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October 19, 2021

Email to peter.hays@state.co.us

Division of Reclamation, Mining and Safety
c/o Peter Hays
1313 Sherman Street, Room 215
Denver, CO 80203

Re: AFS Walstrum Quarry Economic Report

Dear Peter:

Please find the enclosed report that documents and quantifies the economic impact of the Albert Frei & Sons (AFS) Walstrum Quarry. Please include this report as a supplement to our Walstrum Spur Amendment application submitted in April 2021. AFS feels the Walstrum Quarry and Spur Amendment are a part of the State's natural resources. AFS believes that our proposed amended reclamation plan is beneficial to the people of the state and meets the intent of the Legislative Declaration below:

Legislative Declaration in Section 34-32.5-102 of The Colorado Land Reclamation Act for the Extraction of Construction Materials States That:

(1) It is declared to be the policy of this state that the extraction of construction materials and the reclamation of land affected by such extraction are both necessary and proper activities. It is further declared to be the policy of this state that both such activities should be and are compatible. It is the intent of the general assembly by the enactment of this article to foster and encourage the development of an economically sound and stable mining and construction materials industry and to encourage the orderly development of the state's natural resources, while requiring those persons involved in mining operations to reclaim land affected by such operations so that the affected land may be put to a use beneficial to the people of this state. It is the further intent of the general assembly by the enactment of this article to conserve natural resources, to aid in the protection of wildlife and aquatic resources, to establish agricultural, recreational, residential, and industrial sites, and to protect and promote the health, safety, and general welfare of the people of this state.

If you have any questions, please contact me at 303-913-6583.

Sincerely,

A handwritten signature in blue ink that reads "Joel Bolduc".

Joel Bolduc
Land and Environment Manager

Cc: Russ Means, Jared Ebert

Encl: September 2, 2020, Economic Report



Economic, Fiscal, and Community Contributions of the Walstrum Quarry

FINAL REPORT

Final Report

August 31, 2020

Economic, Fiscal, and Community Contributions of the Walstrum Quarry

Prepared for

Albert Frei & Sons LLC

Prepared by

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1. Executive Summary

Albert Frei & Sons, Inc. (AFS), a local supplier of high-quality aggregate, is proposing to amend its operating permit to extend the productive life of the existing Walstrum Quarry (the Quarry) in Clear Creek County (CCC). The permit amendment, referred to as the Walstrum Spur Amendment Project (Spur Amendment) would allow AFS to maintain their quarrying and processing operations in Clear Creek County and continue providing the surrounding regional economy with high quality aggregate products. To support this effort, BBC Research & Consulting (BBC) was retained by AFS to document the economic, fiscal, and community contributions of the Walstrum Quarry and the proposed Spur Amendment to Clear Creek County and the State of Colorado.

The Walstrum Quarry is one of only four large-scale sources of hard-rock aggregate in Colorado's Denver Metro Area (DMA). AFS has operated the Quarry in Clear Creek County for almost 40 years. The operations at the Quarry directly employ 72 people, with 61 employees on site and an additional 11 employees at the AFS home office. AFS also contracts directly with companies employing approximately 100 workers to haul material from the Quarry to customer sites. In addition, AFS spends approximately \$8.6 million per year on goods and services from local businesses to support its operations at the Quarry and generates tax revenues of approximately \$1.6 million for CCC to fund such County services and programs as the general fund, schools, roads & bridges, open space, library, public welfare, and the metro recreation district each year.

At the current rate of production, the Walstrum Quarry will exhaust its available resource sometime in the next 10 years. If the operations at the Quarry were to end, the loss of economic activity would reduce economic output in CCC by approximately \$23 million per year and approximately 102 jobs (combination of both direct and indirect jobs) would be lost. The County's tax receipts would also decline by more than \$1 million per year, due to the loss of sales tax and property tax revenues.

Approval of the Spur Amendment would sustain the Quarry's economic and fiscal contributions to the County's economy and government tax revenues. The Quarry's managers also anticipate making additional capital investments that would lead to an increase in efficiency and generate additional employment, sales, income, and property tax for the County if the proposed amendment is approved. More specifically, based on the analysis contained herein, this report concludes the following about the Quarry's economic, fiscal, and community contributions to CCC:

1.1 Summary of Economic Contributions.

Within Clear Creek County, operations at the Walstrum Quarry contribute:

- 102 jobs, including 61 direct jobs and 41 indirect jobs.
- \$8.8 million of annual labor income and other compensation, including \$6.3 million in direct income and \$2.5 million in indirect income; and

- \$23.2 million in annual economic output, including \$16.9 million in direct economic output and \$6.3 million in indirect economic output.

At the State level, operations at the Walstrum Quarry contribute:

- 330 jobs, including 72 direct jobs, 100 contract jobs, and 158 indirect jobs.
- \$18.3 million of annual labor income and other compensation; and
- \$40.5 million in annual economic output.

In addition to the Quarry's direct and indirect economic impacts shown above, the Quarry also supports economic activity in the State by supplying crushed stone aggregate at competitive prices. When aggregate is imported from outside of Colorado, it is sold at a higher cost to recoup the shipping expenses. The increased costs are passed on to the buyers and acts like a reduction in income as less money is available to pay employees and proprietors.

1.2 Summary of Fiscal Contributions. The Walstrum Quarry is a large, stable source of tax revenue for Clear Creek County. In the 2019 Fiscal Year, the Quarry contributed:

- \$1.6 million in property and sales tax revenues to CCC.

