	+1.007	+1.205	+1.364	+1.551	+1.726	+1.897
Real Estate and Rental and Leasing	Millions of Fixed (2014) I	+0.128	+0.276	+0.435	+0.599	+0.790	+0.958	+1.104	+1.280	+1.453	+1.631
Professional, Scientific, and Technical Ser	Millions of Fixed (2014) I	+0.713	+1.524	+2.399	+3.314	+4.420	+5.448	+6.326	+7.381	+8.435	+9.535
Management of Companies and Enterprise	Millions of Fixed (2014) I	+0.033	+0.073	+0.114	+0.156	+0.199	+0.238	+0.272	+0.310	+0.346	+0.381
Administrative and Waste Management Se	Millions of Fixed (2014) I	+0.580	+1.207	+1.864	+2.539	+3.302	+4.013	+4.666	+5.442	+6.207	+6.998
Educational Services	Millions of Fixed (2014) I	+0.023	+0.052	+0.086	+0.121	+0.163	+0.215	+0.254	+0.300	+0.346	+0.393
Health Care and Social Assistance	Millions of Fixed (2014) I	+0.995	+2.092	+3.241	+4.408	+5.833	+7.073	+8.070	+9.368	+10.653	+11.978
Arts, Entertainment, and Recreation	Millions of Fixed (2014) I	+0.062	+0.133	+0.211	+0.292	+0.389	+0.477	+0.552	+0.647	+0.738	+0.832
Accommodation and Food Services	Millions of Fixed (2014) I	+0.229	+0.510	+0.830	+1.177	+1.594	+1.988	+2.342	+3.263	+3.704	+4.163
Other Services, except Public Administrati	Millions of Fixed (2014) I	+0.392	+0.816	+1.253	+1.690	+2.220	+2.658	+2.993	+3.444	+3.871	+4.301

Report1

Compensation and Earnings | Private Non-Farm | Earnings by Place of Work | Sector Level

C:\Users\Pat.Barkey\Documents\REMI\PI+ Montana Regions v1.5.2 (Build 3307)\Workbooks\Trailhead Commerce Park.rwb

Regional Simulation 1 compared to Standard Regional Control — Difference

Region = All Regions

Sector Level

2025	2030	2035	2040
+0.080	+0.018	-0.019	-0.034
+25.168	+28.108	+31.625	+36.016
+1.080	+0.947	+0.885	+0.885
+24.165	+21.252	+19.553	+20.819
+27.601	+29.868	+32.327	+35.434
+39.788	+43.856	+48.578	+54.286
+11.085	+11.406	+12.303	+13.827
+38.990	+42.081	+45.529	+49.879
+0.717	+0.691	+0.720	+0.812
+1.864	+1.420	+1.235	+1.297
+1.653	+1.574	+1.624	+1.812
+9.764	+10.369	+11.650	+13.494
+0.373	+0.293	+0.298	+0.368
+7.112	+7.522	+8.350	+9.538
+0.417	+0.460	+0.476	+0.496
+12.242	+12.856	+14.479	+16.848
+0.859	+0.899	+0.965	+1.062
+4.367	+4.911	+5.363	+5.873
+4.302	+4.035	+4.122	+4.453