



***Socioeconomic Impacts
of the Greens Creek Mine***

Prepared for:
Hecla Greens Creek Mining Company

June 2017



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Summary of Key Findings

Hecla Greens Creek Mine (Greens Creek) is a silver, gold, lead, and zinc mine located on Admiralty Island southwest of Juneau. As the largest primary silver mine in the United States, and one of the largest in the world, Greens Creek produced more than 9 million ounces of silver in 2016.

This study analyzes the socioeconomic impacts of Greens Creek on Juneau, Southeast Alaska, and the State in 2016 and provides a profile of mine employees.

Economic Impacts

Key findings for the Juneau and statewide economic impacts are summarized below.

DIRECT IMPACTS

- Greens Creek employed an average of 414 workers in 2016, with total annual wages of \$50.9 million.
- Juneau residents comprised 47 percent of employees and earned \$24 million in wages. Overall, Alaska residents comprised 66 percent of the workforce and earned \$34 million in wages.
- Greens Creek employees earned average annual wages of \$122,800, more than double the Juneau average of \$51,700.
- Greens Creek is Juneau's largest private sector employer in terms of annual average, full-time employment and total annual wages.
- Goods and services spending totaled \$75 million statewide and \$58 million with businesses located in Juneau.
- Mine property and sales tax generated \$2.4 million in payments to the City and Borough of Juneau. Additionally, Greens Creek paid \$1.1 million to the State of Alaska, predominantly for the Mining License Tax.
- Greens Creek contributed \$137,000 to 90 Alaska charities in 2016, including \$48,000 contributed to 51 Juneau non-profits.
- Interruptible power sales from AEL&P to Greens Creek helps keep electricity rates low for all Juneau customers.

TOTAL IMPACTS

- Including direct, indirect, and induced employment and wages, Greens Creek's operations accounted for more than 865 jobs and nearly \$70 million in total wages in Juneau in 2016.
- Mine operations accounted for 975 jobs and \$76 million in total wages in the statewide economy, including all multiplier effects.

Table 1. Summary of Juneau and Statewide Economic Impacts, 2016

Economic Activity	Juneau	Alaska
Direct Impacts		
Direct employment	414	414
Direct wages	\$50.9 million	\$50.9 million
Number of resident employees	193	274
Direct wages paid to resident employees	\$23.7 million	\$33.7 million
Average employee wages	\$122,870	\$123,047
Total spending on goods and services with local and Alaska vendors	\$58.4 million	\$75.3 million
Number of local and Alaska vendors supplying goods and services	49	84
Tax payments	\$2.4 million	\$3.5 million
Corporate charitable contributions	\$48,350	\$137,400
Number of local charitable organizations supported	51	90
Multiplier Effects		
Indirect and induced employment	450	560
Indirect and induced wages	\$18.6 million	\$25.0 million
Total Impacts		
Total employment (direct, indirect, induced)	865	975
Total wages (direct, indirect, induced)	\$69.5 million	\$75.9 million

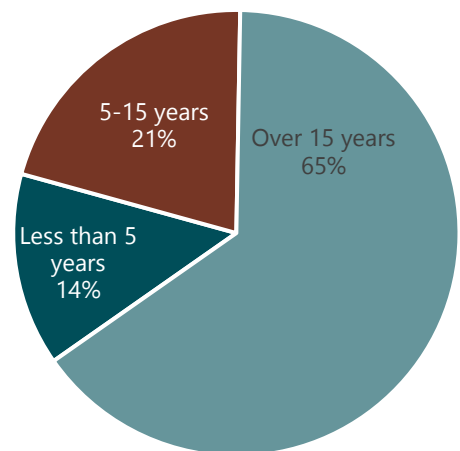
Source: Hecla Greens Creek Mining Company and McDowell Group estimates.

Employee Profile

Included below are highlights of the 2016 employee profile.

- Greens Creek employees are longtime Alaska residents, with 65 percent having lived in the state for more than 15 years.
- One-third (31 percent) of employees have worked at Greens Creek for 10 or more years.
- Greens Creek households account for 159 students in Southeast schools, including 144 in Juneau. Children of Greens Creek employees represented an estimated \$776,000 in Juneau School District revenue from the State.
- Nearly three out of four employees (72 percent) are home-owners, accounting for an estimated \$49 million in Juneau residential real estate. The estimated residential real estate accounts for more than half a million dollars in annual CBJ property tax revenues.

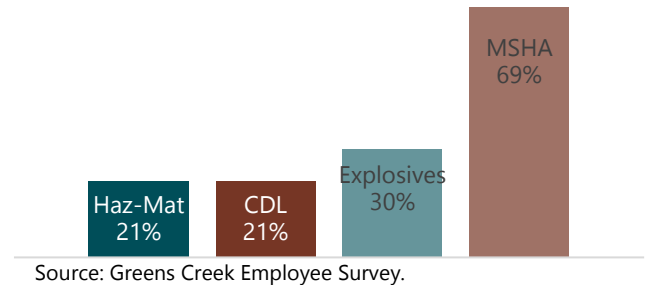
Figure 1. Length of Alaska Residency, 2016



Source: Greens Creek Employee Survey.

- Mine employees have earned variety of vocational and technical certifications and 31 percent have a college degree.
- On average, employee households made \$545 in monetary donations to local charities in 2016. In addition, households spent an average of 167 hours volunteering and donated approximately \$460 in material goods.
- Almost one-half of Juneau resident employees (49 percent) report that they would stay or attempt to stay in Southeast in the event of mine closure.

Figure 2. Certificates and Licenses, 2016



Introduction and Methodology

Introduction

Hecla Greens Creek Mining Company (Greens Creek) contracted with McDowell Group to conduct a socioeconomic impact study of the Greens Creek Mine, including an employee survey. This study analyzes the economic impacts of Greens Creek on Juneau, Southeast Alaska, and the State in 2016 and provides a profile of mine employees.