AFS's contribution to the County's tax revenues were allocated to:

- The County's General Fund, which received approximately \$1,291,200;
- The School District RE-1, which received approximately \$225,000;
- The Metropolitan Recreation District, which received approximately \$44,100; and
- The Emergency Services District, which received approximately \$19,300; and
- The Library District, which received approximately \$19,300.

In addition to providing a large, stable source of tax revenue for the County, AFS also places a low burden on County services to support its operations at the Walstrum Quarry. The Quarry is located on State highways so vehicle traffic on County roads is very limited. Moreover, the Quarry is on the far east side of the County, so truck traffic is primarily on Interstate-70 and Highway 6 eastbound to the DMA. The Quarry does not use municipal water or sewer services, further lowering its monetary burden on County services.

1.3 Summary of Community Contributions. AFS has a history of charitable giving to causes in Clear Creek County. Since 2015, AFS has made charitable donations through monetary gifts and product of more than \$237,800. The public benefits created by AFS's charitable giving extend beyond its direct donations since non-profit organizations often use gifts from one donor to leverage additional funding from other donors. Additionally, many of the product donations made by AFS have been used by receiving organizations to provide public goods, like trails and restored rivers and streams, that benefit the community in perpetuity.

2. Background

AFS is seeking approval of the Spur Amendment to extend the life of the Walstrum Quarry in Clear Creek County. To support its permitting effort, AFS commissioned BBC Research & Consulting (BBC) to document the economic, fiscal, and community contributions of the Walstrum Quarry and proposed Spur Amendment to Clear Creek County (CCC) and the State of Colorado. The report achieves this objective by providing estimates of the Quarry's existing contributions and the Spur Amendment's future contributions to:

- Employment;
- Labor income and benefits;
- Economic output;
- Property, sales, and other taxes; and
- Community benefits.

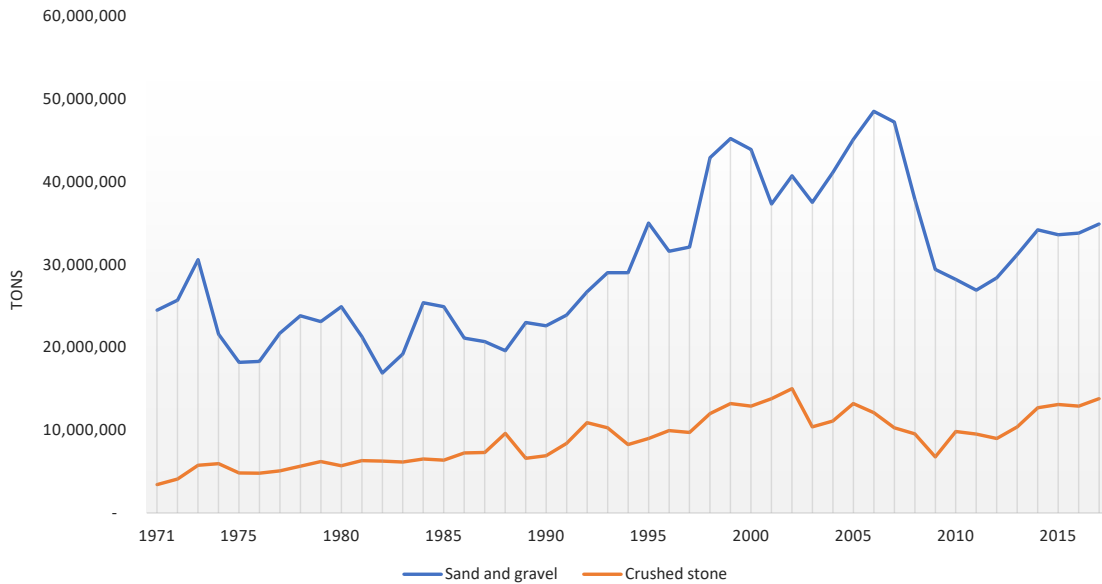
The remainder of this report discusses the regional market for aggregate, including hard-rock aggregate; reviews the history of the Walstrum Quarry, including its current operations; and discusses the importance of the Quarry and Spur Amendment and its economic, fiscal, and community contributions to Clear Creek County and the state of Colorado.

2.1 Demand for Aggregate in Colorado. The aggregate industry is an important contributor to local economies. In addition to providing jobs, economic output, and tax revenue, the industry produces the raw and finished materials that form the building blocks of roadways, public works infrastructure, homes, and commercial centers (Phoenix Center 2017). Crushed stone aggregate is also used for slope stabilization, stream restoration and streambank reinforcement, erosion control, trail construction, and other environmentally and socially beneficial projects.

In 2016, the most recent year for which data are available, the United States produced a total of 1.0 billion tons of sand and gravel and 1.4 billion tons of crushed stone (USGS 2017a,b). Colorado is consistently one of the top aggregate-producing states in the Country. Since 1970, aggregate production in the State has risen from a total of 27.9 million tons per year to more than 48.7 million tons in 2016 (Figure 1). During 2016, the State produced 34.9 million tons of sand and gravel and 13.8 million tons of crushed stone. In per capita terms, suppliers in Colorado produced about 8.4 tons of aggregate per person in 2016. As the population of the DMA continues to grow, aggregate demand will grow with it.

While demand for aggregate is growing, the supply is decreasing. Historically, large-diameter (e.g. >1 inch rock) and small-diameter aggregate (e.g. sand) have been supplied to the DMA from alluvial deposits along the banks of Front Range creeks (e.g. Clear Creek east of Golden, Boulder Creek, St Vrain Creek) and the South Platte River south of Denver (Littleton).

