

SOCIOECONOMIC ASSESSMENT OF THE BOSTON EXPANSION WHARF RESOURCES (U.S.A.), INC.

Prepared in Connection with Proposed Mining Permit
for Extending the Life of the Mine.

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SECTION I: INTRODUCTION

I.I PURPOSE OF STUDY

A socioeconomic analysis is a requirement of the state mining permit statute, SDCL 45-6B-33.1, and is also required under Chapter 20 of the Lawrence County Zoning Ordinance. Socioeconomic assessments are among the documents that are used in deliberating such applications.

The regulations specify subject matter to be addressed in socioeconomic studies and also provide discretionary authority to tailor the contents of the assessment to concerns associated with a specific project. Topics which are generically required include demographic factors such as population impacts, economic issues like employment and income and expenditures, and a myriad of social considerations related to education, public safety, and utility services as well as quality-of-life issues including health, parks and recreation. The study of these matters differs dramatically in cases where a given permit is associated with an entirely new operation in contrast with one that merely extends the life of a project. The pending permit is small in scope compared to the entire company mining operation which has been in existence at this location since the late 1980s. Approximately 50 acres or about 3 percent will be added to the total 1,230 disturbed acreage of the entire Wharf mining operation.

Wharf mining is now affiliated with parent company, Coeur Mining, Inc. However, for the sake of simplicity and familiarization of the Wharf mine in South Dakota, it will here after simply be referred to as the Wharf mine.

I.II EXTENSION OF THE LIFE OF THE MINE

In the case of Wharf, the proposed mining permit now in question simply extends the life of the existing mining operation. Total levels of employment, spending for supplies and equipment, capital investment, and the utilization of subcontractor services are not projected to materially change from levels experienced over the past 15 or 20 years. Accordingly, many of the inferences arrived at in this document will involve an extrapolation of economic contributions and social factors which have demonstrated to have occurred in recent years. The study also examines issues regarding adjacent land use for residential and recreational purposes.

The pending permit application will involve the development of new ore reserves on property owned by the company and will consequently extend the life of the mine by approximately one-and-one-half to three years. The approval of the proposed permit would extend the life of the mine to about 2028 to 2030.

I.III BUSINESS HISTORY

Wharf Resources mining properties consist of predominately patented mining claims in and around the Bald Mountain Mining District in Lawrence County, South Dakota. This district is located in the northern portion of the Black Hills approximately four miles west of the historic town of Lead. A portion of these claims comprise the former Golden Reward Mining operation approximately two miles south and east of the original Wharf mining area.

Wharf Resources first became involved in mining within Lawrence County in 1974, more than 45 years ago. Exploration and testing of ore deposits began after that date in the area including and surrounding the present mining operation. Several years of exploration and preparation was followed by construction of mine and milling facilities beginning in 1982 after the necessary county and state permits were obtained. Gold recovery began in the summer of 1983 by employing a heap-leach technique. At the time this procedure was relatively new to South Dakota and much of this technology was refined and enhanced in its application by Wharf at its South Dakota mine.

Through the last several decades, improvements in heap-leach technology and the expansion of production capacities have allowed Wharf to experience substantial increases in gold recovery efficiency. Production levels have varied from a high of more than 120,000 ounces to about 60,000 ounces during these years, depending on variations in ore grade and the phases of mining operations experienced from year to year. Lately, production of gold has been in the neighborhood of 90,000 ounces annually.

As the Wharf mining operation has grown and developed, corresponding expansion of its economic benefits to the area took place. Although other gold mining operations including the large underground mining operation owned by Homestake Mining Company have ceased mining activity over the last two decades, Wharf has maintained a relatively constant pattern of business activity in terms of employment and gold production. Business spending, employment and household incomes have all been positively affected in local economies. State and local governments have also experienced enhanced fiscal strength through additional tax receipts generated by Wharf. More detail of these impacts will be explored later in this document.

I.IV PERMITTING HISTORY

Gold mining activity is comprehensively regulated and monitored at both the county and state levels in South Dakota. The basis for this activity is related to environmental, land use and socioeconomic concerns. Lawrence County has adopted a zoning ordinance which identifies applicant requirements associated with acquiring a Conditional Use Permit (CUP) for the purpose of engaging in large scale mining. The state of South Dakota, through the Department of

Agriculture and Natural Resources, applies departmental rules and statutes in connection with acquiring the necessary permits to engage in mining activity. These rules are then enforced through on-site inspections and regular interaction with mining companies. Gold mining is also regulated by federal agencies such as the Environmental Protection Agency and the Mine Safety and Health Administration.

Wharf Resources has applied for and received numerous state permits and conditional use permits in connection with its existing mine operation. Chronologically, these permits first involved what is known as the Annie Creek deposits, then the Foley Ridge area, the Annie Arm extension and next the Clinton extension. Under current consideration is the Boston extension.

Several amendments to both county CUPs and state permits have been applied for and received. In addition, numerous technical revision and permit amendments pursuant to mining regulations have been applied for and approved by the appropriate authorities.

Table 1 on the following page provides an abbreviated chronological outline of the permitting associated with the Wharf mine.

Table 1. Chronology Of State and County Mining Permits Wharf Mining Operation (Page 1 of 2)

Date	County Conditional Use Permit	State Permit Number	Comments
12/07/82		Annie Creek #356	Mining and milling of gold ore by open pit methods; 400,000 tons per year; \$732,000 cash reclamation bond.
12/08/82	CUP #63 (Annie Creek)		Mining and milling operations subject to conditions.
02/09/83	CUP #65 (Annie Creek)		Mining and milling operations subject to conditions.
02/09/83		Amendment to #356	Inclusion of additional mining claims.
07/20/83		Amendment to #356	Inclusion of additional mining claims.
08/10/83	CUP #70		Mining and Milling.
09/20/84		Amendment to #356	Increase ore/waste production to 800,000 per year, allow developmental drilling added acreage for or stockpiles.
12/20/84		Amendment to #356	Extend duration of Leach season from 180 to 365 days per year.
12/11/85/	CUP #99A (Foley Ridge)		Mining and related Activities, subject to conditions.
02/12/86	CUP #100B (Foley Ridge)		Mining and related Activities, subject to conditions.
03/12/86	CUP #102 (Amend - Annie Creek)		Amending Cup #63 to correct original application
03/21/86		Foley Ridge #434	Mining permit for 800,000 tons per year each waste and ore.
03/31/86		Annie Arm #435	Mining permit for 800,000 tons per year each waste and ore.
05/21/87		Amendment to #434	Increased annual ore production to 1.5 million tons per year.
09/14/87	CUP #122 (Annie Arm Ext.)		Amending CUPs #63 and #102 of Annie Arm Extension
09/88	CUP #132		All CUPs combined for administrative purposes.
11/17/88		Amendment to #356, 434,435	Mine Expansion Amendment Annie Arm Extension.
10/14/91		Amendment	Increase ore production to 3.5 million tons.
03/04/96		Amendment to #356, 434 and 435.	DOT Project (Altering State Highway 473).

Table 1. Chronology Of State and County Mining Permits Wharf Mining Operation (Page 2 of 2)

Date	County Conditional Use Permit	State Permit Number	Comments
04/07/98	CUP #224		Mining and related activities Clinton Extension for additional 8 years mine life.
06/18/98		Clinton Exp. #464	Clinton Expansion Area
12/06/98		Amendment to #356	Clinton Extension adding 616 acres under permit with two pits.
09/17/07		Amenmdent to #464	American Eagle Expansion
04/6/10		Amendment to #464	Mine Expansion Amendment to American Eagle (added 18 acres to permit)
06/14/11	CUP #398		Green Mountain and Golden Reward expansion (added 600 acres, with 250 acres new disturbance)
01/29/12		Exp. Permit #476	Green Mountain and Golden Reward expansion (added 600 acres, with 250 acres new disturbance)

* Minor County and State permits involving administrative streamlining, technical changes and water discharge permits, etc. are not listed.

I.V COMMUNITY AND INDUSTRY INVOLVEMENT

During the 30-plus years of gold mining by Wharf in Lawrence County, the company has demonstrated an awareness of social responsibility for their employees and the communities in the Black Hills region. The company has been recognized for their contributions with the business community of South Dakota and the nation. These accomplishments have come in the form of awards, donations, and general community involvement.

Many company employees are involved in civic and volunteer organizations by donating their time and resources to provide numerous community services. These workers help to form the fabric that strengthens their communities. Wharf encourages this community involvement by their employees.

I.V.I Monetary Donations

As a company, Wharf Resources has a long history of providing thousands of dollars annually to the benefit of public service organizations such as youth groups, youth education and many other community organizations.

In 2012 Wharf established a million-dollar sustainability endowment fund, the Wharf Fund, which was created to assist and support local nonprofit organizations in Lead and the surrounding communities. The Wharf Fund was developed to help create lasting relationships and bring long term social and economic benefits for all communities and people involved. The following are four core funding categories: health, education, arts and culture, and community development. Since its initiation in 2012, \$450,000 has been donated from this fund to numerous local organizations, and the original million-dollar fund has grown to over \$1.8 million as of 2021. Wharf's goal is to grow the fund to \$2 million before the mine closes, with the fund growing indefinitely and using only 5% of the earnings each year.

Independent of the Wharf Fund, Wharf donated \$70,000 in 2016 to organizations in the Black Hills, most notably the Handley Center in Lead, Lawrence County Emergency Management, and Wellspring, Inc. (now Wellfully). Donations in 2017 totaled more than \$80,000, including donations to the Boys and Girls Club of Lead-Deadwood, the Handley Center, and the Northern Hills Alliance for Children. In 2018 and 2019, donations by Wharf to the community were in excess of \$72,000 and \$63,000, respectively. Wharf donated more than \$110,000 in 2020 which was distributed to more than 30 organizations throughout the community. Over the past several years, the largest donations have gone to Wellfully, Boys and Girls Club of Lead, Handley Center, Homestake Opera House, United Way, Lead Chamber, Northern Hills Alliance/First Step Child Care, and Northern Hills Recreational Alliance. So far in 2021, Wharf has donated more than

\$60,000 to over 15 organizations plus an additional \$50,000 to the development of the new Lead Skate Park. Wharf also funds several college scholarships each year.