Methodology

Economic Impact Analysis

A variety of data and other information sources were used for this study. Greens Creek provided McDowell Group with employment, payroll, vendor spending, tax payments, and charitable giving data. McDowell Group also obtained data from the Alaska Department of Labor and Workforce Development and the City and Borough of Juneau.

IMPLAN™, a computer model for estimating the economic impact of industry activity, supplemented the study team's assessment of Greens Creek's multiplier effect on regional and statewide economies.

For consistent analysis, data was adjusted for inflation using the Anchorage Consumer Price Index 2016. Unless stated, all dollars are adjusted to 2016 dollars.

Mine Employee Survey

The employee survey was administered during a series of training meetings held in Juneau in February 2017. Contract workers' responses have been excluded from the employee profile.

The survey was designed by McDowell Group with input from Greens Creek representatives.

Greens Creek Operations

History

Greens Creek Mine began production in 1989 under the operation of Kennecott Minerals Company. Hecla Mining Company “Hecla” has long held an interest in the mine, and in 2008 acquired the remaining interest in the mine. Located on Admiralty Island southwest of Juneau, Greens Creek is the largest silver mine in the United States and one of the largest in the world.

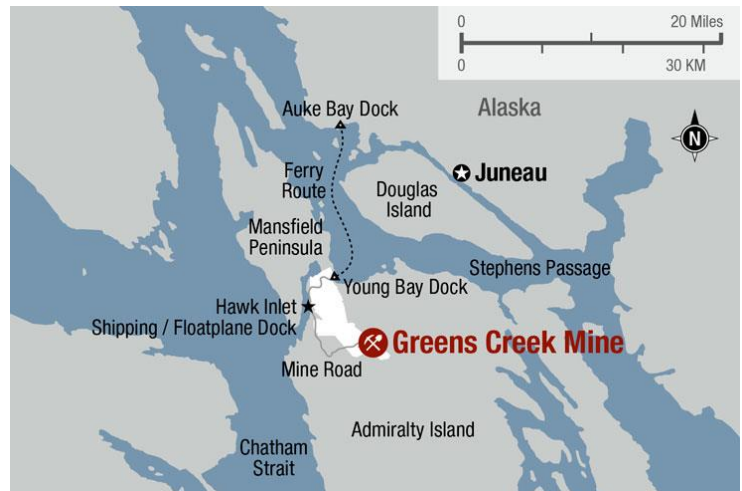
Overview

Greens Creek is an underground silver, gold, zinc, and lead mine, which operates on 23 square miles of land, including land leased from the U.S. Forest Service. The mine runs 24 hours per day, 365 days per year. Mine facilities include the underground mine, a dry stacked tailings facility, a ship-loading facility, camp facilities, and a ferry dock.¹ The current proven and probable silver reserves of the mine are 89 million ounces, and the estimated remaining life of the mine is 10 years.²

Production

In 2016, Greens Creek produced 9 million ounces of silver, the highest year of silver production since Hecla became the sole owner of the mine.² The mine also produced 53,900 ounces of gold, 57,700 tons of zinc, and 20,500 tons of lead.

Figure 3. Map of Greens Creek Mine Operations



Source: Hecla Mining Company.

Table 2. Greens Creek Production, 2016

Annual Production	
Silver (ounces)	9,253,543
Gold (ounces)	53,912
Zinc (tons)	57,729
Lead (tons)	20,596

Source: Hecla Greens Creek Mining Company.

¹ <http://www.hecla-mining.com/greens-creek/>. Accessed May 22, 2017.

² Hecla Mining Company, *2016 Annual Report*, February 2017.

Employment and Payroll

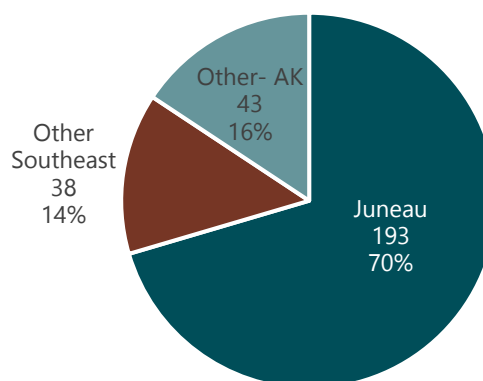
Employment

Greens Creek directly employed 414 people in 2016. Two out of three (66 percent) were Alaska residents. With 193 Juneau residents, the mine is Juneau’s largest private sector employer in terms of annual average, full-time employment and total annual wages.³

Figure 4. Greens Creek Alaska Employment by Place of Residence, 2016

Of the 274 Alaska residents,

- 193 (70 percent) lived in Juneau,
- 38 (14 percent) in other Southeast communities,
- and 43 (16 percent) in other Alaska communities.



Source: Hecla Greens Creek Mining Company.

Average annual employment grew by 34 percent between 2007 and 2016, climbing from 308 to 414 jobs. Alaska resident employment grew from 255 to 274 during that period. With the Alaska labor force unable to fully meet the mine’s needs, the number of workers living outside of Alaska increased from 53 to 140.

Table 3. Greens Creek Employment by Residence Location, 2007 and 2016

Residence	Employment 2007	Employment 2016
Juneau	195	193
Rest of Alaska	60	81
Total Alaska Employment	255	274
Outside Alaska	53	140
Total	308	414

Source: Hecla Greens Creek Mining Company and McDowell Group, *Socioeconomic Impacts of the Greens Creek Mine*, Conducted for Hecla Greens Creek Mining Company. June 2008.

Direct employment figures do not include contract employees. In 2016, employees of 17 contractors provided a range of services, such as construction, drilling, and camp support services.

³ City and Borough of Juneau, *Comprehensive Annual Financial Report- Fiscal Year Ended June 30, 2016*. 2016.

Payroll

Greens Creek paid \$51 million in wages in 2016, an average of \$123,000 per employee. Wages paid to Juneau residents were similar, while wages for other Southeast residents averaged \$145,260.