Figure 1.
Annual Production of Aggregate in Colorado (1971 – 2016)



Source: (USGS, 2020)

As alluvial deposits in the Denver area have been depleted, alluvial operations have moved downstream on the South Platte further north and east away from the mountains. These deposits east of Interstate 25 have less large-diameter aggregate due to their distance from the mountains. When rushing creeks burst out of the mountains on to the flatter plains, the stream velocity decreases and the carried load settles out. Generally, the larger rocks settle out first, then smaller rocks, then sand, and then other finer materials such as clay. Whereas deposits near the mountains might contain 40% rock greater than 1-inch diameter, the deposits along the South Platte near Fort Lupton often contain <10% rock greater than 1-inch diameter. As the current deposits exhaust their available sand and gravel supplies, production will continue to move east to deposits that yield increasingly smaller diameter material (CSSGA 2018).

As a result of the change in the sand and gravel supply towards smaller-diameter products, demand for large-diameter aggregate products from the quarries in the foothills such as Walstrum Quarry have become more important. Today, rip rap and boulders are almost entirely supplied by quarries and products such as 1 ½-inch rock are shifting gradually from the sand and gravel pits to the quarries. Even now, local supply for crushed stone aggregates cannot meet local demand at current market prices. As a result, crushed stone aggregates are being imported to the DMA and I-25 corridor by truck and train - at great expense - to meet existing demand (CSSGA, 2018).

The increased demand and limited supply of crushed stone aggregate has made existing supplies more valuable. Between 2010 and 2016, the average price per ton of crushed stone increased by 33 percent, while the average price per ton of sand and gravel increased by just over a 10 percent (USGS 2016). This trend shows that demand for crushed stone is rising while the supply of stone from alluvial deposits is decreasing. If the Walstrum Quarry stopped supplying crushed stone to the local market, it would further reduce supplies in the face of rising demand and result

in even higher prices. This underscores how important it is for AFS to plan ahead so it can provide a long-term supply of crushed stone to the local market and prevent the cost of crushed stone from becoming very expensive.

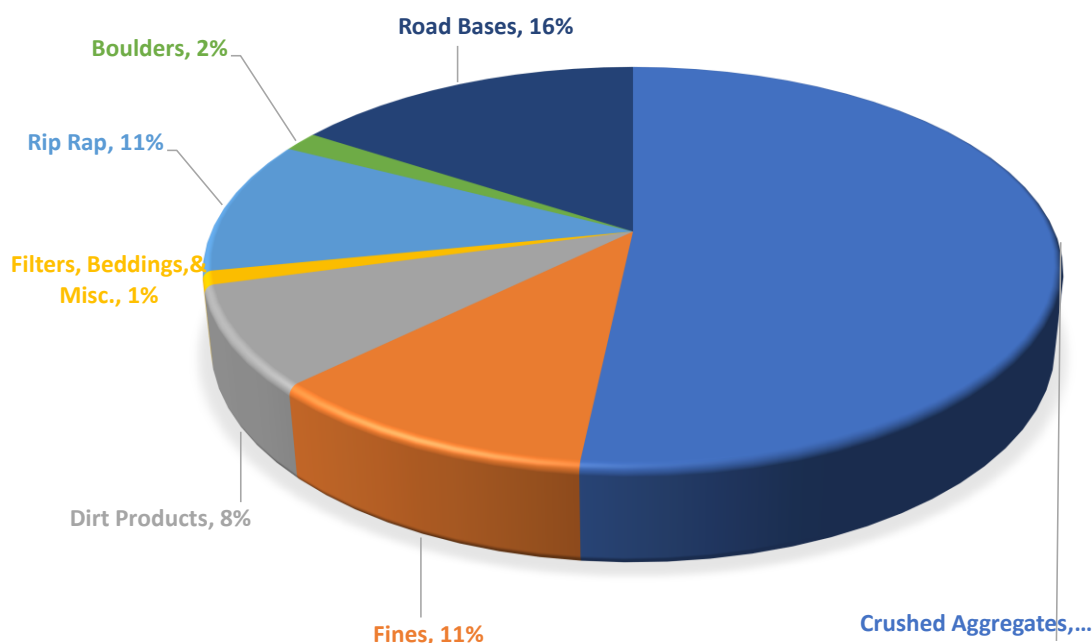
Higher crushed stone prices would act as a drag on local economic activity since it would increase the cost of construction and related activities and reduce the amount of money available to pay employees and proprietors. Higher prices for crushed stone would also create negative secondary economic effects, resulting in lower levels of employment, income, and output.

2.2 History of Walstrum Quarry. The Walstrum Quarry is a surface granite quarry that was first permitted for production in 1983 and has been in continuous operation since. The Walstrum Quarry is the last Greenfield quarry permitted in the DMA. The Quarry is owned and operated by Albert Frei & Sons, Inc. (AFS) near the intersection of Interstate 70 and State Highway 6 in Clear Creek County. It is the largest of only four crushed stone quarries near the DMA and its access to hard rock aggregate allows the Quarry to bring a number of relatively scarce crushed stone products to market, including rip rap, boulders and aggregate with a diameter greater than 1 inch. In planning for the future, AFS is proposing the Spur Amendment to be able to continue to provide these products and meet strong demand in the DMA for years to come.

2.3 Walstrum Quarry Operations and Production. The Walstrum Quarry produces a variety of crushed-stone products. Crushed-stone products are produced through a process that begins by drilling and blasting the Quarry's hard rock resource to create pieces of stone. The stone is moved to a processing plant by employees operating loaders, haul trucks, and excavators. The processing plant crushes the stone to further reduce its size to pre-determined specifications. Screens separate the crushed stone according to its final size and conveyors move the material to a system of specialized bins and silos that load materials directly into customer trucks.