I.V.II Empowering Women

Beginning in 2014 Wharf has donated thousands of dollars to the South Dakota Center for Enterprise Opportunity. This organization has been focused on developing and expanding training for women for leadership positions. Each year hundreds of women attend their conference focused on this type of training.

I.V.III Emergency Response Services

Public safety is a prime area of concern for Wharf and their employees. The company maintains and supports about 25 employees in achieving emergency response certifications in addition to their regular mining duties. These individuals spend considerable time in training, practice drills and dealing with emergency events for the company and the local neighbors of the mine. They also have constructed a helicopter pad for emergency flight services.

I.V.IV Terry Peak Ski Area

Wharf contributed to the local economy by improving the recreational opportunities offered in the community. The result of this investment is that winter recreation for Terry Peak has grown significantly at the same time that mining activity was visibly taking place nearby. Well over one million dollars has been spent on the Terry Peak Ski Area to build a new ski lodge and install new snow making equipment and to also become a business partner of the facility. Wharf spent \$4.5 million on a new high-speed chairlift, \$0.4 million in snow-making equipment, \$0.5 million in buildings and ponds, and intends to donate 120 acres at Golden Reward to extend the length of ski runs. The improvements have continued to provide a consistent and quality skiing experience for the region. As a majority shareholder in the ski hill, Wharf is committed to continue to support and develop the ski area to increase the community's economic benefits from skiing.

I.VI BALANCE OF THIS STUDY

An abbreviated summary outline of the remaining sections of this report is presented below:

- Section 2. Current Lawrence County Economic Infrastructure.
 - Personal income and trends
 - Employment by sector and recent changes
 - Expenditures
- Section 3. Economic Aspects of Wharf Resources.
 - Historical production trends
 - Pattern of business purchases
 - Employment and residency

- State and local government revenue
- Section 4. Economic Impacts Associated with Proposed Permit Extending the Life of the Mine.
 - Employment
 - Income
 - Expenditures
 - Fiscal benefits.
- Section 5. Social and Economic Impacts
 - Public Safety - Law Enforcement - Fire Protection - Emergency Services
 - Public Utilities - Water - Sewer - Solid Waste
 - County Roads and Highways
 - Recreation
 - Schools
 - Housing
 - Adjacent Land Use Issues
 - Residential Housing
 - Reclamation Implications
- Section 6. Summary

SECTION II: CURRENT LAWRENCE COUNTY INFRASTRUCTURE

Beginning more than three decades ago, significant changes have taken place in the economy of Lawrence County. Some of these changes are unprecedented in terms of rapidity and magnitude. Some of the more salient changes are briefly summarized below.

1. In late 1989, limited gaming became legal in the City of Deadwood. This event set in motion a series of dramatic changes in the local, if not regional, economic structure. After many years of gradual decline in business activity in that city, the economy changed substantially in volume and in focus.
2. The new local business sector was oriented toward the tourism industry and was supplemented by regional gaming enthusiasts on a year around basis. The rapid expansion of the gaming industry brought about an increased demand for labor virtually over a few short months. In two short years, Lawrence County became a net importer of labor from neighboring counties.
3. At the same time, gold extraction using surface mining technology was ramping up in employment. Wharf was a leading player in this new mining technology. During the same span of years underground mining began contracting. The associated reductions in underground mining were absorbed by growth in surface mining thereby maintaining relatively constant mining employment levels - at least until the later part of the decade.
4. A significant shift in retail activity to Spearfish occurred in the 1990's as retail space in Deadwood was displaced by gaming establishments that could afford the escalating rents.
5. In addition to Homestake closing, the 2000 decade saw a transition into one of softening of employment in the mining industry as the surface mines exhausted their ore bodies. From a total of 1,938 mining sector employees in 1993 the gradual decline in mining activity reduced employment in 2008 to 181 and rising slightly to about 260 presently.
6. Despite the disappearance of most mining jobs in the 2000-decade, total private employment grew significantly, not only in the travel and entertainment industry, but also finance, real estate and information technology sectors as well as the Spearfish retail sector.

Although the Lawrence County infrastructure has many facets, this section focuses on employment, income and expenditures as measured by taxable sales.

II.I EMPLOYMENT

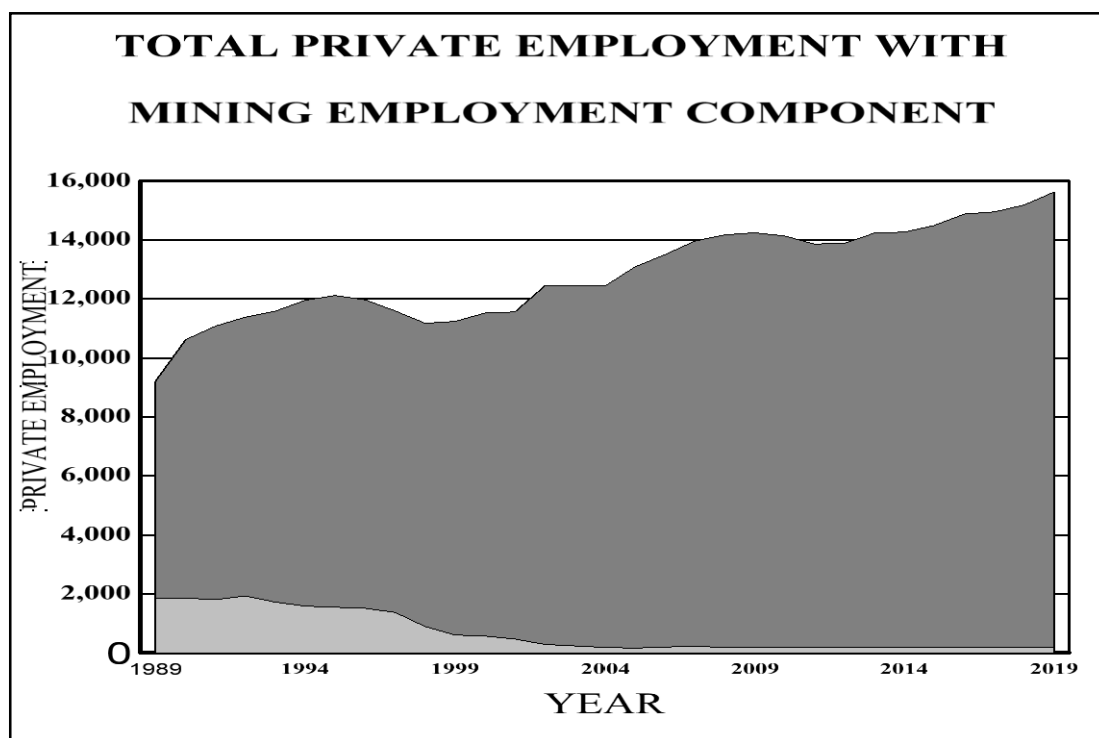
The preceding narrative provides some insight concerning secular movements in employment over the past 30 years. The accompanying graph provides further illumination to the trends that have been experienced in the local economy. In 1989, mining employment accounted for about 1,900 jobs out of 9,200 total private employment or about 20 percent. However, because of the relatively high wages earned by miners, this 20 percent mining employment accounted for more than 44 percent of private worker earnings in the county. The graph also illustrates the period

beginning in 1996 in which substantial drops in private employment occurred primarily because of the scaling back of underground mining. During the ensuing years, some surface mines were scaling back as well so that by 2002, most gold mining employment was traced to Wharf Resources. Since 2002, private employment grew in Lawrence County. Much of this growth was

Source: Bureau of Economic Analysis

traced to the recreation and tourism industry, but significant jobs were also added in finance, real estate and various technology service

sectors. In 2019, total private employment in the county equated to 15,400 with about 225 being employed in the mining sector.



Graph 1. Total Private Employment with Mining Employment Component.

The following table provides sector detail regarding changes in employment in 2001 and 2019.

As would perhaps be expected, retail workers and others working in accommodations and food services accounted for much of the absolute growth. However, the real estate, wholesale trade, finance and insurance sectors also grew by large relative amounts.

The reduced number of private employers in mining, forestry and fishing prevents the disclosure of actual data to prevent disclosure of detailed private employment information. Sectors with employment identified by, D, are those whose private employment numbers are withheld.

Table 2. Lawrence County Employment Trends and % Change 2001 and 2019

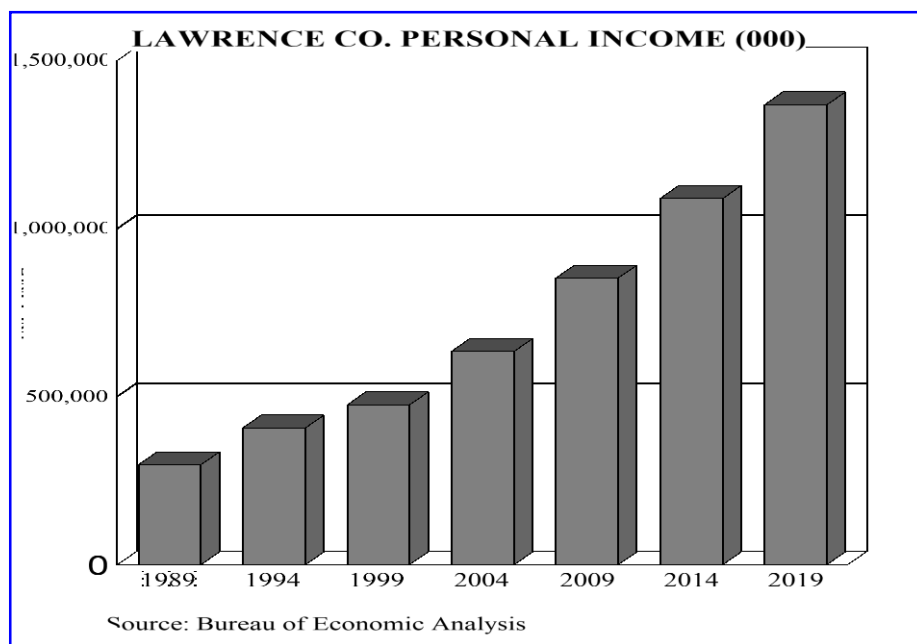
	2001	2019	% CHANGE
Total employment	14,199	18,064	27%
Wage and salary employment	10,683	12,520	17%
Proprietors employment	3,516	5,265	60%
Farm proprietors employment	276	242	-12%
Nonfarm proprietors employment	3,240	5,023	55%
Farm employment	309	271	12%
Nonfarm employment	13,890	17,793	19%
Private employment	11,980	15,636	28%
Forestry, fishing	163	D	
Mining	484	D	
Utilities	47	31	-34%
Construction	948	1,357	43%
Manufacturing	599	562	-6%
Wholesale trade	121	275	127%
Retail trade	1,684	1,932	15%
Transportation and warehousing	245	37	52%
Finance and insurance	598	759	27%
Real estate and rental and leasing	540	1,316	143%
Prof., Admin., Mgmt, Info.	1,096	844	-23%
Health care and social assistance	1,335	1,748	31%
Arts, entertainment, and recreation	1,522	771	-49%
Accommodation and food services	1,858	3,264	75%
Other services	778	911	17%
Government	1,910	2,157	13%
Federal	333	302	-9%
State and local	1,577	1,855	18%

D = Data is withheld to prevent the disclosure of individual business concerns.

Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce

II.II INCOME

Income has been growing in Lawrence County over long periods of time. In 1989, total income from all sources was about \$290 million. By 2019, the last year for which data is available, it had grown to about \$1.37 billion. The pattern of change appears in Graph 2.



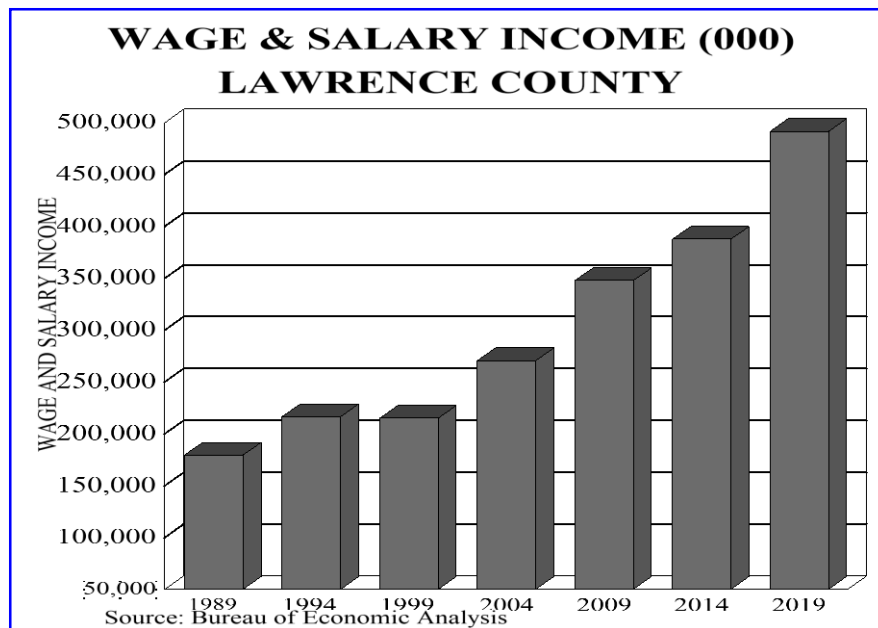
Graph 2. Lawrence County Personal Income.

The change in income was significant subsequent to the enactment of legal gaming in 1989. A moderate leveling off of the growth rate happened in the late 1990s because of the reduction of mining activity and the loss of relatively high paying mining jobs. After 2009, income increased again at a quite rapid and consistent rate.

The rate of growth of personal income for Lawrence County is quite comparable to that which occurred in the entire state of South Dakota. Over this span of time, statewide income grew by 384 percent while Lawrence County income grew by 359 percent.

Wage and salary income is a subset of total personal income, the latter of which also includes interest, dividends, proprietor's income, pensions, and other transfer payments. The importance of the contribution of mining sector earnings is quite apparent when isolating wage and salary income from total county income. This is shown in the Graph 3.

Wage and salary income reached a peak at the time in 1994 and then dropped off slightly in following years due to the reduction in gold mining activity. This loss in income spilled over into other sectors as the multiplier impact in sectors supported by the mining industry took effect. Wage and salary income did not recover to 1994 levels until five years later in 2000. From that time forward until the present, wages and salary income rose significantly.



Graph 3. Wages and Salary Income.

Table 3 provides sector detail concerning changes in earnings from 2001 to 2019. The sectors that have contributed to the improvement in earnings relative to the entire state over this decade are those whose percentages are largest in the accompanying table. They include wholesale trade, retail trade accommodations and food services, professional services as well as some other service sectors.

The reader can compare Table 3 with Table 1 to gain inferences regarding the change in employment levels with changes in sector income. The greater the variation in these percentages, the greater is the change in per capita income.

The most significant factor that separates mining employment from most other jobs in the Lawrence County economy is that the wage per mining job is substantially higher than that found in all other business sectors. This is illustrated in data appearing in Table 4. Wages in the mining sector were 69 percent higher than the overall county average among all private employment in 2020, and about three times higher than leisure and hospitality workers. Mining jobs are of such a pay level that workers can support a family without an additional part time job or relying on the employment of other family members. The average wage for a Wharf employee in 2020 was \$66,537, and total compensation including benefits was \$94,553. This wage is over 50% greater than the average annual wage of \$40,456 in Lawrence County.

Table 3. Lawrence Co. Nonfarm Earnings by Industry Class, (1,000) 2001 & 2019 and Percent Change

Industry	2001 (\$USD)	2019 (\$USD)	% Change
Non Farm Earnings	347,545	608,673	75.1%
Private Earnings	286,362	500,427	74.8%
Forestry, Fishing	3,400	D	D
Mining	25,872	D	D
Utilities	2,784	3,611	29.7%
Construction	21,670	53,718	147.9%
Manufacturing	47,033	30,697	-34.7%
Wholesale Trade	2,741	11,877	333.3%
Retail Trade	29,348	54,165	86.4%
Transportation, Warehousing	5,788	9,557	65.1%
Information	2,632	4,907	86.4%
Finance and Insurance	13,851	23,543	70.0%
Real Estate	2,679	5,609	109.6%
Professional, Admin., Management	10,294	35,928	249.0%
Educational Services	2,085	800	-61.6%
Health Care and Social Assistance	37,758	98,189	160.0%
Arts, Entertainment, and Recreation	38,173	50,517	32.3%
Accommodation and Food Services	22,828	90,160	295.0%
Other Services	11,645	19,493	67.4%
Repair and Maintenance	5,596	5,340	-4.6%
Government	61,183	108,246	76.9%
Federal	13,148	19,009	44.6%
State and Local	48,035	89,237	85.8%

"D" denotes that data cannot be disclosed without revealing private information of individual firms due to a small number of reported employers existing in that sector. For example, if only one or two firms exist in the industry class, a disclosure problem occurs.

**Table 4. Average Annual Wage Per Worker in Lawrence County
Ranked by Selected Sectors, 2020**

Economic Sector	Annual Wage (\$)
Goods-producing	54,704
Natural resources and mining	68,380
Construction	50,388
Manufacturing	52,936
Service-providing	37,388
Trade, transportation, and utilities	35,204
Information	39,676
Financial activities	51,428
Professional and business services	53,716
Education and health services	50,024
Leisure and hospitality	22,256
Other services	32,396
OVERALL AVERAGE ANNUAL WAGE	\$40,456

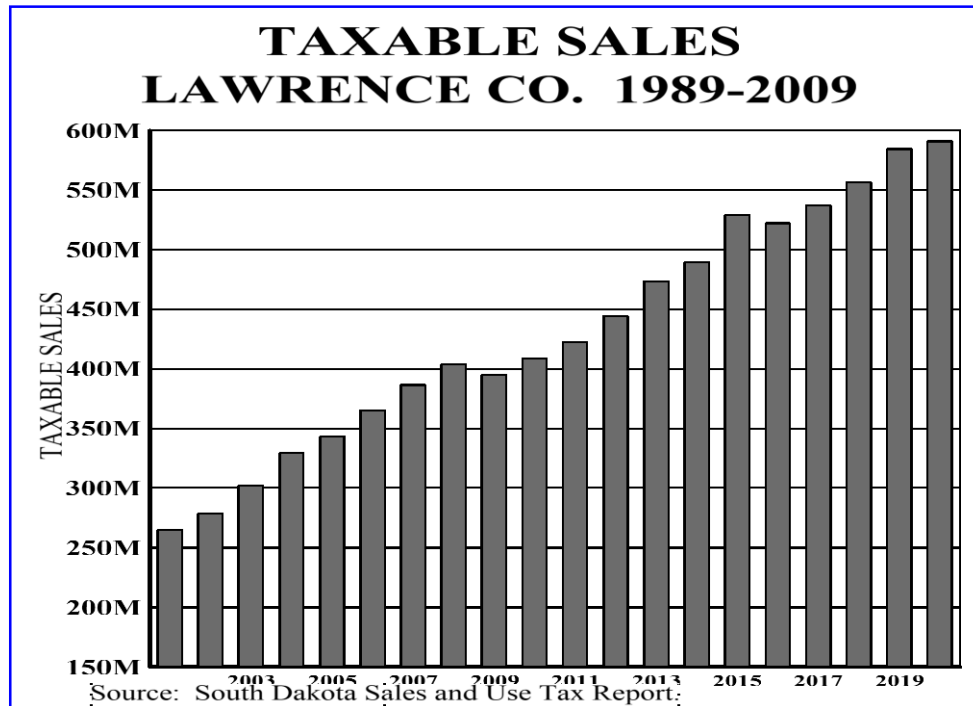
Source: Bureau of Labor Statistics, 2021

II.III TAXABLE SALES

Graph 4 tracks total taxable sales for Lawrence County for the past two decades. Taxable sales are used here to identify trends in expenditures. The application of the sales tax in South Dakota is among the broadest in the United States so it serves a good barometer of general business activity for businesses of all types in the county.