Table 4. Greens Creek Total Wages, Employment, and Average Annual Wages by Employee Place of Residence, 2016

Residence	Wages (\$ millions)	Employment	Average Annual Wages
Juneau	\$23.7	193	\$122,870
Other Southeast	\$5.5	38	\$145,260
Other Alaska	\$4.5	43	\$104,211
Total Alaska	\$33.7	274	\$123,047
Outside Alaska	\$17.1	140	\$122,461
Total	\$50.9	414	\$122,849

Source: Hecla Greens Creek Mining Company.

Greens Creek wages are more than double the economy-wide average in Juneau. In 2016, annual wages for all Juneau workers averaged \$51,720.⁴ For comparison, workers employed by the federal government (the sector with the second highest wages) made on average \$94,200 per year. Workers in industries such as construction and telecommunications made on average \$69,000 per year, while those in retail trade and accommodation and food service sectors made \$30,200 and \$20,500, respectively.

Table 5. Juneau Average Annual Wages by Industry Sector, 2016

	Average Annual Wage
Greens Creek Mine Employees	\$122,849
Juneau Economy-wide	\$51,720
Federal Government	\$94,224
Telecommunications	\$69,780
Construction	\$69,480
State Government	\$62,796
Private Sector Employees (avg)	\$44,364
Health Care and Social Assistance	\$42,924
Retail Trade	\$30,288
Accommodation and Food Service	\$20,508

Source: Hecla Greens Creek Mining Company and Alaska Department of Labor and Workforce Development.

Total wage growth of 50 percent, in inflation-adjusted dollars, between 2007 and 2016 is consistent with the employment growth experienced over the last decade. Wages paid to Alaska residents grew from about \$27 to \$34 million.

⁴ Alaska Department of Labor and Workforce Development- Research and Analysis, *Preliminary Annual Employment and Wages January-December 2016*, Accessed May 2017.

**Table 6. Greens Creek Wages by Employee Place of Residence, 2007 and 2016
(wages in millions 2016 dollars)**

Residence	Total Wages 2007	Total Wages 2016
Juneau	\$20.7	\$23.7
Rest of Alaska	\$6.2	\$10.0
Total Alaska Wages	\$26.9	\$33.7
Outside Alaska	\$7.0	\$17.1
Total	\$33.9	\$50.9

Source: Hecla Greens Creek Mining Company.

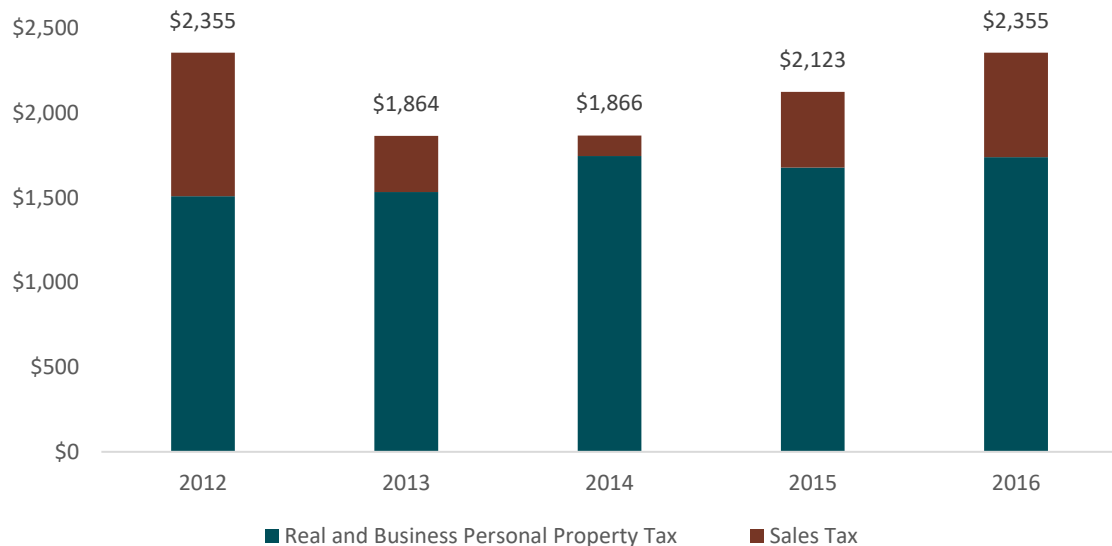
In addition to wages, Greens Creek paid \$19 million in employee health benefits and pension plan contributions in 2016.

Taxes

Local Taxes

The City and Borough of Juneau (CBJ) received \$2.4 million in total property tax and sales tax payments from Greens Creek in 2016, an 11 percent increase from 2015.

**Figure 5. City and Borough of Juneau Taxes, 2012-2016
(in thousands of 2016 dollars)**



Source: Hecla Greens Creek Mining Company.

PROPERTY TAX

Property taxes are one of two main contributors to CBJ's general government revenue. Property taxes levied against real and business personal property fund general operations including public safety, education, and community development.

In 2016, Greens Creek paid \$1.7 million in property taxes associated with real and business personal property assessments. The mine has long had the highest taxable assessed property value in Juneau, with an assessment

of \$217 million in fiscal year 2016.⁵ Included in this total is the \$120.8 million assessed value of mine property on Admiralty Island, including both land and structure value.⁶ The remaining assessed value is attributed to business personal property such as mining equipment. Coeur Alaska, operator of the Kensington Mine, has the second highest property valuation in Juneau.

Table 7. Top Property Tax Payers in Juneau, FY2016

Taxpayer	Taxable Assessed Value (in millions)	Percent of CBJ Total Taxable Assessed Value
Hecla Greens Creek Mining	\$216.6	4.6
Coeur Alaska	\$156.1	3.4
Alaska Electric Light & Power	\$92.4	2.0
Fred Meyer of Alaska Inc.	\$20.0	0.4
Glacier Village Supermarket Inc.	\$18.1	0.4

Source: City and Borough of Juneau Assessor's Office.