The operations at the Quarry have produced an annual average of 3.2 million tons of material since 2015. The material is used to create a mix of products (Figure 2).

Figure 2.
Average Annual Product Mix Produced at Walstrum Quarry by Percentage of Total Tonnage
(FY2015 to FY2019)



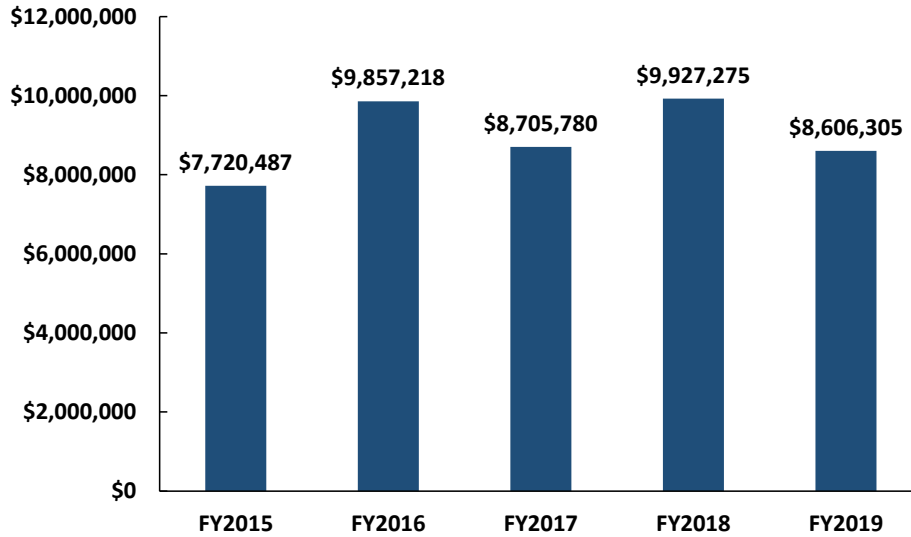
Source: Albert Frei & Sons

Crushed aggregates account for more than half of the Quarry's annual output. Road bases, fines, and rip rap account for approximately 38 percent of the Quarry's production by tonnage. Dirt products, filters and bedding, and boulders make up the remaining output.

2.4 Walstrum Quarry Annual Expenditures (Non-labor and Labor). AFS supports its operations at the Quarry through purchases of goods and services from other businesses. These non-labor expenditures account for the largest share of AFS's annual expenses, amounting to more than \$8.6 million in FY 2019 (Figure 3). AFS's cost of sales at the Quarry, which includes activities and expenses necessary to extract, process, and distribute aggregate for sale, account for the largest share of AFS's annual non-labor expenses.

Since FY 2015, extraction and processing have accounted for between \$4.1 and \$5.1 million of AFS's annual non-labor expenses at the Quarry. Equipment expenditures, including expenditures on mobile equipment, rentals and leases, account for the second largest share of annual expenses. AFS also spends an annual average of \$442,000 on safety, quality control, and regulatory compliance. Operating expenses, which include IT, building maintenance, administration, and other operating expenses account for an average of approximately \$901,000 of the AFS's annual expenditures at the Quarry.

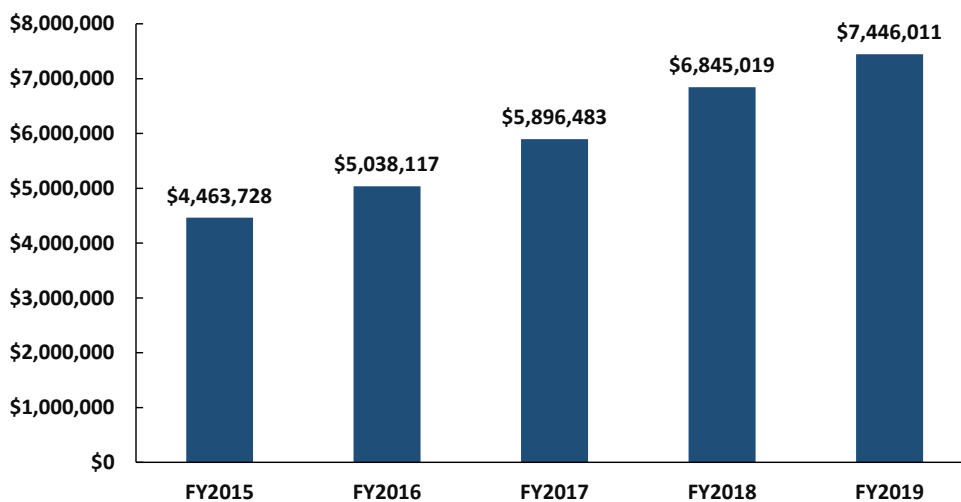
Figure 3.
Total Non-Labor Expenditures at Walstrum Quarry (FY 2015 to FY 2019)



Source: Albert Frei & Sons

In FY 2019, AFS employed 72 workers through its operations at the Walstrum Quarry. The operations at the Quarry employ 61 workers on site and 11 workers support the Quarry's operations at the AFS home office. AFS paid its employees a total of \$7.4 million in wages and benefits, including health and dental insurance, annual paid leave, and 401k matching in FY 2019. Since FY 2015, total employment and total compensation have grown (Figure 4). AFS also contracts directly with companies employing approximately 100 workers to haul material from the Quarry to customer sites.