Historically, changes shown in taxable sales mirror closely the increases in personal income and employment. The economic infrastructure of commercial activity in the county is such that more than 85 percent of all taxable sales are now accounted for by retail sales and services. It is also noted that there was substantial growth in taxable sales from 1989 to 1990 that can be traced to the advent of gaming in Deadwood. There was a drop in taxable sales that first occurred in 1998 (and did not recover to 1997 levels until 2000) and was due to the contraction of the mining industry - again pointing to the importance of employment in that sector to the health of the overall business environment in the county. During this time span denoted in Graph 4, only two years of moderate decreases in taxable sales have occurred. One of those years, 2009, the drop in taxable sales can be explained by the national recession in 2008 reducing vacation travel. A small reduction also took

place in 2016. Over the entire time period considered in the graph, taxable sales grew by an average annual rate of 6.5 percent while average inflation over this period amounted to approximately two percent.



Graph 4. Taxable Sales, Lawrence County.

In recent years, Spearfish has accounted for about two-thirds of all taxable sales generated in the county and appears to have stabilized at this level. This percentage has been gradually rising from the 55 percent range that was typical in the mid-1990s.

Wharf’s tax contribution at both the county and state level are discussed in Section III. Average South Dakota purchases are \$20.8 million per year and average state and local sales, use, and property taxes (not including severance tax) is \$0.59 million per year.

II.IV SECTION SUMMARY

The above discussion provides a brief overview of the Lawrence County economy. Mining has historically been a dominating facet in terms of income, employment and spending. There are a number of significant changes that has allowed the local economy to thrive during the reduction in mining jobs in the county. There have been three developments that stand out most in this diversification effort. One concerns the development and continued growth of gaming and the associated growth of the vacation travel industry. Major inroads are also expected to occur in business and convention business with the recent development of expanded facilities tailored to

that purpose. A second impact involves the transformation of the City of Spearfish into a major shopping and service location in the Northern Black Hills region. This region extends well into Wyoming and perhaps into some sparsely populated areas of Southeast Montana. A third development in the early stages of producing economic benefit to the area is the conversion of part of the underground Homestake mine to a scientific lab. A recent economic impact study concludes that over the next ten years new direct employment connected to the lab operation will equate to nearly 250 positions per year with more than \$200 million in associated earnings. (Source: Fiscal Impacts of the Sanford Underground Research Facility, Anderson Economic Group, 2021)

Nevertheless, it has been shown that mining jobs will continue to serve as an important source of income for families in the Northern Black Hills.

SECTION III: ECONOMIC ASPECTS – WHARF RESOURCES

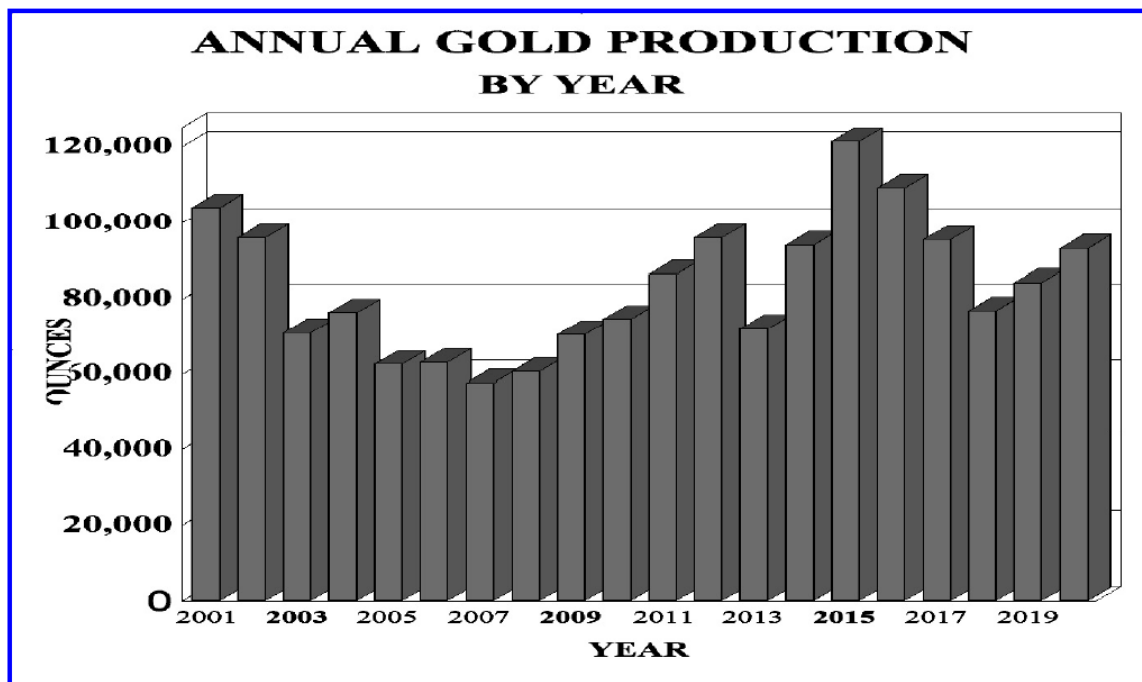
The growth and development of the Wharf Resources surface mine will be documented in the present section. Since the beginning of operation, annual gold first increased and then maintained relatively stable levels over the major portion of time that it has functioned.

Favorable and steady economic impacts to the local and regional economies have come along with this long period of production. A descriptive presentation of the movements in several key economic facets will be developed below.

III.I PRODUCTION TRENDS

Wharf has employed a long-term strategic planning process that has included exploration and testing well in advance of immediate mining needs, thereby maintaining a viable production pattern over at least 40 years. Of course, there are many variables in determining the quantity of recoverable ore reserves. Such factors as the price of gold, the cost of production and the ability to acquire available mining reserves all play important parts in measuring the stock of available ore reserves.

This planning process has resulted in the pattern in Graph 5 over the past two decades. Production gradually expanded in the years leading up to 2000. Production has fluctuated in recent years, normally in the range of 80,000 to 100,00 ounces.



Graph 5. Annual Gold Production by Year.

Silver has also been produced as secondary product in the extraction process and are similar in quantity to gold production, but at a far smaller market value.

In large part, gold production follows movements in gold prices. Prior to the late 1990's, prices normally rose above \$400 per ounce. Since that time, there has been an overall upward trend in prices. Prices rise and fall cyclically depending on economic uncertainties perceived by market participants. Yet there have been very large swings over the years as social and political events dictate. Recent years have seen prices of gold are at all-time highs occasionally reaching nearly \$2,000 per ounce, a factor that increases the economic feasibility of mining reserves that in the past would have been marginally profitable.

III.II HISTORIC EXPENDITURES

Graph 6 provides a summary of Wharf expenditure for all goods and services procured within South Dakota in connection with the mining operation. These annual purchase totals include capital expenditures associated with the operation. Over the five years included in the graph, spending has varied between a low of \$17.1 million in 2016 to a high of \$24.3 million in 2020. South Dakota purchases have averaged \$20.8 million from 2016 to 2020, for a total of \$104 million over the 5-year time frame.

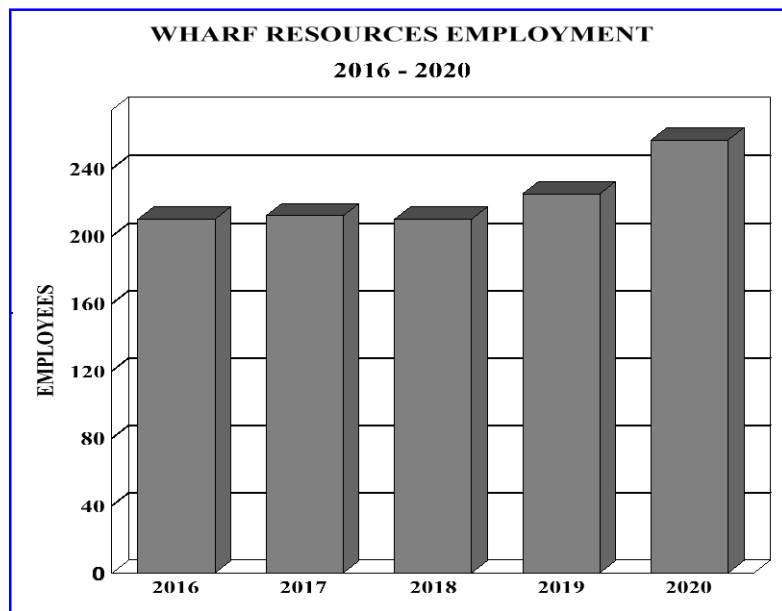


Graph 6. Wharf Purchasers of Goods and Services in South Dakota.

Approximately 36% of all spending on goods and services took place with South Dakota businesses. Vendors within Lawrence County received about 10% of all South Dakota spending, Rapid City accounted for another 37% with the balance of South Dakota spending taking place

elsewhere in the state. During the last five years, an average spending level of over \$1.7 million took place in Lawrence County.

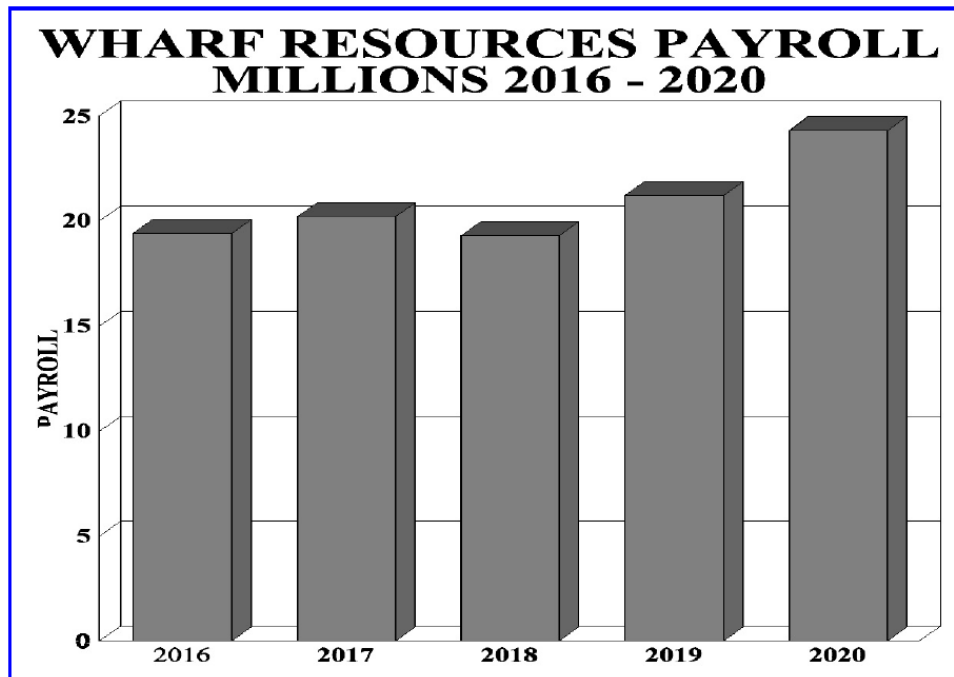
III.III EMPLOYMENT AND PAYROLL Historically, total mine employment generally ranged from 130 to 150 workers. Since its affiliation with Coeur Mining Co, annual employment levels have increased. From 2016 to 2020, employment has varied from 210 to 257 workers as shown in Graph 7.