Property taxes paid by Greens Creek increased over the past five years, with a 22 percent real increase from 2012.

SALES TAX

Sales taxes contribute to CBJ's general government revenue, and are deposited in the Sales Tax Special Revenue Fund, which funds general government operations, debt service, and capital projects. Included in the current 5 percent sales tax is a temporary 1 percent tax supporting capital improvement projects such as expansion of the Juneau Arts and Culture Center and creation of a child and adolescent mental health facility at Bartlett Regional Hospital.

Based on goods and services purchased in 2016, Greens Creek paid an estimated \$616,000 in sales taxes.

State Tax

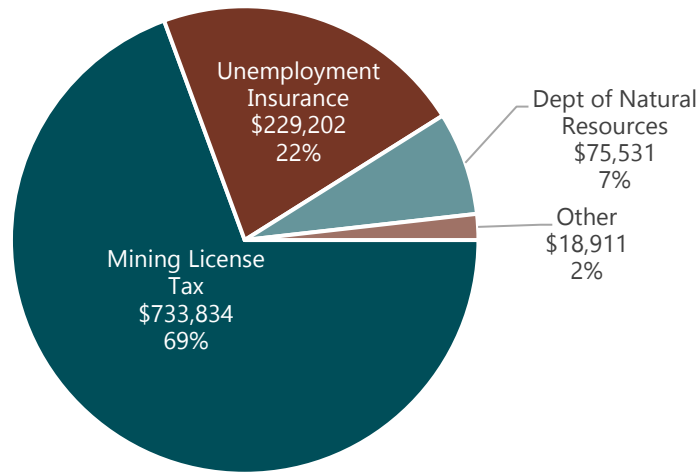
Payments to the State of Alaska totaled \$1.1 million in 2016. Three primary categories of payment include:

- **Mining License Tax**, a graduated tax levied on net income of mining operations.
- **Unemployment Insurance Payments**, based on employment and average annual wages in Alaska.
- **Miscellaneous payments** to specific departments such as the Alaska Department of Natural Resources.

⁵ City and Borough of Juneau, *Comprehensive Annual Financial Report- Fiscal Year Ended June 30, 2016*. 2016.

⁶ <http://www.juneau.org/assessordata/sqlassessor.php>. Accessed May 18, 2016.

Figure 6. State of Alaska Payments, 2016



Source: Hecla Greens Creek Mining Company.

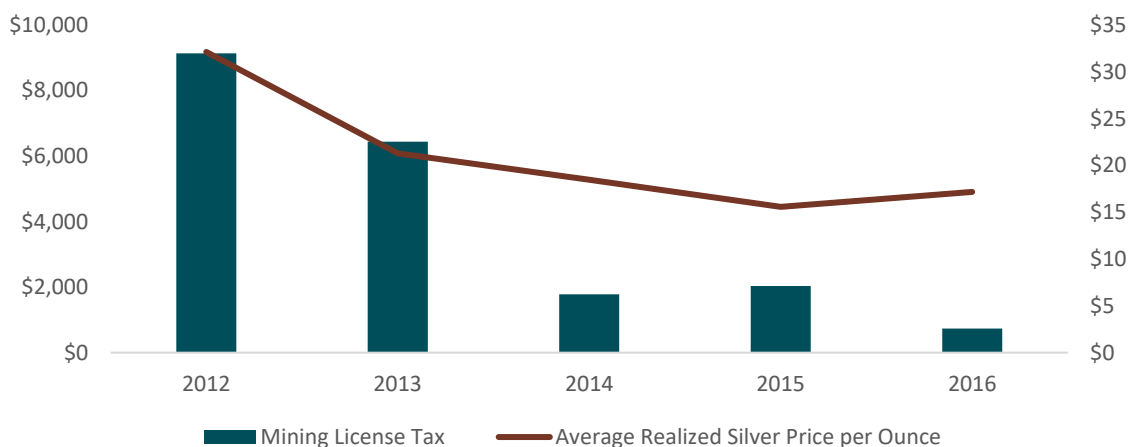
Greens Creek is also subject to a State corporate income tax. As a multistate corporation, the taxable liability is based on federal taxable income and an apportionment factor which accounts for property, payroll, and sales inside and outside Alaska. While Greens Creek did not incur a liability in 2016, the mine paid an average of \$127,074 in corporate income tax annually between 2012 and 2016.

MINING LICENSE TAX

Annual Mining License Taxes are paid to the State of Alaska based on the net income of mining operations in the state. The state deposits revenue from the tax into the General Fund, which is spent on a variety of state services, programs, and projects, including K-12 education, Medicaid, and the University of Alaska, along with general state agency operations.

In 2016 Greens Creek paid \$734,000 in Mining License Tax, Tax payments are affected by metal prices, which can be highly variable. As shown in the chart below, silver prices declined in recent years, as did tax payments.

Figure 7. Mining License Tax and Average Realized Silver Price per Ounce, 2012-2016 (tax in millions of 2016 dollars)



Source: Hecla Greens Creek Mining Company.

Mine Spending

Spending with Alaska vendors in support of mine operations and capital projects totaled \$126 million in 2016. Due to the specialized nature of the mining industry, many of the goods and services required by Greens Creek are unavailable locally. However, Greens Creek spent \$58 million in 2016 on goods and services with 49 businesses that have a Juneau presence in 2016.