Figure 4.
Wages and Benefits at the Walstrum Quarry (FY 2015 to FY 2019)



Source: Albert Frei & Sons

2.5 Charitable Giving. AFS has a history of charitable giving to different causes through monetary gifts and in product donations. Some of the most recent charitable contributions include gifts to the Clear Creek Watershed Foundation and the Tom Bennhoff Lake Trail in Georgetown, Colorado. In the last six years, AFS made donations valued at more than \$237,800, including \$150,200 in monetary donations and \$167,600 in product donations.

The community benefits created by AFS's charitable giving have likely exceeded the value of the Company's direct donations since non-profits often use charitable giving from one source to leverage donations from additional sources. This is particularly true for AFS's donations of product, which have likely enhanced the value of monetary donations received by recipient organizations.

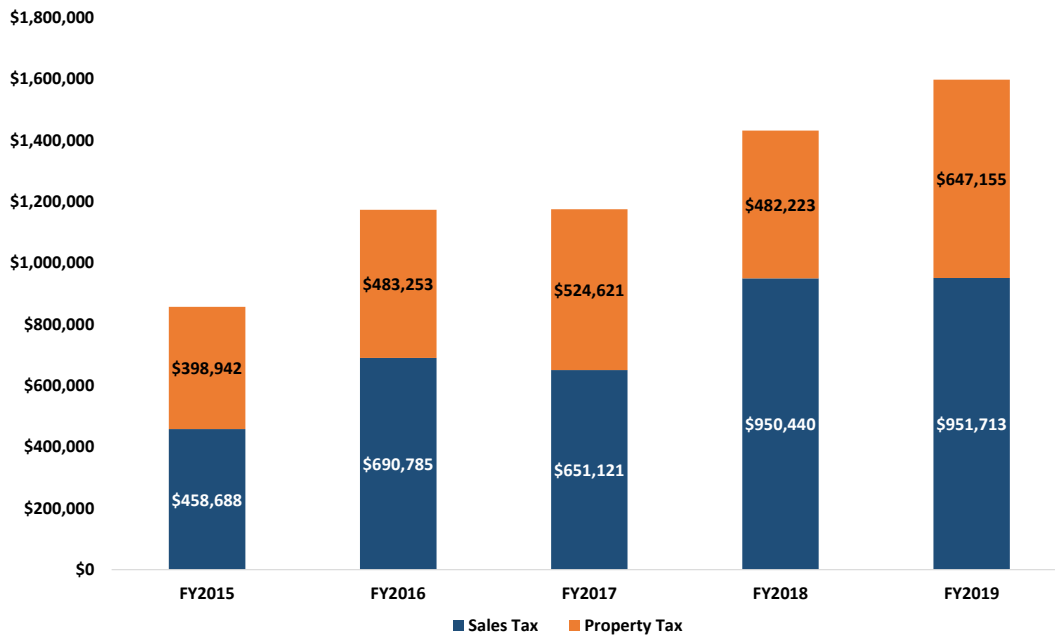
2.6 Importance of Walstrum Quarry to Clear Creek County. Clear Creek County is located in Colorado's Front Range Mountains about 20 miles west of Denver. The County's economic activity is concentrated in a small number of sectors, which poses challenges for the County in terms of creating jobs for its residents and generating sufficient tax revenues to fund public services. Between 1998 and 2013, travel & tourism and mining were the two largest sources of new employment in the County. Plans to phase out the Henderson Mine in CCC, will likely lead to a reduction of jobs in the County. Therefore, maintaining AFS's operations in the County via approval of the Spur Amendment becomes even more critical.

The County's tax base is dependent on property taxes for about half of its annual revenues and those revenues are highly concentrated among a few large businesses. In 2018, the assessed value of the Henderson Mine accounted for approximately 50% of the County's total assessed value (CCC 2018). As the mine phases out of production, the County will have to find new sources of revenue or reduce services to offset the loss of property tax revenues.

As CCC diversifies its economic base by developing its tourism economy, protection of the Walstrum Quarry operations through the approval of the Spur Amendment will help preserve mining as a tax revenue source. The importance of having a tax revenue source other than tourism operations already proved to be critical in 2020 when the tourism industry was sidelined by the Covid-19 pandemic. The Spur Amendment will allow AFS to continue to contribute a reliable and growing stream of annual tax revenues to the County. In addition, while the tourism sector is an important economic engine in CCC, it is also cyclical in nature, which means its contribution to tax revenues can fluctuate over time. In contrast, AFS's operations at the Walstrum Quarry have proven to be sizable and stable source of sales and property tax receipt. This source would be maintained through the approval of the Spur Amendment.

In FY 2019, AFS paid approximately \$1.6 million in sales, use, and property taxes to CCC (Figure 5). This represented approximately 4 percent of the County's total tax receipts for the year. Of this amount, AFS paid approximately \$647,000 in property taxes. Moreover, purchases made by AFS and sales of AFS's products in CCC generated approximately \$945,000 in sales tax revenues. Since FY 2015, AFS has contributed approximately \$6.3 million to CCC's tax revenues. Moreover, AFS's tax contribution to the County has been steadily increasing since FY 2015.

Figure 5.
Property and Sales Taxes Paid by AFS in Clear Creek County (FY 2015 to FY 2019)



Note: *Includes 70 percent of payroll taxes paid for AFS home office

Source: Albert Frei & Sons

It is important to note that non-residential taxpayers form a substantial part of the tax base of property-tax-dependent jurisdictions such as counties and school districts. The Gallagher Amendment—passed into the Colorado Constitution in 1982 — results in assessment limits on residential property, making non-residential taxpayers disproportionately larger contributors to the tax base (for the same value of property). For example, it would take just over \$135 million of residential property value, or approximately a 9 percent increase in the average resident’s property taxes¹, to generate the same amount of property tax revenue that was paid by AFS alone in 2018. Moreover, the Gallagher Amendment, if left in place by voters, will continue to erode the effective residential tax rate and corresponding tax base which funds local public services in order to balance the ratio between assessed residential and non-residential property values as required by the Amendment.