Graph 7. Wharf Resources Employment, 2016-2020.

There is expected to be no material change in annual employment levels associated with the present permit application. However, employment requirements will continue at their current rate generally during the extra years of mine life that the permit affords.

Payroll expenditures are substantial. Graph 8 summarizes the annual payrolls including benefits that have been received by Wharf's workers in Lawrence County. The average wage for a Wharf employee in 2020 was \$66,537, and total compensation including benefits was \$94,553. The cost of benefits have been rising through the years. In 2020, the cost of benefits as a proportion of total payroll equated to nearly 30 percent. Examples of these benefits are health insurance, workers compensation, life insurance, vacation and holiday benefits as well as social security and Medicare.



Graph 8. Wharf Resources Payroll, 2016-2020.

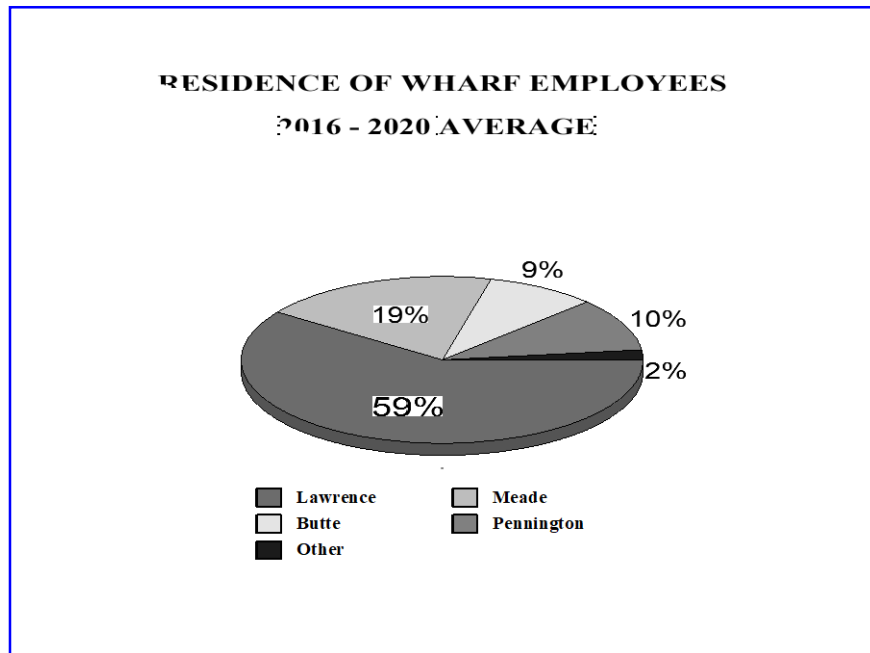
III.IV EMPLOYEE RESIDENCY DISTRIBUTION

From the beginning of production, Wharf has adhered to a policy of hiring the bulk of their workers from the local labor pool. Turnover rates are quite low, so the residency breakdown by community is quite stable over time. Approximately 60 percent of all employees were residents of Lawrence County over the 2016 to 2020 time frame.

Graph 9 illustrates the employee breakdown by county over this time frame. The largest proportion of workers reside in nearby Lead and Deadwood. About one third of the employees living in Lawrence County reside in or near Spearfish. Meade County comprises the second largest number of Wharf employees.

The impact on public schools is associated directly with the distribution of employee residential locations. The distribution of students among public school districts mirrors the residential pattern of the work force. However, there historically has been a slightly higher proportion of students in the Spearfish School District than the proportion of workers living in Spearfish.

Overall, each employee working at Wharf accounts for about two thirds of a student enrollment. Thus, with the number of employees approximately 250 today, it can be inferred that the present impact on school enrollment among the local districts approximates 175 to 185 distributed approximately in proportion to the distribution of employee living patterns. It is emphasized, however, that there is no anticipated new enrollment impact associated with the impending permit application since no additional employees are expected to be needed.



Graph 9. Residence of Wharf Employees, 2016-2020 Average.

III.V STATE AND LOCAL GOVERNMENT REVENUE

The South Dakota tax structure interacts with the gold mining industries. A severance tax is levied by the state of South Dakota in connection with the mining of precious metals. Currently, the standard levy is the sum of a 10 percent tax on net mining profits and a flat \$4.00 per ounce for all gold produced. However, in 1994 the legislature added a system of increments to the standard \$4.00 per ounce severance tax. The relevant South Dakota Statute is quoted as follows:

10-39-68. Additional tax on precious metals--Rate. In addition to the tax imposed in § 10-39-43, there is hereby imposed an additional tax on each ounce of precious metals severed as follows:

- (1) Four dollars per ounce of gold severed during a quarter if the average price of the precious metal is eight hundred dollars per ounce or greater;*
- (2) Three dollars per ounce of gold severed during a quarter if the average price of*

the precious metal is seven hundred dollars per ounce or greater;

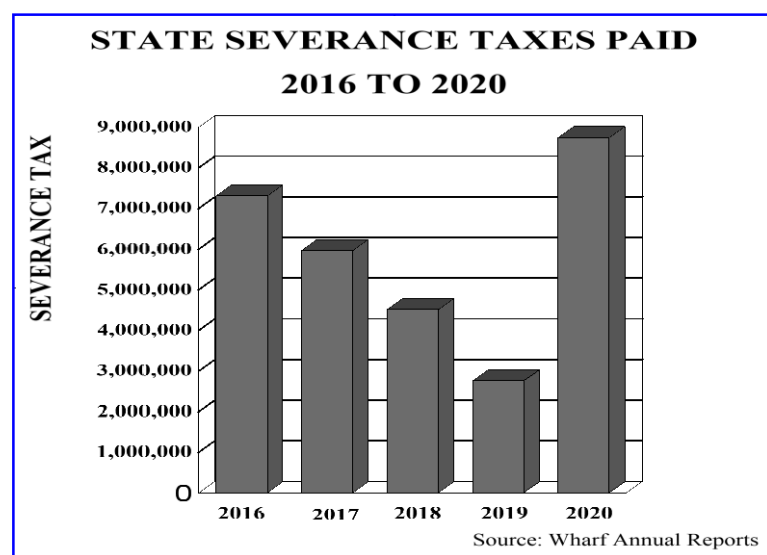
(3) Two dollars per ounce of gold severed during a quarter if the average price of the precious metal is six hundred dollars per ounce or greater; and

(4) One dollar per ounce of gold severed during a quarter if the average price of the precious metal is five hundred dollars per ounce or greater.

The average price of gold shall be computed by summing the daily London Final price of the precious metal for each business day of the quarter and dividing by the number of business days in the quarter.

Source: SL 1994, ch 89, § 5.

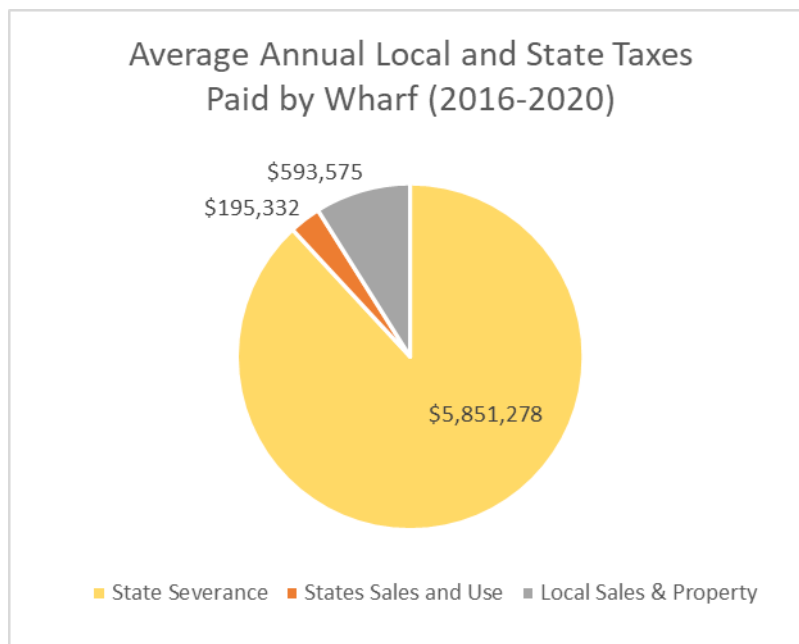
Given current world prices of gold, it is apparent that the effective severance portion of the tax would in all likelihood be equal to \$8.00 per ounce for the foreseeable future. Tax rates of these magnitudes produce substantial revenue benefits to the State of South Dakota from the Wharf Mine.



Graph 10. State Severance Taxes Paid, 2016-2020.

State severance taxes paid by Wharf from 2016 to 2020 appear in Graph 10; the total value of severance taxes paid over this 5-year period was \$29,256,391 and averaged \$5,851,278 per year. In 2020, Wharf severance taxes amounted to more than \$8.7 million, the largest amount ever paid by the company in one year. The wide year-to-year variation in severance taxes paid illustrates the impact on these taxes from fluctuations in gold prices and production levels as well as production timing. This volatile pattern of severance taxes paid has been an ongoing characteristic for Wharf over the decades. However, from 2005 and up to the present, severance taxes paid have generally increased.