Table 8. Mine Spending by Vendor Location, 2016

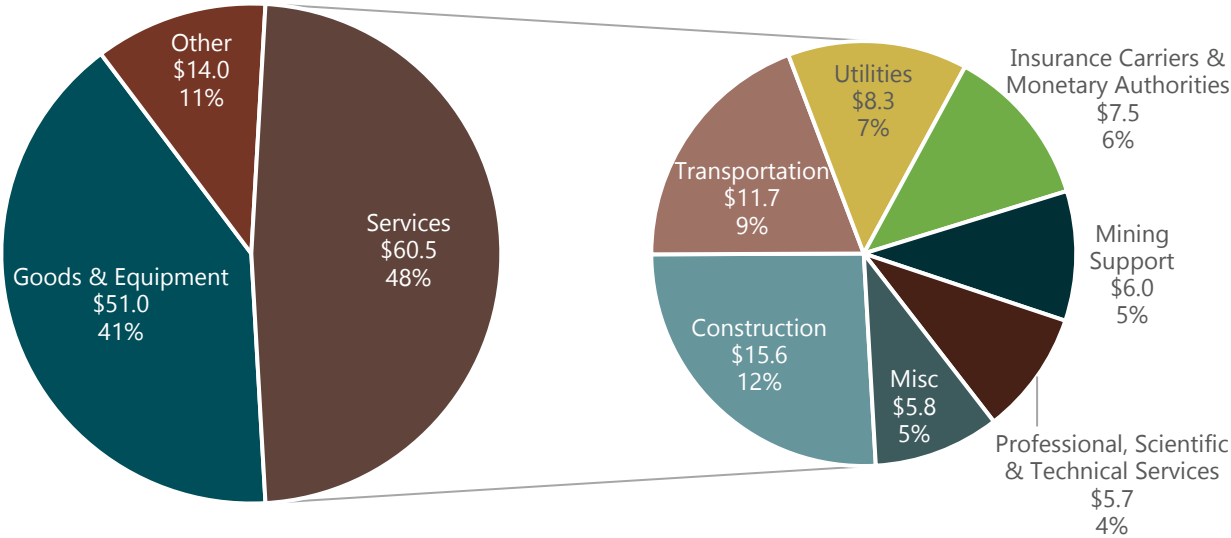
	Number of Vendors	Mine Spending (\$millions)	Percent of Total Spending
Juneau businesses	49	\$58.4	46
All Alaska businesses	84	\$75.3	60
Total	229	\$125.9	

Source: Hecla Greens Creek Mining Company.

Total expenses include:

- 48 percent (\$61 million) spent on services,
- 41 percent (\$51 million) on material goods and equipment, and
- 11 percent (\$14 million) on miscellaneous spending including leases.

Figure 8. Mine Spending by Expense Type, 2016 (in millions)



Source: Hecla Greens Creek Mining Company.

A significant amount was spent with construction companies. These expenses include capital projects such as expansion of the tailings facility. Expansion began in 2015 after a lengthy permitting process. It will accommodate an additional 10 to 15 years of tailings disposal, prolonging the mine’s life. The construction

project has cumulative estimated cost of \$44 million and will span 3 years.⁷ In 2016, an estimated \$14 million was devoted to the project.⁸

Transportation expenses account for another 9 percent of the mine's non-labor spending. Greens Creek contracts with Four Seasons Marine Services to provide marine transport of employees and materials to the mine site. Employees are transported from the Auke Bay ferry terminal to the dock on Admiralty Island. The mine is also reliant on ocean freight services to transport metals produced at the mine. Products are loaded at the mine's ship loading facility on Hawk Inlet and shipped directly to customers, located primarily in Asia and Canada.⁹

Material purchases include significant spending on mining equipment and parts, ground support bolts, diesel fuel, and explosives. While 94 percent of the electricity used at the mine was hydroelectric power, its interruptible contract with AEL&P necessitates the mine maintain on-site diesel generators to support operations when hydroelectricity is not available. Diesel fuel costs decreased from an estimated \$4.7 million in 2015 to \$3.3 million in 2016.⁸

Indirect Economic Impacts

In addition to direct employment of 414 people in 2016, mine operations have a larger impact on the Juneau and Alaska economies. Employment and wage impacts occur at three levels:

- **Direct impacts** include Greens Creek's direct employment and wages,
- **Indirect impacts** include jobs and wages generated by spending with vendors, and
- **Induced impacts** include jobs and wages generated when Greens Creek employees and contracted employees spend their wages anywhere in the Alaska economy.

Based on analysis of Greens Creek multiplier effects using IMPLANTM and an analysis of vendor data provided by the mine, indirect, and induced impacts related to mine operations totaled an estimated 450 jobs in Juneau. These jobs resulted in an estimated \$19 million in indirect and induced wages generated in Juneau.

Greens Creek spending in other Alaska communities also created indirect and induced impacts in the Alaska economy. Indirect and induced impacts totaled an estimated 560 jobs and \$25 million in wages in Alaska, including Juneau.

Including direct employment, Juneau employment (direct, indirect, induced) from Greens Creek mine operations totaled 865 jobs and generated an estimated \$70 million in wages in 2016.

⁷ Alaska Journal of Commerce, *Greens Creek, Kensington Mines Expanding Production*, July 22, 2015.

⁸ <http://ir.hecla-mining.com/Cache/1500087228.PDF?O=PDF&T=&Y=&D=&FID=1500087228&iid=4130678>. Access May 19, 2017.

⁹ Hecla Mining Company, *2016 Annual Report*, February 2016.

Table 9. Greens Creek-related Economic Impacts in Juneau and Alaska, 2016 (wages in millions)

	Juneau		Alaska	
	Employment	Wages	Employment	Wages
Direct	414	\$50.9	414	\$50.9
Indirect & Induced	450	\$18.6	560	\$25.0
Total	865	\$69.5	975	\$75.9

Source: Hecla Greens Creek Mining Company and McDowell Group estimates.

Construction, camp support services, and transportation services are significant components of the mine’s indirect employment and wage impacts. Construction employment in 2016 was above average, as a result of tailings disposal facility development.