3. Methods of Analysis

AFS’s operations at the Walstrum Quarry contribute to Clear Creek County’s economy through its operational expenditures (Figure 3, above). The spending by the company – known as the direct effect - creates a cascade of economic activity in CCC and the State of Colorado as the

¹ At the current residential assessment rate of 7.15 percent in Colorado, \$135 million of real property has an assessed value of \$9.65 million, which is equal to 9,650 mills. The total mill levy for tax district 80 is 67.026 mills, which would generate a tax revenue of \$647,000 from 9,650 mills of non-residential property values. If the County had to generate an additional \$647,000 of tax revenue from its existing base of approximately \$108,400,000 of assessed residential property value, it would require an increase in residential property taxes of approximately 6 mills, which is 9 percent higher than the current mill levy.

money is spent by other businesses to purchase goods and services and pay employees. This secondary round of spending is known as the indirect effect. The salaries paid to AFS employees (Figure 4, above) also create indirect economic effects in CCC when the employees spend their salaries to purchase necessities like groceries, gasoline, childcare, housing, as well as more discretionary goods and services. In short, direct spending by AFS and its employees supplies money directly to other businesses in CCC, which in turn spend that money at other businesses, creating indirect effects.

The total economic effects —the sum of the direct and indirect economic activity caused by AFS spending— of AFS's operations at the Walstrum Quarry and proposed Spur Amendment can be aggregated and described using metrics such as annual economic output (gross sales receipts), employment, and labor income using the IMPLAN regional economic effect modeling system. IMPLAN is a regional input-output model originally developed by the U.S. Forest Service that is now widely used for economic effect analysis by public and private sector economists throughout the United States. Input-output analysis is a means of mathematically representing the cycle of income and spending in an economy by accounting for the economic relationships between types of businesses as well as between businesses and final consumers.

Interpreting the results from input-output models as economic contributions – that is, economic activity that would otherwise not occur in the absence of the business being studied – requires the assumption that the spending responsible for creating direct effects comes from outside the Clear Creek County economy. The economic activity associated with AFS's operations at the Walstrum Quarry meet this assumption since AFS sells the majority of its product to customers outside of the County.²

3.1 Study Area. BBC constructed an IMPLAN model to estimate the total economic contribution of AFS's operations on the economy of CCC. AFS purchases many goods and services from businesses in CCC, but when goods and services are purchased outside of a county, it is considered leakage from the local economy; those outside effects do not produce economic effects in the model. The local nature of the aggregate business will help to reduce leakage, but some materials and services will still be purchased outside of CCC. The IMPLAN model accounts for such leakages.

3.2 Limitations. IMPLAN is a linear model in that the effect of \$1 of spending is the same no matter how much money is expended. The assumption of a linear system is an accurate approximation of the way an economy works when changes in spending are small. However, when changes in spending are large, a linear representation of the economy may underestimate the effects. Additionally, IMPLAN does not account for price effects that result from changes in the underlying costs of goods and services.

This is particularly important for this study because if aggregate must be imported from outside of Colorado, its costs will increase significantly. The increased costs will be passed on to the buyers of aggregate and will affect the buyers in much the same way a reduction in income

² According to AFS sales figures, only 5,000 tons of product – of more than 3 million tons produced – are sold to customers in Clear Creek County.

would. Since aggregate buyers will be paying higher prices, there will be less money available to pay employees and proprietors. The direct reduction in income would produce negative secondary effects, resulting in lower levels of employment, income, and output.

4. Economic, Fiscal, and Community Contributions of the Walstrum Quarry

AFS direct annual expenditures (Figure 3), employment, and labor incomes (Figure 4) were used to estimate AFS's direct and secondary (indirect) annual economic contributions on CCC's economy using the IMPLAN model. Fiscal effects were estimated using information from the CCC Assessor's Office and tax receipts from AFS. All figures are presented in 2020 dollars.

4.1 Annual Economic Contribution. In FY 2019, activities at the Walstrum Quarry created 102 jobs in Clear Creek County and generated \$8.8 million of income and other compensation and \$23.2 million in economic output (Figure 6). Of this total, AFS employed 61 people directly at the Walstrum Quarry. AFS employees earned approximately \$6.3 million of income and other compensation and generated approximately \$16.9 million in economic output. This activity created an additional 41 indirect jobs in Clear Creek County and generated \$2.5 million in labor income and other compensation and an additional \$6.3 million in economic output.

Figure 6.
Annual Economic Impact of Walstrum Quarry on Clear Creek County and the State of Colorado (2020 Dollars)

Impact Area	Employment	Labor Income	Economic Output
Clear Creek County			
Direct Impact	61	\$6,290,930	\$16,856,566
Secondary Impact	41	\$2,511,368	\$6,348,564
Total	102	\$8,802,298	\$23,205,130
State of Colorado			
Direct Impact	172	\$9,796,011	\$16,856,566
Secondary Impact	158	\$8,506,908	\$23,598,597
Total	330	\$18,302,918	\$40,455,163

Note: Direct employment estimates for the State of Colorado include 100 jobs created by contract labor agreements between AFS and trucking companies hired to haul material from the Quarry to customer sites.