The general state sales and use tax is assessed on all transactions which involve either the sale or use of any item utilized in the process of conducting business within the state. The present sales and use tax rate is 4 percent. Between 2016 and 2020, Wharf has paid a total of \$976,658, or an average of \$195,332 per year, in state sales and use taxes (Graph 11).



Graph 11. Average Local Property Taxes and State Severance Tax, 2016-2020.

Cities and towns in South Dakota also have the ability to assess a sales tax on goods and services transacted within their boundaries. This tax generally varies between one and two percent. In addition to sales taxes, local governments such as cities, school districts and counties depend to varying degrees on a property tax. In the case of mining properties, the appraisal and therefore tax is based on the degree of gold production potential of individual mining operations. Graph 11 compares the average annual amount of state and local sales and use taxes and local property taxes paid in recent years to the amount of state severance taxes. Property taxes and sales and use taxes comprise very important components of revenue to local governments. Of the average annual \$593,575 in local taxes paid, the majority consists of property taxes. The majority of local property taxes collected actually goes to the support of the Lead-Deadwood school district. Over the last 5 years, Wharf has paid a total of \$2,967,874 in local taxes. Special taxing districts such as fire districts and various improvement districts also typically assess property taxes in South Dakota.

Since virtually all Wharf property lies outside any municipality, property taxes received from them by cities and towns is very minor. However, many Wharf employees reside in area cities and towns such as Lead, Deadwood and Spearfish and therefore pay municipal sales and property taxes.

The state government and municipalities rely heavily on sales and use taxes. The amount of sales taxes paid by Wharf annually correlates with the level of mine operation outlays for current expenditures and many capital investments.

III.VI SECTION SUMMARY

The purpose of the preceding discussion was to track movements of various economic data which are associated with the Wharf mining operation. An analysis such as this provides the reader with a time-dimensioned understanding of how the growth of a company produces changes in economic variables which in turn produce impacts on the local and regional economies.

Considerable operational costs are associated with the type of mining carried out by Wharf. Spending for standard mining supplies, equipment and various contract services add to millions of dollars annually. Expenditure policies of the company include the goal of purchasing as much as is practical and available locally first. For items that are not readily available locally, purchases are made elsewhere in South Dakota. Some mining equipment and services that are not readily available in the state are purchased outside South Dakota.

Employment levels in recent years have ranged between 210 growing to 257 in 2020. Payroll outlays including benefits have varied between \$19.4 and \$24.3 million per year. About sixty percent of Wharf employees reside in Lawrence County communities such as Lead, Deadwood and Spearfish.

During the last five years, severance taxes paid to the state by Wharf has averaged just under \$6 million per year. Additionally, state and local sales and use taxes and local property taxes have averaged about \$600 thousand annually.

The following section will involve a discussion of economic impacts associated with extending the life of the mine.

SECTION IV: ECONOMIC AND FISCAL IMPACTS ASSOCIATED MINE LIFE EXTENSION

The following pages provide a summary of economic impacts that are likely to take place over the additional life of the mine operation that would be afforded by the approval of a mining permit contemplated at this time. The methodology involves straightforward extrapolations of past experience with the existing mine coupled with certain expenditures somewhat unique to the proposed location of the ore bodies associated with this proposed permit. The extrapolations involve a window of time lasting from a minimum of 1.5 years up to 3 years of additional mine life.

IV.I EXPECTED CAPITAL INVESTMENT AND PURCHASES OF GOODS AND SERVICES

Mining requires significant capital investments purchases of goods and services, particularly when mine plans change substantially in connection with newly permitted acreage. Likewise, there will also be significant and unique capital investments when the new proposed permit. In terms of these expenditures, such spending levels are tentative in nature and will ultimately depend on final testing, engineering and permit requirements. However, based on past experience, the mine operation annual expenditures have mirrored the additional years of life of the mine operation. Table 5 summarizes these impacts based on past operational experience.

These amounts represent preparation of the ore bodies for mining and ongoing expenditures to sustain the project during the remaining active life of the mine. The additional life of the mine estimate is also tentative at this point in time. Estimates have ranged from a low of an additional 1.5 years and a maximum of 3 years.

Table 5. Expected Expenditure for Capital and Goods and Services Assuming 1.5 and 3 Years Of Additional Mine Life, by Locality

Source	Annual Expenditure (\$)	+1.5 Years Mine Life (\$)	+3 Years of Mine Life (\$)
Non-South Dakota	36,726,249	55,089,374	110,178,748
Lawrence County	1,837,377	2,756,066	5,512,132
Rapid City	7,690,158	11,535,237	23,070,475
Other South Dakota	11,272,941	16,909,411	33,818,822
TOTALS	\$57,526,726	\$86,290,088	\$172,580,177

IV.II EMPLOYMENT AND EARNINGS

Based on experience from the last five years, an average of 223 employees received total pay, including benefits, of about \$20.9 million or an average of nearly \$94,000 per full time worker. Mine plans suggest that the required number of employees during the extended mine life will not change as a result of the pending permit. Given the estimated range of the extended life of the mine as being between 1.5 and 3 additional years, the total amount of additional income, including benefits will range between \$31.4 to \$62.8 million.

No increases in wages are assumed here relating to annual improvements in wages during the extended mine life. Increases in pay are determined by labor market conditions, productivity gains and rates of price inflation, all of which are not easily projected during the current economic times.

Another important aspect of sustaining mining jobs over the extended life of the mine afforded by the pending permit is the maintenance of induced employment increments in the region. This is because basic employment in the mining industry generates an *induced* incremental employment impact because of the labor requirements that are added due to increased local demand on goods and services produced in other sectors of the economy. This so-called multiplier effect is technically the result of the spending of wage income by Wharf employees and also the local non-labor expenditures of the mining operation itself. The ratio of total employment to basic employment is known as the employment multiplier. The size of the multiplier is, of course, not directly observable, but rather is analytically measured using various econometric techniques. Two past examples of employment multipliers suggest an estimated value of 1.7 and 2.3, respectively. (Sources: Socioeconomic Assessment, Golden Reward Project, Lawrence County, SD, 1987, Economic Impact Analysis of the Mining Industry in South Dakota, Michael K. Madden, June 1995.) These two estimates are probably viewed by most as being a lower and upper limit to a reasonable multiplier for surface mining projects such as is discussed here. A midpoint multiplier value of 2.0 would imply that one job outside the mining sector is induced for each job within the mining sector. This means that the sustaining of 223 jobs within the mining sector would induce another 223 jobs throughout the balance of the economy elsewhere in the private and public sector. These jobs would be distributed according to company spending patterns as well as employee residency patterns.

IV.III FISCAL IMPACTS TO LOCAL AND STATE GOVERNMENTS

Projecting the fiscal implications of the extension of the life of the mine entails various challenges. It is recalled that the major interactions that gold mines have with the state and local tax structures are through the sales tax, property tax and the severance tax on precious metals.

The projection of the sales tax is straightforward. This is because the scale of operation under the new permit is expected to remain at essentially the same level as has been experienced in recent years. The primary difference in the operation simply involves moving gradually to new ore bodies encompassed within the proposed mining permit under consideration at the present time. Based on the last five years of experience, state sales and use tax has ranged between \$150,000 and \$280,000. The five-year average is used as an estimate over the added life of the mine.

Property taxes are more difficult to forecast. Property tax levies are based on the value of the expected ore body permitted to be mined. Important inputs into the valuation formula involve the price of gold and the remaining quantity of recoverable gold and silver reserves associated with the acreage. In addition to that, the property tax rate experiences changes from year to year. The estimated amount of sales and use taxes and property taxes of the extended life of the mine is the amounts of these taxes that have been paid over the years of 2016 to 2020 or about \$600 thousand per year

The state severance tax on gold mines is made up of two components. One component is that there is a flat \$4.00 per ounce severance tax on mined gold, but this tax rises to \$8.00 if the market price of gold exceeds \$800. An examination of past gold prices suggests that the future price is likely to be \$1,000 per ounce or more.

Although there are no methodologies that would be able to forecast the state severance tax accurately over the 1.5 to 3 years of added mine life, it seems reasonable to assume that state severance and profits taxes will approximate that which was paid on average over the last five years, nominally \$6 million annually.

IV.IV SUMMARY

The annual and cumulative economic impacts are substantial to potential employees, to the business sector and also to local governments and the State of South Dakota. The prospect of an additional 1.5 to 3 years of mining will maintain jobs that are important to the local economy. The impacts discussed in this section can be summarized in Table 6.

Many of these estimates are approximate for reasons discussed earlier in this section. However, the conclusion one can reach irrespective of their provisional nature is that the economic benefits are substantial for the general Black Hills region and the state of South Dakota.

Table 6. Economic Impact Associated With Extended Mine Life of 3 Years – 2020 Dollars

Type of Impact	Annual	Cumulative 3 Yrs.
Goods and Services and Capital Exp. and	\$57,526,725 M*	\$110,178,748 M
Direct Employment (number of employees)	223	669**
Indirect/Induced Employment (number of employees)	446	1,338
Payroll incl. Benefits (Wharf only)	\$20.9 M	\$62.8 M
Local Gov. Prop. and Sales Taxes	\$593,575	\$6,300,000
State Sales Tax	\$195,333	\$586,000
State Severance & Income	\$5.85M	\$17.55 M

* Assumes the upper estimate of 3 years added mine life

** Interpreted as man-years of employment (= Employment x number of years employed).

SECTION V: SOCIAL AND COMMUNITY IMPACTS

The issues considered in this section involve a digression into local phenomena that relate to public services, housing, recreation, and various adjacent land use considerations. Public services as a group includes public safety efforts such as fire and law enforcement and emergency response services. Common public utilities such as water, sewer, solid waste and local road maintenance are also included. Many of these individual social impacts interrelate with many other social and economic effects. For example, most police, fire, and emergency services rely on local tax revenue for support - the amount of which is partly determined by the tax base provided by private industries such as mining. Likewise, it is not easy to separate a social impact on the housing market without considering the health of the local labor market.