Community Contributions

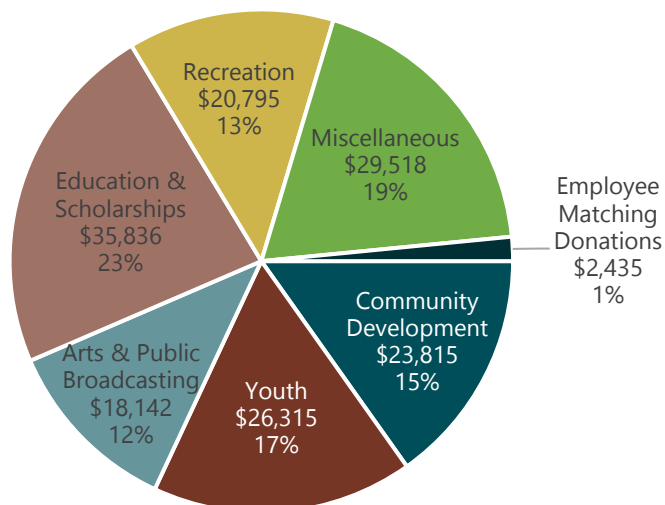
Charitable Giving

In 2016, Greens Creek made \$154,400 in charitable contributions to 96 organizations. This amount included \$2,400 donated through Greens Creek’s employee donation matching program. For more information about employee charitable giving, see the Employee Charitable Activities section on page 21.

Hecla’s charitable giving program prioritizes the “social, environmental, and economic sustainability and development” of communities where they operate. In support of these goals, Greens Creek provided charitable donations to a wide variety of organizations in 2016, including:

- Arts and Public Broadcasting (Juneau Dance Unlimited, Perseverance Theatre, and KTOO),
- Community Development (Angoon Senior Center, Treadwell Mine Preservation),
- Education and Scholarships (Chatham School District, University of Alaska Foundation),
- Recreation (Angoon Derby, Gold Rush Days, Trail Mix Inc.), and
- Youth (Alaska Business Week, Discovery Southeast, Juneau Youth Football League, Juneau Ski Club).

Figure 9. Charitable Contributions, by Organization Category, Greens Creek Mining Company, 2016



Source: Hecla Greens Creek Mining Company.

Education and scholarship funding focuses on partnership with the University of Alaska. In 2011, Greens Creek donated \$300,000 to the University of Alaska Foundation to create the Career Pathways in Mining Program at the University of Alaska Southeast (UAS) Center for Mine Training. By providing scholarships, mining courses, tools, and equipment, the program is designed to build a local mining workforce in Southeast Alaska. The program includes high school student engagement, a two-week mining academy resulting in students earning a Mine Safety and Health Administration (MSHA) certificate, and job shadowing opportunities. Continued support of the program included another \$300,000 donation from Greens Creek in 2014.

Greens Creek also supports the University of Alaska with yearly contributions. In 2013, Greens Creek launched another annual scholarship to provide funding to students in the Environmental Science program at UAS. In 2016, Greens Creek donated \$17,500 to the UA Foundation and offered scholarships for students enrolled at the University of Alaska Anchorage (UAA) and the University of Alaska Fairbanks (UAF), in addition to scholarships and programs at UAS.

Greens Creek donated more than \$137,000 to 90 organizations based in Alaska, including \$48,350 to Juneau-based organizations.

Table 10. Charitable Donations by Organization Location, Greens Creek Mining Company, 2016

	Charitable Organization	Charitable Donations	Percent of Donations
Juneau	51	\$48,350	31.3
Other Southeast	18	\$52,690	34.1
Other Alaska	21	\$36,360	23.5
Total Alaska Charitable Giving	90	\$137,400	89.0
Outside Alaska	6	\$17,000	11.0
Total	96	\$154,400	100%

Source: Hecla Greens Creek Mining Company.

Alaska Electric Light and Power

Greens Creek is Alaska Electric Light and Power’s (AEL&P) largest interruptible power customer, accounting for 87 percent of interruptible power sales in 2016.¹⁰ In exchange for lower rates, interruptible customers agree to have service interrupted in an emergency or when the utility does not have capacity to serve all customers. Interruptible customers allow AEL&P to fully utilize available water for hydroelectric generation, and largely avoid running their costly diesel generators except during emergency situations.

In the long run, sales to Greens Creek mine also help the utility cost-effectively build new hydro capacity to serve Juneau’s growing load. From 1996 to 2006, AEL&P pursued permitting and licensing for the Lake Dorothy hydroelectric project and negotiated an interruptible agreement with Greens Creek, then under Kennecott ownership.¹¹ In the initial phase, Greens Creek agreed to purchase surplus energy from Lake Dorothy. As demand from other Juneau customers grew, the mine would become an interruptible customer. AEL&P has

¹⁰ Alaska Electric Light and Power Company, *FERC Financial Report*, April 2017.

¹¹ Alaska Electric Light and Power Company, *Letter to the City and Borough of Juneau*, February 8, 2006. https://www.juneau.org/assembly/agendas/2006/2006-02-13/Res2346-AELP_re_Lake_Dorothy_Hydro.pdf. Accessed May 20, 2017.

noted that “The feasibility of Lake Dorothy was dependent on having a market for the surplus energy available in the early years, resulting in a lower cost to firm customers.”¹²

Revenue generated from the sale of power to Greens Creek also directly benefits AEL&P customers through a cost of power adjustment (COPA). When AEL&P receives monthly revenue from Greens Creek in excess of \$554,480, the amount above this threshold becomes a credit to the COPA account, which then reduces each customer’s monthly bill. In October 2016, the Regulatory Commission of Alaska approved an interim rate increase request which increased the monthly revenue limit to \$797,473 per month.¹³ Greens Creek’s status as an interruptible power customer contributes to AEL&P having the lowest residential utility costs in Alaska.¹⁴

¹² Timothy D. McLeod, *Pre-filed Direct Testimony of Timothy D. McLeod*, September 2016.

¹³ Regulatory Commission of Alaska, *Order Suspending Tariff Filing*, October 2016.

¹⁴ Alaska Electric Light and Power Company, *Revenue Requirement Study*, September 2016.

The following employee profile was developed from responses to the 2016 Greens Creek Mine Employee survey. Some tables may not equal to 100 percent due to rounding.