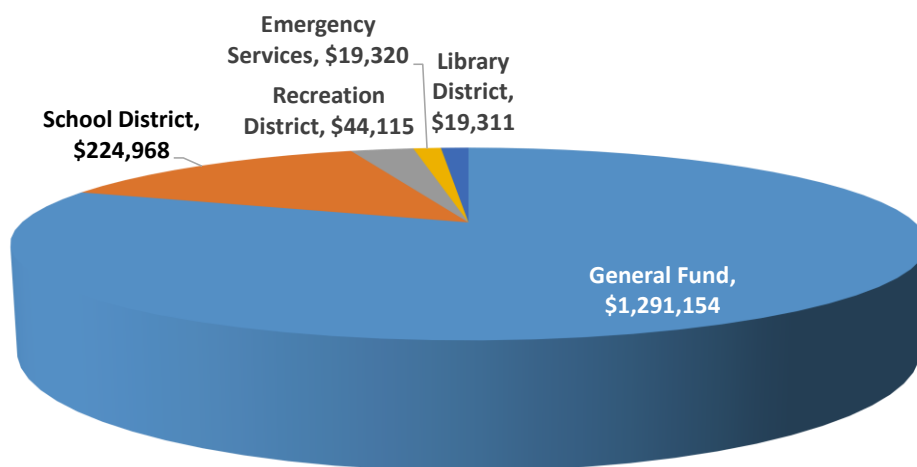
Source: IMPLAN; BBC Research & Consulting.

AFS's economic contribution to the State of Colorado is also shown in Figure 6. In FY 2019, the activities at the Walstrum Quarry created 330 jobs throughout the State and generated \$18.3 million of income and other compensation and \$40.5 million in economic output. Of this total, AFS employed 72 people, 61 directly at the Walstrum Quarry, and an additional 11 employees at the AFS home office. In addition, AFS also contracts directly with companies employing approximately 100 workers to haul material from the Quarry to customer sites. AFS employees and contractors earned approximately \$9.8 million of income and other compensation, generating approximately \$16.9 million economic output. This activity created an additional 158

jobs in the State and generated \$8.5 million in labor income and other compensation and an additional \$23.6 million in economic output.

4.2 Annual Fiscal Contribution of Walstrum Quarry. In FY 2019, AFS paid approximately \$1.6 million in property and sales tax revenues to CCC for activities related to the Walstrum Quarry. Of this, approximately \$952,000 was from sales tax and \$647,000 was from property tax. In total, approximately \$1.3 million of these revenues were allocated to the General Fund, the Clear Creek County School District RE-1 received approximately \$225,000, the Clear Creek County Metropolitan Recreation District, received approximately \$44,100, and the Emergency Services District and the Library District each received about \$19,300 in FY 2019 (Figure 7).

Figure 7.
Recipients of Property and Sales Tax Revenues Paid by AFS in Clear Creek County (FY 2019)



Note: *Includes sales taxes on sales of materials and expenditures made in Clear Creek County. Calculations are based on 2019 Mill Levies for Tax Area 080 in Clear Creek County. The General Fund mill levy includes tax assessments for the County's Road and Bridge Fund, Public Welfare Fund, and Open Space Fund.

Source: BBC Research & Consulting.

4.3 Community Contributions of Charitable Giving. AFS's charitable giving has created a number of benefits for the local community. In addition to the direct benefits created by donating to charitable causes, in many cases charitable gifts are used by non-profits to leverage additional giving from other donors. However, the primary value of AFS's charitable giving is the flow of benefits that the public receives from the projects made possible by the donations.

Since 2015, AFS has made significant donations to the Clear Creek Watershed Foundation and CCC. The Company's donations to the Clear Creek Watershed Foundation allowed the organization to restore several miles of rivers and streams that had been impaired by gold mine drainage, while AFS's donations to the County helped complete the Tom Bennhoff Lake Trail in Georgetown, Colorado.

Restoring rivers and streams creates numerous societal benefits. A study from Colorado found that restoring instream habitat in the Arkansas River created about 15.3 jobs, \$961,000 of labor income, and \$2.8 million economic output per \$1 million in expenditures (USGS, 2016). In addition to the creation of new jobs in the County, river and stream restoration benefits other industries like travel and tourism. By improving water quality, recreational values for rafters, fishermen, and other river and stream users are enhanced (Emerson-Bell, 2008). The benefits received by other industries and river and stream users accrue in perpetuity.

Like river and stream restoration, trail construction also creates a number of societal benefits. American Trails – a trail advocacy organization – has found that trails benefit communities in multiple ways:

- Improving public health;
- Enhancing scenic beauty;
- Increasing property values;
- Increasing spending at local businesses; and
- Providing low or no-cost recreation services.

Estimates from previous studies of trail benefits found that trails generate economic benefits of about \$100,000 per mile, per year for nearby communities and these benefits accrue to the community year after year (OTO, 2019).

4.4 Economic and Fiscal Effects of Extending Reserves. If the Quarry is permitted to extend its operating life it would sustain AFS's economic and fiscal contributions to the County's economy and government tax revenues. The Quarry's managers also anticipate making substantial additional capital investments in multi-million-dollar equipment and machinery if reserves are extended. This level of capital investment would increase the efficiency of operations and generate additional employment, sales, income, and property tax for the County.

If the Quarry is not permitted to continue operating after it exhausts its currently available resources – in about 10 years – production and associated employment will cease. In total, the loss of economic activity from the Quarry would reduce economic output in the County by approximately \$23 million per year and approximately 102 jobs would be lost. The County's tax receipts would also decline by more than \$1 million per year, due to the loss of sales tax and property tax revenues.