Along with housing in general, the social makeup of a community is impacted by the availability and overall quality of the education system. This section deals briefly with the current and expected future impact of Wharf on the public education system

Another aspect in the analysis of social impacts that should be clearly understood is that considering the social impacts traced to an entirely *new* economic development opportunity is vastly different than the *continuation* of a very similar existing economic enterprise. In the case of mining for example, if we examine the impact on public services and housing under the assumption of a new gold mine that is projected to hire 225 new employees the social impact is far different than the mere continuation of a similar number of employees. Indeed, it is probably of considerably greater interest and importance to analyze the negative social impacts of the *closing* of an existing mine than the continuation of its operation such as is in the present case.

Because the present study involves a continuation of an operation through extending the life of the mine, the traditional analysis of social factors results in essentially no impact in many instances simply because there are no changes likely to be expected for many of them.

V.I EDUCATION

Over the last 15 years, school enrollment has maintained a relatively stable ratio of students attending public school to the total company employment for the Wharf mine. This ratio suggests on average there are 5 public school students for every 10 Wharf employees.

Over the past five years, average employment at the mine has been 223 workers. Of this total, about 60% of company employees live in Lawrence County for a total of 134 with the remaining 89 workers residing in neighboring counties. Thus, the estimated number of public-school students generated from Wharf households total 67 students. Historically, these student enrollments have

split relatively even between the Lead-Deadwood and Spearfish school district. One can conclude then that each of these districts enroll 30 to 35 students from Wharf employees' households. This has been quite stable even though more employees live in the Lead-Deadwood school district than the Spearfish district.

Over the last 15 years, the Lead Deadwood school district has generally experienced declining enrollment. However, the district's enrollment during the last five years has stabilized to around 775 students. The enrollment impact of the estimated 30 to 35 students from Wharf households is therefore not significant in terms of the district's capacity.

The much larger Spearfish school district has been growing steadily in recent years. In 2010 enrollment in the district was about 2000 students. Over the last five years Spearfish enrollment has averaged 2,375. It can likewise be concluded that the impact of additional employees originating from Wharf households is not significant.

Therefore, neither school district is impacted significantly by the incremental enrollment traced to Wharf Resources. This change in school enrollment of the last couple of decades reflects the population shift that has been occurring in Lawrence County. It can also be said that any positive increase in enrollment that may be related to business activity would likely be regarded as a net positive by administrators from both districts.

The mine permit contemplated presently by Wharf will not result in either an increase or decrease in total employment. However, the expected increase in the length of mine life would likewise be regarded as a positive impact on school districts. One can conclude that the extension of the life of the Wharf mining operation would produce either no impact or a slightly positive impact from the standpoint of the school District.

V.II HOUSING

Housing impacts related to a granting of the proposed permit will have no impact on housing because there will be no material addition or reduction in the Wharf work force. Although there is currently a high demand for housing, particularly in the Spearfish area, it is because in-migration of households from other regions of the country.

V.III PUBLIC SAFETY

V.III.I Law Enforcement

The Lawrence County Sheriff Department is the principal law enforcement agency for the county. The cities of Lead, Deadwood and Spearfish have municipal police departments. The

South Dakota Highway Patrol also has a number of officers working out of communities in Lawrence County. An extensive interview with the sheriff of Lawrence County took place in 2010. A conclusion of that report is that neither the mining operation or their employees have imposed any unusual burdens on law enforcement duties. Since the permit to be considered simply extends the life of the mine, there is no expected change in employment and therefore no net change in population associated with the permit. Thus, approval of the mining permit is not expected to either increase or decrease requests for calls-for-service than at present. The operation itself is not directly reached by traveling over county or city roads. State Highway 473 is the main access and egress from the mine and does not produce a need for major amounts of patrol.

V.III.II Fire Protection and Emergency Services

Since the Wharf mining facilities are surrounded by forested acreage, the possibility of wildfires is a factor that must be considered. In addition, heavy equipment, fuel, and structural improvements are fire risks on mine property as they are in all other industrial settings.

Wharf has a responsibility to maintain on-site fire protection and therefore essentially has responsibility for its own fire protection costs for events that originate on company property. Wharf employees are trained to respond to fires and other emergency events on company property and have been especially trained for a wide variety of emergency circumstances. This emergency response team participates with similar county, state and federal organizations in drills, training and actual emergencies.

In the surrounding area, primary responsibility for fires on private property is the Lead Fire Department. The State Division of Conservation and Forestry has responsibility for wildfire suppression prevention in the area. This department has a physical location that houses offices and equipment two or three miles from the Wharf mine on Highway 473. Fire events within the National Forest boundary would also have a work involvement by the U.S. Forest Service.

Many of these governmental fire suppression and prevention organizations have mutual aid agreements with each other and with Wharf so if exceptional fire events take place the particular organization with primary management responsibilities can receive assistance from any or all of the others.

Emergency response services have rarely been needed in connection with the operation of the mine. Immediate first aid and other basic emergency procedures are provided by the Surface Mine Rescue Team. Ambulance and EMT services are provided in the Lead area by Black Hills Ambulance Service with headquarters in Deadwood.

V.IV HEALTH SERVICES

Employees of Wharf and their dependents are provided a comprehensive health insurance program, these individuals and residents of households indirectly associated with the project support medical and dental practices in the region in parallel with other members of the community. Hospitals in Deadwood, Spearfish and Rapid City are relied upon to provide medical care to all of the individuals associated with the company.

Care facilities are presently in ample supply, and it is expected that a continuation of the life of the mine and the continued patronage that the employees and their families generate would be viewed as positive by the medical care community.

The prospect of a new mining permit will not impact local health services since no additional employees are contemplated.

V.V PUBLIC UTILITIES

V.V.I Water

The Wharf mining operation has its own potable water source and distribution system. Water for dust suppression is also provided independent of outside utility companies. Since no new or additional water needs are projected in connection with the proposed permit, it is not believed that adverse impacts on adjacent properties are likely. No new impacts are expected in connection in conjunction with the contemplated mine permit.

V.V.II Sewer and Solid Waste

Public Utilities are not required for sewer services on company property. The Wharf structures are served by its own wastewater treatment system. Solid waste is limited in connection with the operation. Any solid waste is regularly collected by private contractors and hauled to state approved landfill sites. No change or increase in requirements for these services are expected in connection with the proposed addition to the permitted acreage.

V.V.III Roads

No county roads are in the vicinity of the proposed project. Private roads within residential areas are not expected to be disturbed in any manner. South Dakota Highway number 473 (Nevada Gulch Road) is the primary highway accessing the Wharf Mine. It ties into U.S. Highway 14A approximately three miles from the entrance to the mine. This highway carries vehicular traffic to and from the mine. It also serves the residents of the Lost Camp subdivision and adjacent residential areas. Recreational and other tourist traffic also utilize this road, especially during the winter ski season.

The proposed permit will extend the life of the mine for up to three additional years. No additional traffic is expected to be generated than what has been accustomed to occur in connection with its present operation.

V.VI RECREATION

Outdoor recreation abounds in every direction from the location of the Wharf mining operation. Hiking and biking trails, hunting, all terrain vehicle use, snowmobiling, camping and a myriad of other activities occur throughout the year on private and public land in the vicinity of the Wharf mine. Although such activities are not permitted on property within the permitted mining boundary, recreation of some types are permitted on Wharf owned land elsewhere in the Black Hills. Wharf land included under the pending permit application is not accessible to the public for recreation. Any Wharf land that would be approved for mining under the new permit would also not be accessible to the public.

V.VII ADJACENT LAND USE

In addition to the recreational uses discussed immediately above, the remaining major recreational activity concerns the commercial downhill skiing operation on Terry Peak which is essentially adjacent to the additional mining parcels contemplated in the pending permit. The Terry Peak ski area is unique in that it is one of the few places in the region not situated along the spine of the Rocky Mountains. Terry Peak does not offer the diversity and challenge of many western ski resorts but does provide a valuable recreational opportunity for residents from the Black Hills region and many other more distant communities to the east.

Terry Peak is owned and operated by the Black Hills Chairlift Company, which also holds a special use permit from the U.S. Forest for a portion of the lift and trail system on Terry Peak. The Terry Peak Ski Area consists of two parking areas, four major lifts and over two dozen trails. The ownership makeup of this company is comprised of a limited number of partners with a still more limited number of major partners. Wharf Resources is one of the partners in the company, but there is no individual owner, including Wharf, that owns a controlling interest in the company. The ownership interest of the company by Wharf has been mutually beneficial to all parties. Wharf, as a company, has gained insight on the sensitivity of the ski business to what occurs on properties that are proximate to their mining operation. The ski company has benefitted by being aware of what resources Wharf is capable of providing to make the ski area more functional. Providing material for parking lots and assisting with investments in artificial snow making equipment are but a few examples. The latter has been instrumental in reducing the ski down- time in the early part of the season when precipitation is often not dependable.

Evidence strongly suggests that skier days rises when snow conditions are better and fall when snow conditions are poor. On the other hand, mining activity proximate to the ski area has not been shown to be a significant factor in the use of the facility. The improved snow making capability, however, has had measurable positive impacts on visitor volume to the ski area simply because it is a substitute (albeit an inferior one) for natural snow. Thus, a major conclusion at the time, was if snow conditions are improved, the number of skier visits rises. It has also been learned that artificial snow and natural snow both increase business volume, but natural snow is much more important than artificial snow for increasing user volume.

Early knowledge of this and due to the unpredictable Black Hills winters, Terry Peak initiated snowmaking investments in the 1970s. Additional snow making improvements have continued over the years. The last major investment occurred in 2002 when Terry Peak acquired three wells and holding ponds as part of the reclamation plan and partnership of the Golden Reward mine owned by Wharf. During that time, the company also undertook a five year plan for major improvements which included expanded snow making coverage, improved chairlifts capacity, lodge improvements and increasing the amount of ski terrain.

In summary, the last thirty or so years have confirmed that ski recreation can co-exist in relative harmony to nearby gold mining operations and even grow in popularity when investments are targeted to improving the skier experience on the slope. It also has shown that the visual impacts of mining activity as skiers recreate, does not interfere with their enjoyment of the sport. Wharf involvement with the ski area has played a large part in enabling and encouraging many of the improvements of the ski facility. It would appear this past pattern can be continued with the mining of newly permitted mining areas and would not interfere with ski activities.