Gender and Age

The majority of Greens Creek employees are male (96 percent). The average age of employees is 44.

Table 11. Employee Age, 2016

Age	% of Total
18-24	5%
25-34	24
35-44	22
45-54	25
55+	24
Average age	44 years old

Employee Residence

Seven in ten respondents (69 percent) are Alaska residents. One half of survey respondents (49 percent) reside in Juneau, another 9 percent reside in other Southeast Alaska communities, and 11 percent live in other Alaskan communities outside of Southeast Alaska.

Table 12. Employee Residence, 2016

	% of Total
Total Alaskan employment	69%
Juneau	49
Other Southeast	9
Other Alaska	11
Outside Alaska employment	31

The majority of employees who live in Alaska are longtime residents, with 65 percent of resident employees having lived in Alaska for more than 15 years. On average, Alaskan employees of Greens Creek have lived in Alaska for 23 years.

Greens Creek employees are a stable segment of the population in Alaska communities. Three-quarters (72 percent) have lived in their current Alaska community for five years or longer, and nearly half (44 percent) have lived in their community for more than 15 years. On average, employees have lived in their community for 16 years.

Table 13. Length of Residency in Current Community, 2016

	% of Base n=275
Less than 5 years	28%
5-10 years	28
Over 15 years	44
Average number of years	16 years

Employment

Two in five employees (41 percent) began working at Greens Creek less than five years ago. Another 28 percent have worked at Greens Creek between five and nine years. While the average length of employment for all Greens Creek employees is 8.4 years, one-third of employees (31 percent) have worked for Greens Creek ten or more years.

Table 14. Employee Tenure, 2016

	% of Total
1-4 years	41%
5-9 years	28
10 or more years	31
Average number of years	8 years

Almost all employees (97 percent) report that Greens Creek is their only place of employment. Of those who did report other employment, 64 percent are employed at one additional job and the remaining 36 percent at two additional jobs.

Income

Nearly one-quarter of employees (23 percent) report earning between \$100,000 and \$114,999 in mine income. The majority earn \$100,000 or more (65 percent).

Table 15. Annual Mine Income, 2016

	% of Total
Less than \$40,000	3%
\$40,000-\$54,999	1
\$55,000-\$69,999	3
\$70,000-\$84,999	7
\$85,000-\$99,999	20
\$100,000-\$114,999	23
\$115,000-\$129,999	20
\$130,000 or more	22

Half of employees (57 percent) report that at least one other person in their household earns income from work-related activity. While employees living in Juneau and other Southeast communities report nearly identical household size to other employees, these employees had lower rates of single-income households (36 and 38 percent, respectively).

One-half (51 percent) report a total household income between \$100,000 and \$150,000, with an average annual income of \$129,100 per household. Juneau and other Southeast resident employees report similar incomes with average incomes of \$130,100 and \$128,500, respectively.

Table 16. Annual Household Income, 2016

	% of Total
Less than \$40,000	1%
\$40,000-\$49,999	1
\$50,000-\$59,999	1
\$60,000-\$74,999	4
\$75,000-\$99,999	13
\$100,000-\$150,000	51
Over \$150,000	28
Average annual household income	\$129,100

Households

Three out of four employees (74 percent) are married or living with a partner. Five percent of employees have a spouse or partner also works for Greens Creek Mine.

Table 17. Employee Marital Status, 2016

	% of Total
Married/living together	74%
Divorce/separated	13
Never married	12

Greens Creek mine employees report an average household size of 3 people. One-half (55 percent) have a household of three or more people and another 32 percent have two people. Juneau and other Southeast employees report similar household sizes.

Table 18. Employee Household Size, 2016

	% of Total
One person	13%
Two people	32
Three or more people	55
Three people	24
Four people	17
Five or more people	14
Average household size	3 people

School Attendance

Of all Greens Creek employees, 45 percent report having at least one household member under 18 years old. In Juneau (55 percent) and all Southeast (52 percent), households are slightly more likely to include members under 18.

In Southeast, Greens Creek households collectively account for 159 school-aged children, including 144 in Juneau schools. Based on the State of Alaska’s allocation of \$5,880 per student to local school districts, Greens Creek employees’ children represented an estimated \$776,000 in State funding for the Juneau School District in 2016.¹⁵

Table 19. Greens Creek Household Students School Attendance, Juneau and Southeast, 2016

	Juneau School Attendance	Southeast School Attendance
Number of public school students	132	143
Number of private school students	6	6
Number of home school students	6	10
Total number of students	144	159

Housing

Nearly three out of four Greens Creek employees (72 percent) are home owners, while the remaining 27 percent are renters. Home ownership rates are slightly lower for employees living in Juneau (67 percent) and in all of Southeast (69 percent).

Table 20. Employee Housing Status, 2016

	% of Total
Own	72%
Rent	27
Some other arrangement	1

The average Greens Creek home-owner reports a home value of \$309,179. Greens Creek employees who own a home in Juneau report average home values of \$364,656, which is effectively the same as the average Juneau single-family home value in 2016. According to the CBJ Assessor, the average home value for a single-family detached home in Juneau was \$360,100 in 2016 and the average for a condo was \$205,800.¹⁶

Southeast residents (excluding Juneau) reported average home values of \$240,316.

With an average home value of \$364,656 and Juneau employment of 133, Greens Creek employees living in Juneau own approximately \$48.5 million in residential real estate. Assuming this residential real estate is within the “Roaded Service” and “City Fire/Rescue” areas, City and Borough of Juneau property tax revenues associated with this property totaled approximately \$521,000 in 2016 (based on the 2016 CBJ real property tax rate of 10.76 mills).¹⁷

¹⁵ https://education.alaska.gov/schoolfinance/pdf/base_allocation_chart.pdf. Accessed June 2, 2017.

¹⁶ Juneau Economic Development Council, *Juneau & Southeast Alaska Economic Indicators 2016*, September 2016.