In addition, if aggregate must be imported from outside of the County and State, its costs will increase significantly. The increased costs will be passed on to the buyers of aggregate and will affect the buyers in much the same way a reduction in income would. Since aggregate buyers will be paying higher prices, there will be less money available to pay employees and proprietors. The direct reduction in income would produce negative secondary effects, resulting in lower levels of employment, income, and output.

5. Conclusion

AFS's operations at the Walstrum Quarry directly and indirectly employ 102 people in Clear Creek County in addition to generating approximately \$8.8 million in labor income and \$23.2 million in total economic output. Just as importantly, AFS's operations at the Walstrum Quarry generate more than \$1.6 million of tax revenue for the County each year and these revenues are expected to continue in the future as the demand for crushed stone in the DMA stays strong. AFS's tax revenues provide a stable source of funding for County services, including, but not limited to: education, emergency response, road construction, open space, recreation district and the public library, in a time when tax receipts from legacy mine and tourism operators are increasingly uncertain. At the same time, AFS's operations generate little if any demand on these County services that they fund.

While aggregate operations are often opposed by a few members of a community, the negative economic impacts and costs of displacing the industry are shared by all. In addition to the loss of revenues above, the County would also be subject to higher prices for construction and road maintenance. The State would lose a combined total of 259 jobs, \$15.4 million in labor income, and \$39.0 million in economic output. In addition, the loss of one of the few crushed stone quarries near the DMA would act as a drag on construction, road building, and other economic sectors that heavily rely on crushed stone as an input to production.

If AFS is successful in gaining approval of the Spur Amendment to extend production at the Quarry, the economic and fiscal contributions of AFS's operations at the Walstrum Quarry can be sustained well into the future while securing the jobs of AFS's 72 employees and 100 contract workers. In addition, having a local source of crushed stone aggregate will keep material costs for new building, trail construction, road maintenance, and other construction cost competitive.

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Appendix

Figure A1.
Non-Labor Expenditures at the Walstrum Quarry (FY2015 to FY2019)

Non-labor Expenditures	FY2019	FY2018	FY2017	FY2016	FY2015
Cost of Sales					
Extraction and Processing	\$ 4,339,910	\$ 5,122,834	\$ 4,212,865	\$ 4,328,532	\$ 4,132,257
Equipment	\$ 2,009,396	\$ 2,657,504	\$ 2,482,810	\$ 3,397,161	\$ 1,780,853
Utility Expense	\$ 695,062	\$ 713,431	\$ 711,239	\$ 675,239	\$ 844,690
Safety, Quality Control, and Compliance	\$ 548,337	\$ 424,043	\$ 388,806	\$ 599,457	\$ 249,793
Aggregates Purchase & Transfer	\$ 2,135	\$ 2,404	\$ -	\$ 360	\$ (5,042)
Operating Expenses					
IT, Building Maintenance, Administration, and Other Operating Expenses	\$ 844,372	\$ 855,015	\$ 762,159	\$ 713,271	\$ 591,910
Selling	\$ 151,878	\$ 137,941	\$ 126,017	\$ 122,223	\$ 98,877
Vehicles	\$ 15,216	\$ 14,102	\$ 21,884	\$ 20,974	\$ 27,149
Total Cost of Sales and Operating Expenses	\$ 8,606,305	\$ 9,927,275	\$ 8,705,780	\$ 9,857,218	\$ 7,720,487

Source: Albert Frei & Sons

Figure A2.
Employment, Wages, and Benefits at the Walstrum Quarry (FY2015 to FY2019)

Employment, Wages, and Benefits	FY2019	FY2018	FY2017	FY2016	FY2015
Employment					
Walstrum Quarry and Head Office	72	67	58	60	52
Labor Wages and Benefits					
Wages	\$ 5,294,615	\$ 5,259,158	\$ 4,713,532	\$ 4,152,182	\$ 3,677,980
Benefits	\$ 2,151,395	\$ 1,585,861	\$ 1,182,951	\$ 885,936	\$ 785,748
Total Wages and Benefits	\$ 7,446,011	\$ 6,845,019	\$ 5,896,483	\$ 5,038,117	\$ 4,463,728

Source: Albert Frei & Sons

Figure A3.
Recipients of Property and Sales Tax Revenues Paid by AFS in Clear Creek County (FY2015 to FY 2019)

County Tax Recipients	FY2019	FY2018	FY2017	FY2016	FY2015
Sales Tax*	\$ 951,713	\$ 950,440	\$ 651,121	\$ 690,785	\$ 458,688
General Fund	\$ 951,713	\$ 950,440	\$ 651,121	\$ 690,785	\$ 458,688
Property Tax	\$ 647,155	\$ 482,223	\$ 524,621	\$ 483,253	\$ 398,942
General Fund	\$ 339,441	\$ 252,932	\$ 275,170	\$ 253,472	\$ 209,250
School District	\$ 224,968	\$ 167,633	\$ 182,372	\$ 167,991	\$ 138,683
Recreation District	\$ 44,115	\$ 32,872	\$ 35,762	\$ 32,942	\$ 27,195
Emergency Services	\$ 19,320	\$ 14,396	\$ 15,662	\$ 14,427	\$ 11,910
Library District	\$ 19,311	\$ 14,389	\$ 15,654	\$ 14,420	\$ 11,904
Total Tax	\$ 1,598,868	\$ 1,432,663	\$ 1,175,742	\$ 1,174,038	\$ 857,630

Note: *Includes sales taxes on sales of materials and expenditures made in Clear Creek County. Calculations are based on 2019 Mill Levies for Tax Area 080 in Clear Creek County

Source: BBC Research & Consulting.