V.VIIIADJACENT HOUSING

The primary housing areas that are perceived to exhibit potential impacts in connection with the proposed permit consist of the Barefoot Condominium area and the Lost Camp area. Both of these areas bear proximity primarily to the southern part of the proposed permit area that is adjacent to the existing Wharf operation.

A historical chronology of the Lost Camp residential area concerns the fact that it was originally envisioned as location for recreational, seasonal use cabins, and cottages. As time passed, more substantial structures were developed with the potential to be occupied 12 months a year. The seasonal use that has evolved is primarily during the summer vacation period and the winter ski season, although other seasons may see some use of seasonal homes. It appears when traversing the area that there are now several homes occupied year around in the subdivision. The vast

majority of all buildable lots appear to be developed at this time. Based on review of aerial photographs, the number of homes has increased over time, from approximately 35 stand-alone structures in 1995 to over 150 in 2021.

During a 2010 Socioeconomic Study, area realtors were interviewed extensively. (Socioeconomic Assessment, Wharf Mining Co., Dr. Michael K. Madden, 2010) What was learned in this effort remains very relevant in today's local real estate environment. Over a large number of years, many somewhat unique characteristics of the housing market in the Lost Camp area have evolved. First, the rate of turnover of properties has always been relatively high in that subdivision. This is, no doubt, caused in large part by the fact that a significant portion the residences are viewed as seasonal or as a family's second home. As other recreational investments, owners look at these properties as way to make use of part of their discretionary income. Second, some of the properties are viewed merely as investments. Some owners, reportedly, use the properties personally very rarely, if at all and rent them through vacation leasing brokerages.

The past has also seen situations when problems concerning the dependability of potable water existed for these residential areas. In 2005, Wharf Resources transferred ownership of a water system to the Terry -Trojan Water District (TV-TWPD). In connection with this transfer was an access easement along the water line route, appurtenances such as of pipeline, two wells and pumps and a booster station facility were included in this transfer. Another lot was provided to the district for additional storage. This improvement has apparently eased most of the historical water problems experienced by the residential areas.

A main driver of the housing market in the area has historically been the benefits of the nearby ski area and its location for other vacation and recreational pursuits during other seasons of the year. Fluctuations in the housing market in this area are significantly impacted due to local and national economic conditions because of the discretionary nature of the second home market. Personnel at the county assessor's office indicate that over long periods of time the housing market near Terry Peak mirrors the overall housing market of the county

Realtors with work experience spanning the entire span of Wharf mining activity feel that the critical factor in determining the ultimate impact on these housing areas is the degree to which environmental impacts are screened from the area in a manner similar to what has been experienced in the past. Historically, mining by Wharf has had no measurable effect on property values, and if Wharf maintains their past record of being sensitive to adjacent land use, the impact resulting from the additional mine life will remain much as it has as it has over the last thirty-five years.

Much cooperative effort has been accomplished over time by the Wharf mine to be good neighbors to owners of residential property. The company has been proactive when these conditions are faced by nearby housing. As an example, when mining and exploration activity involves equipment that require back-up warning devices, mine management replaced these safety devices with alarms that amplify over shorter distances. Other examples involve tailoring blasting over a time of day that is least interruptive for residents as well as reducing the size of blasting charges to reduce noise levels. Blasting is also postponed during periods of time when wind forecasts suggest potential dust transmission over residential property.

V.IX RECLAMATION IMPLICATIONS

Although reclamation plans are beyond the scope of this socioeconomic study, adjacent land uses are a critical consideration when reclamation plans are developed. South Dakota Codified Law Chapter 45-6B provides statutory guidelines for reclamation of mined land upon completion of mining activity. Throughout the statute, reference is made concerning adjacent land uses and desirability of considering neighboring historic and current land use criteria when reclamation decisions are made.

The existing adjacent land uses that are proximate to the pending permit application include rangeland, residential uses and recreation including the adjacent commercial downhill skiing facility on Terry Peak.

V.IX.I Rangeland and Woodland Grazing

Land that will revert to grazing and browsing purposes will be compatible with the present use of much of the land to be disturbed as well as other adjacent land uses. Although the economic benefits pertaining to grazing land is normally not significant, the open space that such use affords provides social and aesthetic benefits consistent with what currently exists in the area. The primary grazing benefits will relate to improvements to habitat for wildlife with perhaps minor enhancements to hunting and wildlife viewing. However, limited economic benefits may also accrue within the agricultural sector for grazing of domestic livestock.

V.IX.II Residential

Areas within the proposed mining permit application that are adjacent to existing residential neighborhoods may have long run potential for conversion to residential re-use when mining activity ceases. Specifically, north and west portions of the area proposed for disturbance is proximate to the existing Lost Camp subdivision.

In addition, the Barefoot Condominium complex is also close to where mining and subsequent reclamation activity are expected to occur over the extended life of the mine. Another advantage for residential re-use of this area is the Terry -Trojan Water Project that could potentially accommodate limited additional housing.

The degree of residential re-use will ultimately depend on market factors concerning housing demand.

V.IX.III Recreation

Enhanced winter recreation opportunities represent a substantial long-term economic benefit to Lawrence County. Benefits that have already been experienced to the downhill ski area at Terry Peak in connection with capital improvements provided in part by Wharf. New areas with improved access and parking that may be part of the reclamation plan will also enhance this economic benefit. Commercial lodging facilities and other commercial enterprises that are consistent with recreation re-uses such as cross-country skiing rentals and snowmobile services are also potential re-uses of nearby Wharf mining property.

In addition to downhill skiing, new opportunities for cross-country skiing, snowmobiling and snowshoeing are all activities that could be enhanced in land reclaimed for recreational purposes. The potential economic impact from such activities is substantial since Lawrence County has accomplished much in familiarizing outside visitors to the immediate region on a year-around basis.

Actual allocation of acreage for such purposes would presumably be determined by perceived economic opportunities compared to other uses at the time such land is available when nearby mining activity ceases.

SECTION VI: SUMMARY

The socioeconomic impacts to be expected in connection with the approval of the proposed mining permit presently contemplated by Wharf resources can be summarized as follows:

VI.I ECONOMIC IMPACTS

Economic impacts are substantial relative to other economic activities in the county employing a similar number of workers. This is because mining is a primary industry that creates new wealth that is distributed throughout other sectors of the economy in the process of extracting gold. The number of workers employed in the mining industry in connection with the pending permit would remain approximately at current levels for an additional 1.5 to 3 additional years of mine. The current mine life in the absence of new permitting is 2027.

Total payroll associated with these employment positions totals about \$24 million per year including worker benefits and other employment costs. The average wage for a Wharf employee in 2020 was \$66,537, and total compensation including benefits was \$94,553. This wage is over 50% greater than the average annual wage of \$40,456 in Lawrence County.

Purchases of goods and services required by the company to conduct mining activity is expected to average about \$60 million annually. Therefore, for each additional year of mine life, the company will spend \$84 million on payroll and purchases. These dollars would, in turn, generate induced economic impacts to the local economy as Wharf workers spend their income in the local economy and as the mine purchases goods and services from local vendors. It is estimated that the induced employment increment would amount to another 225 positions distributed in various local economic sectors.

VI.II TAX IMPACTS

State and local tax structures interact with mining activity. For each additional year of mine life, Wharf will pay an estimated \$6.6 million in state and local taxes, including severance tax.

Sales taxes paid annually by Wharf to the state has averaged approximated \$200,000. Workers, in the process of expending their earnings, will add at least another \$420,000 in sales tax benefit to the state. Although only a limited amount of direct purchases by the company occur in municipalities, it is apparent that most of the taxable expenditures incurred by Wharf employees does occur within municipal boundaries.

Local sales and property taxes directly arising from mine property accrue primarily to school districts, Lawrence County government and municipalities. During recent years that amount has been about \$600,000 per year.

Severance and other state taxes have averaged \$5.85 million over the past five years. The amount of tax revenue for future years will be impacted by the price of gold as well as production levels.

VI.III SOCIAL IMPACTS

Impacts on public education arise from revenue and from an enrollment point of view. As seen earlier, the revenue impact to the Lead-Deadwood school district is substantial. The impact on enrollment, however, is minor. Only about 105 students in the Lead-Deadwood school and Spearfish school districts originate from households of Wharf employees. The balance of students are distributed in neighboring counties.

Representative opinions in the past from public safety services such as police, fire, health, and emergency services do not regard the existence of the mine and its employees in their service area as a detriment to their activity. They report that no undue or unexpected requirements for service arise in connection with the mine.

Public utilities for the most part are operated via enterprise accounts which suggests that the demand for services largely are paid directly by users on a fee basis. Adequate capacities exist for such services in the area and continuation of their requirement by households of Wharf employees are not regarded as problematic.

Roads and streets similarly do not experience measurable additional wear by the company or their employees. Most of the utilization of company rolling stock occurs exclusively on mine property.

Commercial recreation in the area of Wharf mining activity is limited primarily to the Terry Peak Ski Area. Considerable improvements have been made to the Terry Peak ski operation since the involvement of Wharf began in the 1990's. Considerable investments in snow making equipment have been made possible by the involvement of Wharf as a business partner.

Adjacent housing areas, particularly those located near the existing Wharf property is the only component of the permit that could bear an impact on residential property owners. If mining activity associated with this permit is carried out using mining practices that are similar to what they have been able to accomplish over past years, impacts to this sector will be minimal. According to knowledgeable real estate professionals and employees associated with the Lawrence County office, market values of residential property has not suffered any adverse economic impacts from past mining activity by the company. Over long periods of time real estate values

have fluctuated similar in the Lost Camp subdivision to what has been found elsewhere in the county.

Wharf will continue its community involvement through the duration of the expansion. As a company, Wharf Resources has a long history of providing thousands of dollars annually to the benefit of public service organizations such as youth groups, youth education and many other community organizations. Wharf will continue to provide monetary donations to the community and to the Wharf Fund as well as provide resources to local emergency response and the Terry Peak ski area.