¹⁷ City and Borough of Juneau- Finance Department, *Fiscal Year 2016 Biennial Budget*, June 2015.

Table 21. Average Value of Employee Homes Among Home-Owners, 2016

	Average Value
All Greens Creek employees	\$309,179
Juneau Employees	\$364,656
Other Southeast Alaska employees	\$240,316
Other Alaska employees	\$308,857

Of employees who rent their current residence, the average monthly rent payment is \$1,282. Juneau residents who rent pay on average 9 percent more, averaging \$1,403 in monthly rent. For comparison, the average monthly rent for a single-family residence in Juneau in 2016 was \$1,801 and the average for an apartment was \$1,286, both adjusted to include utilities.¹⁸ Other Southeast employees pay on average 10 percent less than all other employees who rent. Seven out of ten employees (72 percent) who rent report that utilities are not included in their monthly rent payment.

Table 22. Average Rent Payment Among Renters, 2016

	Average Rent
All Greens Creek employees	\$1,282
Juneau Employees	\$1,403
Other Southeast Alaska employees	\$1,148
Other Alaska employees	\$1,209

Education and Training

Three in ten (31 percent) of Greens Creek employees have a college degree. One-fifth (19 percent) hold a bachelor's degree, including 5 percent with a post-graduate degree. Employees in Juneau and the rest of Southeast are more likely to have a college degree (40 percent and 37 percent, respectively).

Table 23. Employee Highest Level of Education, 2016

Category	% of Total
College degree	31%
Associate's degree	12
Bachelor's degree	14
Graduate/professional degree	5
Some college, no degree	24
High school graduate	40
Less than high school diploma	1

Most Greens Creek employees have one or more vocational or technical certifications.

¹⁸ Juneau Economic Development Council, *Juneau & Southeast Alaska Economic Indicators 2016*, September 2016.

Table 24. Certificates and Licenses, 2016

	% of Total
MSHA	69%
Explosives	30
CDL	21
Haz-Mat	21
Heavy equipment operator	16
EMT/ETT	16
Welding technology	14
Construction machinery and/or diesel engine technology (i.e. mechanic)	13
Industrial electricity	6
Facility maintenance and operations	4
Other certificates or licenses	11
No certificate or license	8

Charitable Activities

One-half of employee households reported making a charitable financial contribution in 2016. On average, Greens Creek employee households made \$545 in charitable contributions. Households in Juneau on average donated more, with an average reported donation of \$649.

When asked *"To which organizations in Alaska do you financially contribute?"* employees reported donations to a range of social service, religious, youth, community, educations, and sports organizations.

Table 25. Household Charitable Financial Contributions in Alaska, 2016

	% of Total
Zero	32%
Less than \$100	5
\$100-\$249	10
\$250-\$499	10
\$500-\$749	7
\$750-\$999	4
\$1,000-\$2,000	8
Over \$2,000	8
Don't know	15
Average total donations	\$545
Average Juneau donations	\$649

In addition to their financial contributions, Greens Creek employees donate their time to local charitable organizations. In 2016, 31 percent of employees reported donating time. Juneau and all Southeast households report higher participation in volunteering, with 41 percent of both groups reporting that household members spent time volunteering in 2016. The average household spent 167 hours volunteering in 2016, lower than the reported volunteer hours reported by Juneau households (190 hours).

Table 26. Employee Household Volunteer Hours, 2016

	Average # of Hours per Year
All employees	167
Juneau employees	190
Other Southeast Alaska employees	61
Other Alaska employees	156

The average Greens Creek household also reported donating goods valued at \$464 to local charities in 2016.

Table 27. Employee Household Donated Goods, 2016

	Average Value
All employees	\$464
Juneau employees	\$393
Other Southeast Alaska employees	\$583
Other Alaska employees	\$750

Mining Closure Impacts

Greens Creek employees were asked about their intentions in the event of mine closure. Of Juneau resident employees, almost one-half (49 percent) responded that they would stay or attempt to stay in Southeast. One in four (26 percent) responded that they would definitely stay in Southeast. Nearly one in three (32 percent) intend to move from Southeast, either temporarily or permanently, if the mine closed. The remaining 17 percent did not know what they would do in the event of mine closure.

Residents of all Southeast communities (54 percent) were more likely to respond that they would remain or attempt to remain in Southeast upon closure.

Approximately 63 of the 234 Greens Creek employees living in Southeast would leave the region, at least temporarily, in the event of mine closure. Nearly all of these employees (62) are Juneau residents.

Table 28. At the end of mine operations, what will be your most likely course of action?

Category	Juneau Employees % of Base n=196	Southeast Employees % of Base n=230
Definitely remain in Southeast	26%	31%
Attempt to remain in Southeast	23	23
Move from Southeast permanently	30	26
Move from Southeast temporarily	2	2
Don't know	17	17

Employees who would remain or attempt to remain in Southeast following mine closure were asked about future employment plans following closure. Almost one-half (47 percent) of Juneau resident employees who would remain in Southeast following mine closure responded that they would find a new mining job. Another one in five (19 percent) would find employment in a different sector; 17 percent would retire. Fifteen percent were unsure what they would do. Results are similar for all Southeast employees.

Table 29. What are you likely to do if you stay in Southeast?

Base: Juneau residents who would remain in Southeast

	% of Base n=96
Find a new mining jobs	47%
Find a new job not in mining	19
Retire	17
Go back to school	2
Other	1
Not sure	15

Of Juneau-based employees who would leave Southeast, one-third (33 percent) would leave immediately after mine closure, while another one in four (28 percent) would leave within six months of closure. One in five (20 percent) would leave Southeast before closure of the mine. Seven percent were unsure when they would leave. Results are similar for all Southeast employees.

Table 30. How quickly would you leave Southeast Alaska?

Base: Juneau residents likely to leave Southeast

	% of Base n=61
Immediately after closure	33%
Within six months of closure	28
Before closure	20
Within six months to a year of closure	8
More than twelve months after closure	5
Not sure	7